APPENDICES

APPENDIX A LIST OF NATIONAL AND REGIONAL MEASURES

Pressure	Sector	National measures: Reference/Baseline	National measures: Reference/Baseline summary	National measures: Draft RUMP	National measures: Closing the Gap		Regional measures: Baseline/Reference	Regional measures: Draft RUMP	Regional measures: Closing the Gap
Diffuse pollution	All sectors		Reduce diffuse pollution inputs	Reduce diffuse source inputs: **non-urban land management issues**					
		Reduce diffuse source inputs: **provide first time sewerage**		Reduce diffuse source inputs: **provide first time sewerage**					
				Reduce diffuse source inputs: **reduce sources from built environment**					
		Reduce diffuse source inputs: **retrofit/improve existing SuDs**							
	Agriculture (regulatory)		Regulations, guidelines and standards to reduce pollutant loads to water bodies	CAR 2005: GBR - diffuse pollution, other relevant CAR requirements					
		Integrated Pollution Prevention and Control (IPPC) Regime: **pig & poultry farming**							
		NVZ Action Programmes to **2008**							
		NVZ Action Programmes: revised **2007**							
		Sewage Sludge (Use in Agriculture) Regulations							
		Shellfish Hygiene Directive							
		Silage, Slurry and Fuel Oil (SSAFO) Regulation (SSAFO amendments)		Silage, Slurry and Fuel Oil (SSAFO) Regulation (SSAFO amendments)					
		Waste Management Licensing Regulation							
	Agriculture (non-regulatory)	Accreditation scheme: **revised PEPFAA guidance (2008)**	Education, advice & campaign awareness					Future CSF including fencing of buffer strips in capital grants scheme	
		Campaign/awareness raising and promotion of best practice: **farm advice from NGOs**		SEPA catchment-related activities: CMPs and regional roll-out in areas at risk of not meeting WFD and protected areas standards	Additional investment in catchment-related activities and CMPs over successive planning cycles			Promote/encourage uptake of agri-environment schemes in catchments most at risk	
		Campaign/awareness raising and promotion of best practice: **rural services extension programme**						Co-ordination of partnerships and regulatory activities that give advice to/inspect the agricultural sector to ensure activities it is targeted at WFD priority areas	
		Campaign/awareness raising and promotion of best practice: **rural stewardship schemes**						Target EA compliance work and campaigns at WFD risks	
		Economic incentive: Cross-compliance measures: after **2008 - GAEC review/cross compliance**	Economic incentives for agriculture to reduce agricultural diffuse pollution						
		Economic incentive: Cross-compliance measures: **before 2008**						Targeting CSF advice and capital grants schemes to WFD priorities	
		Economic incentive: Scottish Rural Development Programmes: **2008-2014 (covers agriculture, forestry, land management)**						Targeting of Rural Development Programme for England (RDPE) voluntary modulation funding to WFD priorities (£17m)	
		Economic incentive: Scottish Rural Development Programmes: **before 2007 (covers agriculture, forestry, land management)**						Better publicity of improvements by CSF and the benefits this has on the farmers and the environment	
							Riparian fencing on 4 rivers (Water of Luce, Blackhoch Cree and Annan)		
							Constructed wetland filtration system at 11 farms in Borders region		
	Forestry (regulatory)	CAR 2008: GBRs for diffuse pollution	Regulations to reduce diffuse pollution						
		Forestry Commission Felling Licensing: **the EIA (Forestry) Scotland Regulations 1999**							
	Forestry (non-regulatory)	Economic incentive: **SRDP before 2007**	Economic incentives for forestry to reduce diffuse pollution						
		Economic incentive: **SRDP 2008 to 2014**							
		Voluntary agreements: measures delivery plans (e.g. Forest Design Plans)							
		Campaign/awareness raising and promotion of best practice: **rural services extension programme**	Education, advice & campaign awareness						
		Campaign/awareness raising and promotion of best practice: **Forests and Water guidelines**							
		Campaign/awareness raising and promotion of best practice: **Forest Stewardship Scheme**							
		Campaign/awareness raising and promotion of best practice: **Reduced application of pesticides through spatial planning**							
	Acidification (regulatory)	Pollution Prevention and Control (PPC) Regulations	Controls to reduce the effects of air pollution						
		Local Authority Air Pollution Control	Regulations to reduce the effects of acidification						
		Planning regulations: LA development plans require SuDs							
		Planning regulations: Strategic drainage plans							
	Acidification (non-regulatory)	Emission Trading Scheme	Emissions Trading Scheme						
		Forests and Water Guidelines	Guidance						
	Urban development (regulatory)	CAR 2008: **GBRs require SuDs for new surface water discharges - G&S investment programme, G&S retrofitting of SuDs to industrial areas**	GBRs to reduce urban diffuse pollution						
		CAR 2008: GBRs require SuDs for new surface water discharges							
		Charging schemes: **drainage charges (surface water draining to sewer)**							
	Urban development (non-regulatory)	Campaign/awareness raising: **Scottish Water's technical manual design requirements for SuDs 2007**	Campaign awareness & best practice to reduce diffuse pollution from urban development						
		Voluntary agreements: CFMPs where there are relevant actions within the plan							
		Campaign/awareness raising and promotion of best practice: **trunk roads - source pollution of polluted road drainage before discharging into the public drainage system**							
		Campaign/awareness raising and promotion of best practice: **local road network - source pollution of polluted road drainage before discharging into the public drainage system**							
	Sea and Coastal transport (not a SWMI issue)	International maritime legislation: **IMO ban on use of TBT on vessels <25m (1989)**	One water body at risk of failing GES - therefore not considered to be a significant issue						
		International maritime legislation: **IMO ban on use of TBT on vessels >25m (2003)**							
		International maritime legislation: **IMO ban on use of TBT treated vessels in European ports (2008)**							
		International maritime legislation: **IMP 'International Convention for the Control and Management of Ships' Ballast water and sediments made into legislation'**							
		The Merchant Shipping and Fishing Vessels (Port Waste Reception Facilities) Regulations 2003							
		Non regulatory: Campaign/awareness raising and promotion of best practice: promote better use of port waste reception facilities through greater understanding among mariners of effects of discharging oily wastes at sea							

Point source pollution	*All sectors*	IPPC/CAR: **reduce at source**	Measures to reduce pollution load and increase treatment	IPPC/CAR: **reduce at source *(where new standards)***				
		IPPC/CAR: **increase treatment**		IPPC/CAR: **increase treatment *(where new standards)***				
		IPPC/CAR: **transfer all or part of discharge**	Remediation of sediment and water	IPPC/CAR: **transfer all or part of discharge *(where new standards)***				
		IPPC/CAR: **remediation of sediments and/or water (either by removal or by treating *in situ*)**	Measures to regulate flow to 'naturalise' the flow regime	IPPC/CAR: **remediation of sediments and/or water (either by removal or by treating *in situ*) *(where new standards)***				
		IPPC/CAR: **change timing or frequency of discharge**		IPPC/CAR: **change timing or frequency of discharge *(where new standards)***				
	Sewage disposal (regulatory)	CAR 2005: **waste water discharge to rivers, lochs etc.**	Measures to reduce reduce impacts from point source pollution associated with domestic sewage disposal				Implement first time rural sewerage for key villages such as Cliburn	
		Scottish Water Controls (Water Industry Scotland Act): **trade effluent discharges to sewer**					Catchment campaigns to control private dischergies	
		Scottish Government: **use of polluting substances in products**		Scottish Government: **use of polluting substances in products**			Water Industry improvements to sewage treatment works discharges	
		Scottish Water Charging schemes: **provides incentives for industry to reduce the amount of trade effluent they discharge to sewer**		Scottish Water Charging schemes: **provides incentives for industry to reduce the amount of trade effluent they discharge to sewer**				
		Planning regulations: **develop integrated surface water management plans for all urban areas**						
		Habitats Directive review of consents		Habitats Directive review of consents				
		CAR: **Water company AMPs/Quality & Standards**		Water company Quality & Standards				
		CAR: **First time rural sewerage programmes**		CAR: **First time rural sewerage programmes**				
	Sewage disposal (non-regulatory)	Campaign/awareness raising and promotion of best practice: **pollution reduction campaigns (SW)**	Campaign awareness & best practice to reduce diffuse pollution from sewage disposal					
		Campaign/awareness raising and promotion of best practice: **environmental best practice campaigns for industry**						
		Campaign/awareness raising and promotion of best practice: **pollution reduction campaigns involving HAG and AAG**						
	Aquaculture/fish farming (regulatory)	CAR 2005: **rate or scale of discharges arising from fish farms**	CAR aimed at regulating effects of aquaculture	CAR 2005: **rate or scale of discharges arising from fish farms**				
		Planning regulations: **location of new farms**						
		The Aquaculture and Fisheries Act 2007						
	Aquaculture/fish farming (non-regulatory)	Accreditation schemes: **industry quality assurance schemes**	Strategic planning and other measures to reduce point source pollution from aquaculture					
		Voluntary agreements/measures delivery plan: **area management agreement: loch wide treatment plans for sea-lice**						
		Campaign/awareness raising and promotion of best practice: **code of good practice for Scottish FinFish Aquaculture**						
		Strategic planning: **Eel management plans**						
		Strategic planning: **Freshwater fisheries**						
	Manufacturing (regulatory)	PPC 2005: **regulates industrial processes to minimise pollution**	Regulations and standards to reduce point source pollution from manufacturing					
		CAR 2005: **Priority Substances and Specific Pollutants (2008)**		CAR 2005: **Priority substances and Specific Pollutants (2008)**	Scottish Government: **low P detergents**			
		Planning regulations: **local authority development control - siting of industrial developments**						
		Planning regulations: **local authority contaminated land regime**						
		European chemical controls: new European chemical regulation (REACH) will provide controls over use of hazardous substances						
	Manufacturing (non-regulatory)	Campaign awareness raising and promotion of best practice: **EMS**	Campaign awareness raising to reduce point source pollution from manufacturing					
		Campaign awareness raising and promotion of best practice: **NetRegs**						
		Campaign awareness raising and promotion of best practice: **HAZREFD - reduce use of hazardous raw materials**						
		Campaign awareness raising and promotion of best practice: **Envirowise**						
		Campaign awareness raising and promotion of best practice: **Government's Knowledge Transfer Networks**						
		Campaign awareness raising and promotion of best practice: **SEPA minimising water pollution**						
	Refuse disposal activities (regulatory)	PPC 2005: **pollution prevention from new landfill sites**	Measures to reduce point source pollution from landfills					
		Waste Management Licensing Regulation: **mitigation measures to address historic pollution**						
		Contaminated land programme: **local authorities' closed landfill site**						
		Waste Strategy: **Scotland's Waste Strategy will progressively reduce the volume of waste going to landfill**						
	Mining and quarrying (regulatory)	EPA 1990: **SEPA can control mine dewatering and its discharge from existing mines & quarries**	Measures to reduce point source pollution from mining and quarrying					
		Coal Authority Act: **management and restoration of coal mines & quarries**						
		Planning regulations: **minimises wider environmental impacts**						
	Mining and quarrying (non-regulatory)							

Abstraction and flow regulation	All sectors			CAR control abstraction: **use alternative source/relocate abstraction**					
		CAR control abstraction: **improve water efficiency (e.g. abstraction matches need) or reduce need**	Measures to improve efficiency of water use	CAR control abstraction: **improve water efficiency (e.g. abstraction matches need) or reduce need**					
		CAR control abstraction: **reduce leakage**		CAR control abstraction: **reduce leakage**					
				CAR control abstraction: **control pattern/timing of abstraction (hands off flow/utilisation of storage (new/existing))**					
		CAR control abstraction: **reduce risk of fish mortality in intakes or screens**		CAR control abstraction: **reduce risk of fish mortality in intakes or screens**					
				CAR control abstraction: **provide appropriate baseline flow regime downstream of impoundment**					
				CAR control abstraction: **provide higher flows as appropriate to enable fish migration downstream of impoundment**					
				CAR control abstraction: **provide higher flows as appropriate to maintain/improve habitat downstream of impoundment**					
		CAR control abstraction: **provide fish access between reservoir and tributaries**	CAR regulations to minimise impacts on fish migration	CAR control abstraction: **provide for fish access between reservoir and tributaries**					
				CAR control abstraction: **reduce impact on DO levels downsteam of impoundment**					
				CAR control abstraction: **reduce impact on temperature conditions downstream of impoundment**					
				CAR control abstraction: **appropriate management of rate and range of artificial drawdown**					
				CAR control abstraction: **appropriate management of seasonal variation of water level changes behind the impoundment**					
				CAR control abstraction: **appropriate baseline flow regime downstream of impoundment**					
				Revision of Catchment Abstraction Management Strategies					
				Restoring Sustainable Abstraction Programme					
	Electricity generation (regulatory)			CAR 2005: SEPA **controls on licensed hydropower schemes**					
			Planning regulations to control abstraction	CAR 2005: **Fishery (Electricity) Committee advice - fisheries protection via SEPA licences**					
		Planning regulations: **local authority development and planning control**							
	Electricity generation (non-regulatory)	Campaign/awareness raising and promotion of best practice: **DTI/OFGEM encourage generation from existing large schemes with the potential to exceed 20MW**							
		Campaign/awareness raising and promotion of best practice: **environmental best practice a criterion to be eligible for ROC**	Campaign awareness to reduce the impact of abstraction for the electricity generation sector						
		Measures delivery plan/voluntary agreements: **voluntary agreements between hydropower companies and interest groups such as anglers**							
		Strategic planning: **map of constraints on hydropower development**							
	Water supply activities (regulatory)	CAR 2005: **levels of abstraction, management of dams and efficient use of water**	CAR to manage levels of abstraction and use of water	CAR 2005: **levels of abstraction, management of dams and efficient use of water**					
		CAR 2005 Charging schemes: **incentives for efficient water use by industry**							
	Water supply activities (non-regulatory)	Economic incentives: **SW incentives encourage efficient use of water by industry**	Economic incentive to encourage efficient use of water by industry						
		Campaign awareness planning and promotion of best practice: **building standards should rainwater capture and recycling for garden use and toilet flushing**	Campiagn awareness to improve efficiency of domestic water use						
		Campaign awareness planning and promotion of best practice: **water efficiency should be included for Eco housing as well as energy efficiency**							
		Campaign awareness planning and promotion of best practice: **publicity campaigns promoting efficient water use by domestic customers**							
	Agriculture irrigation (regulatory)			CAR 2005: **SEPA imposes controls on volume of water that can be abstracted and the time over which it can be abstracted, through CAR**					
	Agriculture irrigation (non-regulatory)	Economic incentive: **SRDP - funding for water storage**	Economic incentives to manage water storage						
		Campaign/awareness raising: **promote management agreements between farmers SEPA/SEARS promotes efficient water use**	Campaign awareness to promote efficient water use						

Changes to morphology	All sectors			Improve modified habitat: **removal of barriers or provision of mechanisms to enable fish migration**	Improve modified habitat: **removal of barriers or provision of mechanisms to enable fish migration**			Identify opportunities to improve morphology through programme of reduction in rural maintenance - also need to ensure no deterioration	Identify opportunities to improve morphology through programme of reduction in rural maintenance - also need to ensure no deterioration
				Improve modified habitat: **removal of engineering structures**	Improve modified habitat: **removal of engineering structures**			PSA3 targets for river restoration	
				Improve modified habitat: **improvements to condition of channel/bed and/or banks/shoreline**	Improve modified habitat: **improvements to condition of channel/bed and/or banks/shoreline**				
				Improve modified habitat: **improvements to condition of riparian zone and/or wetland habitats**	Improve modified habitat: **improvements to condition of riparian zone and/or wetland habitats**			Working with partners on fencing, livestock watering/access and tree planting	
				Improve modified habitat: **changes to sediment management maintenance regime**	Improve modified habitat: **changes to sediment management maintenance regime**			Establish prevention measures for known problem species e.g. removal or where not possible then promote habitat management that favours/restores natural species	Establish prevention measures for known problem species e.g. removal or where not possible then promote habitat management that favours/restores natural species
	Historical engineering activties & urban development (regulatory)			CAR 2005: **CAR prevent new damage to the water environment from engineering works on rivers (including maintenance regimes)**					
		FEPA (Food and Environmental Protection Act)	Regulations and development controls to reduce flood risk						
		Planning and development control: **used to identify restrictions on urban development and opportunities for restoration**							
		Planning and development control: **planning advice notes warn against development on flood plains**							
		Planning and development control: **SPP**							
		Floods Directive: **Development of FRMPs**						Identify opportunities to improve morphology through CFMP policies and FRM capital spend	Identify opportunities to improve morphology through CFMP policies and FRM capital spend
					Restoration policy framework for taking forward restoration work (incorporating above measures)			Programme of blocking moorland grips	Programme of blocking moorland grips
	Agriculture (regulatory)		Planning regulations to reduce morphological impacts of agricultural sector	CAR 2005: **CAR prevent new damage to the water environment by engineering works on rivers**					
					Restoration policy framework would allow investment to remove abandoned structures such as old embankments				
		Planning regulations: **planning and development control PAN SPP**							
	Agriculture (non-regulatory)	Economic incentive: **SRDP**	Economic incentives to reduce morphological impacts						
		Economic incentive: **Forestry Committee's woodland grant schemes promote riparian woodland**							
		Economic incentive: **Single farm payments promote good agricultural practice**							
		Campaign awareness raising: **SEARS**	Campiagn/awareness to reduce morphological impacts						
		Campaign awareness raising: **best practice advice from NGO/SEPA/SNH/Forest commission on river management**							
		Campaign awareness raising: **habitat enhancement schemes led by voluntary initiatives**							
	Forestry (regulatory)		Regulations to reduce the impacts of Forestry on morphology	CAR 2005: **CAR prevent new damage to the water environment by engineering works on rivers**					
		EIA							
		Felling licences							
	Forestry (non-regulatory)	Economic incentive: SRDP	Economic incentives to reduce impacts of forestry on morphology						
		Campaign awareness raising: **Forestry and water guidelines**	Campaign awarness/volunatry measures to reduce impact of forestry on morphology						
		Campaign awareness raising: **UK Forestry Standards**							
		Campaign awareness raising: **Woodland Assurance Standard**							
		Voluntary management agreements: **measures delivery plan e.g. Forest Design Plan**							
		Voluntary management agreements: **liaison between agencies and fisheries trust to improve understanding of issues**							
	Land reclamation (regulatory)	Planning regulations: **local authority development controls on new areas of land claim**	Planning regulations to reduce the impact of land reclamation on morphology						
		Planning regulations: **Use of EIA regulations by local authorities**							
		FEPA							
	Land reclamation (non-regulatory)	Voluntary management agreements: **restoration demonstration projects by SNH and NGOs**	Campaign awarness raising to reduce the impact of land reclamation on morphology						
		Restoration regulations: **develop funding mechanisms to promote managed realignment/retreat (as part of FRMPs)**							

Invasive non-native species	All sectors	Salmon Action Plans (SAPs) to meet the objectives of its National Sea Trout & Salmon.	Measures to control the exploitation of salmon and sea trout	Control Invasive non-native species: contain to prevent spread	**Restoration policy framework**		Tweed Invasives Partnership		
		Net Limitation Orders (NLOs) to control legal exploitation of salmon and sea trout.		Control Invasive non-native species: eradicate in situ	Marine Protected Areas (MPA) - national commitment to achieving a coherent network of MPAs to preserve biodiversity and socio-economic uses				
				Control Invasive non-native species: capture & remove	Eel Limitation Orders to control legal exploitation of eels/elver				
				Control Invasive non-native species: prevent introduction					
				Fish Health Directive - limit fish disease & non-native species introductions, audit high risk movements, enforce against illegal activity					
				Alien Species Regulations to control non-native fish n aquaculture					
	Recreation, sporting and cultural activities (regulatory)	Control of pesticides regulations (use of herbicides to control invasive plants in or near water)	Regulations to reduce the impacts of Invasive non-native species						
		The prohibition of keeping or release of live fish (specified species) (Scotland) Order 2003							
	Recreation, sporting and cultural activities (non-regulatory)	Species action framework (Scottish Government/SNH)	Campaign awarness to reduce the impact of Invasive non-native species						
		Implementation of GB Framework Strategy and Implementation Plan when available							
		Campaign awareness: **NetRegs advice on best practice for control of certain alien plant species**							
		Voluntary management agreement: **local authority and local voluntary projects to address problem species**							

Colour code					Colour code		
Baseline mechanisms (and measures) are listed as:		**RBMP mechanisms:**	**Related policy/mechanism:**		**Baseline mechanisms (and measures) are listed as:**	**RBMP mechanisms:**	**Related policy/mechanism:**
Available for water mgt. prior to WFD and recognised in first RBMP (B)		Contribute to the 1st RBMP delivery and have been introduced to support meeting WFD objectives (M)	Required under another driver/government policy other than the WFD and viewed as providing significant benefits of co-delivery (note - also likely to be considered as a part of the future baseline) (FB)		Black = EA measure for ST; Blue = SEPA measure for ST; **Green** = SEPA measure for ST; red = uncertain	Black = EA measure for ST; Blue = SEPA measure for ST; **Green** = SEPA measure for ST; red = uncertain	Black = EA measure for ST; Blue = SEPA measure for ST; Grey = SEPA measure for ST; red = uncertain
New measures from related Drivers that count towards baseline in 2nd and 3rd RBMP (FB)		Potentially contributes to RBMP delivery, if approved by government. This has been identified by which cycle it may influence (i.e. RBMP 1, 2, 3) - RBMP GAP (AM)					

Measures excluded from assessment	Reason
Water Protection Zones	Not scoped in
Work with Newcastle University to reduce/control runoff from arable land	Local measure/not strategic
Till ponds project	Local measure/not strategic
Till wetlands restoration project	Local measure/not strategic
Wooler water flood restoration scheme	Local measure/not strategic
Monitor/influence change in land use from forestry	Local measure/not strategic
Implement additional investigative ecological monitoring	Information gathering/not a strategic effect
Implement additional investigative chemical monitoring	Information gathering/not a strategic effect
Better understanding of apportionment of P to contributing sectors	Information gathering/not a strategic effect
Work with Highways Agency to reduce the impact of road runoff, particularly from the M6	Local measure/not strategic
Modifications of discharge consents/PPC permits	Local measure/not strategic
Publicity on improvements	Local measure/not strategic
Waver/Wampool FRM strategy	Local measure/not strategic
Point source mines	No information
Review of gravel abstraction programmes	Information gathering/not a strategic effect
Research and demonstration projects to improve understanding of cost effectiveness of removing or adapting physical modifications	Information gathering/not a strategic effect
Review all physical barriers to fish passage and culvert and assess the options for improvement	Information gathering/not a strategic effect
Establish a robust monitoring scheme to identify distribution of non-native invasive species. To include the education of key groups through species guides etc.	Information gathering/not a strategic effect
New/enhanced local education campaigns to prevent non-native species instruction	Local measure/not strategic
Provide advice on best method of control and disposal to ensure landowners are given consistent advice	Local measure/not strategic
Develop and deploy a rapid response control programme	Local measure/not strategic
Support the development of the Cumbria Invasive Species forum to co-ordinate invasive species control in Cumbria	Information gathering/not a strategic effect
Link control of WFD invasive species to broader control of invasive species to ensure multiple benefits	Not a strategic effect
Eden Rivers Trust (ERT) - sub-catchment plans for the River Eden	Local measures, but many of the measures already dealt with but other national and regional measures
Cumbria Wetlands Partnership	Local measures, but many of the measures already dealt with but other national and regional measures
EA science	Information gathering/not a strategic effect
ERT flood modelling project	Information gathering/not a strategic effect
Apply Sustainable catchment management plan (SCAMP) to Haweswater catchment	Not a strategic effect
Prevent bank and channel damage by reducing the negative impacts of water and land based activities through better management and ecologically sensitive maintenance (links to reduction in maintenance)	Not a measure
Creation of buffer zones and removal of livestock from watercourse	Local measure/not strategic
Install fish pass under GAT?	Local measure/not strategic
Return substrate through boulder placement	Local measure/not strategic
Removal of conifers exceeding F&WG requirements and work funded by CASS	Local measure/not strategic
In area of long term retention forestry, brashing of riparian strip to 5m high.	Local measure/not strategic

Forest Design Plan has felled large areas that were previously planted to the banks: River Esk, Annan	Not a measure
American Signal crayfish present in this water body, prevention of spread measures include education	Local measure/not strategic
Prevention of crayfish spreading downstream from Water of Ken	Local measure/not strategic
Craik Village reinstatement of original meander	Local measure/not strategic
Craik Village planting of riparian vegetation	Local measure/not strategic
Creation of a wildlife pond at 6 farms in Borders region	Local measure/not strategic
Haltree Willow Spilling Project	Local measure/not strategic
Extension of CSF to cover all of the Waver and Wampool	Local measure/not strategic
Target land drainage consents	Not a measure
Tweed Foundation signal crayfish project	Local measure/not strategic
Reduce illegal fishing on coasts, rivers & still waters. Assess non-compliance with existing and new fisheries management legislation and where appropriate, take enforcement action for non-compliance. Examples include: rod licence evasion, illegal fish movements, illegal fishing/poaching	Similar measure already included in assessment
National Spring Salmon Byelaws. Renewal for a period of another 10 years of the existing national spring salmon byelaws that expire in Dec 08 and give protection to early run salmon by stating that: • no salmon or sea trout may be removed by rod and line or net before the 1st June • fish caught on rod and line between the 1st and the 16th June must be returned alive, • rod and line fishing must be by artificial fly or lure only before the 16th June Ban on the sale of rod caught salmon: "No person shall sell, offer or expose for sale…any salmon or migratory trout which has been taken by rod and line." Carcass tagging: except those caught by rod and line, salmon and migratory trout must be tagged after capture. Log books shall be issued to licensed net fishers, who must be in possession of the book when fishing and correctly fill it out with details of:• number and weight of fish caught • location of capture • time spent fishing • where the fish are sold Subject to on-going ministerial approval.	Similar measure already included in assessment
Promotion of voluntary catch and release for recreational angling by ongoing public campaigns such as leaflets.	Local measure, not strategic
Removal byelaws for coarse fish create the ability to set minimum and maximum sizes for fish that can be removed: At present, byelaws can require fish below a minimum size to be returned alive to the water body but no byelaws exist that require fish above a maximum size to be returned. The marine bill includes a proposal to allow maximum sizes of fish to be taken to be set by byelaws. The advantage is that large, mature individual fish often have a disproportionately high fecundity and are therefore of high importance to the population.	Not strategic
Increase in sites requiring fish screening (fish farm intakes & discharge points)	Local measure, not strategic
Increase awareness / education on fish stocking hazards & regulations (IFM Accreditation scheme; fund training etc)	Similar measure already included in assessment
Removal of undesirable fish species in partnership with owners/tenants, for example topmouth gudgeon	Similar measure already included in assessment
Re-stock elvers to catchments – subject to stock status assessment / recommendations in Eel Management Plan	Local application, not strategic
Stocking of salmon, sea trout and brown trout in relation to restoration, mitigation and inaccessible stretch's. Smolt (juvenile fish ready to migrate to the sea) stocking or fry stocking using local broodstock	Local application, not strategic
Monitoring parasites & diseases	Not strategic
Removing or adapting barriers to fish passage/migration which fall outside the Restoring Sustainable Abstraction programme	Similar measure already included in assessment
Climate Proofing the Cheviot	Local measure, not strategic
RAFTS biosecurity plans	Local measure, not strategic

Support the development of the Cumbria Invasive Species Forum to co-ordinate invasive species control in Cumbria (priority of all INNS measures) including:(a) establish a robust monitoring scheme to identify distribution of non native invasive species, to include the education of key groups through species guides etc.(b) new/enhanced local education campaigns to prevent non-native species introduction(c) establish prevention measures for known problem species - eg removal or where not possible then promote habitat management that favours / restores natural species(d) provide advice on best method of control and disposal to ensure landowners are given consistent advice(e) develop and deploy a rapid response control programme(f) link control of WFD invasive species to broader control of invasive species to ensure multiple benefits.	Local measure, not strategic
2001 & 2008 NVZ Action Plan	Similar measure already included in assessment
Further investigation - monitoring (nutrients)	Not strategic
Catchment Sensitive Farming - Hazardous substances and other pollutants	Similar measure already included in assessment
2001 NVZ Action Plan - advice	Not strategic
2008 NVZ Action Plan - advice	Not strategic
2001 NVZ Action Plan - advice	Not strategic
2008 NVZ Action Plan - advice	Not strategic
Suspension (temporary) on use as sheep-dip	Captured under measure CAR 2005: Priority substances and specific pollutants
Encourage uptake of Voluntary Initiative best practice advice by farmers and agronomists.	Similar measure already included in assessment
Investigate groundwater as potential cause of failure	Similar measure already included in assessment
Re-target regional surface water monitoring to align with highest use areas in England and Wales and check EQS compliance in high use locations. Seek advice from Pesticides Policy.	Similar measure already included in assessment
Pollution prevention - PHS & SPs	Similar measure already included in assessment
Local pollution prevention campaign (including, where appropriate, campaigns to raise awareness of existing Marketing and Use Restrictions) - PS & PHS	Similar measure already included in assessment
Restriction on use of PAH content in oil used in the manufacture of tyres	Captured under measure CAR 2005: Priority substances and specific pollutants
Investigate emissions from sites and appraise options (to reduce at source or treat) to meet EQS in this or subsequent rounds	Not strategic, outcome of investigations cannot be known
Investigate emissions from installations and appraise options (to reduce at source or treat, up to BATNEEC) to meet EQS in this or subsequent rounds	Not strategic, outcome of investigations cannot be known
Investigate emissions from sites and appraise options (to reduce at source or treat) to meet EQS in this or subsequent rounds	Not strategic, outcome of investigations cannot be known
Restrict the use of compounds containing TBT in plastic in applications where the TBT may leach , e.g. PVC use in garage roofs, guttering etc	Captured under measure CAR 2005: Priority substances and specific pollutants
Implementation of best practice controls and remediation at Abandoned Coal Mines	Not strategic, uptake of best practice cannot be known
Investigate discharges from Abandoned Metal Mines and prioritise sites for inclusion in HO agreement with metal mine authorities	Not strategic, outcome of investigations cannot be known
Investigate emissions from working sites and appraise options (of best practice controls at mines and quarries including spoil dumping) to meet EQS in this or subsequent rounds	Not strategic, outcome of investigations cannot be known
Investigate discharges from Abandoned Metal Mines and prioritise sites for inclusion in HO agreement with metal mine authorities	Not strategic, outcome of investigations cannot be known
Implementation of best practice controls and remediation at Abandoned Metal Mines	Not strategic, uptake of best practice cannot be known
Implementation of best practice controls and remediation at Abandoned Metal Mines	Not strategic, uptake of best practice cannot be known
Ban on TBT marketing in the EU. (Imports of products containing TBT still allowed if products not marketed as biocides).	Not strategic, effect of ban cannot be known
Identify hot spots for sediment and other pollutants from highway run-off	Not strategic, outcome of investigations cannot be known
Improved design or improved codes of practice for runoff, e.g. from highways, and other transport	Not strategic, outcome of improved design cannot be known
Ban domestic waste burning, construction and demolition waste burning	Not strategic

Evaluate options to further reduce domestic waste burning, construction and demolition waste burning	Not strategic
Encourage enhanced use of SUDs	Not strategic, uptake of encouragement cannot be known
Initiatives to reduce vehicle emission limits	Not strategic, outcome of initiatives cannot be known
Improved street and green space cleaning	Not strategic
Investigate emissions from STWs and confirm whether further investigation into sources discharging to sewer is required	Not strategic, outcome of investigations cannot be known
Investigate emissions from STWs and confirm whether further investigation into sources discharging to sewer is required	Not strategic, outcome of investigations cannot be known
Investigate discharges to sewer from auction markets and appraise options (to reduce emissions at source or at STWs) to achieve EQS in this or subsequent rounds.	Not strategic, outcome of investigations cannot be known
Extension of abstraction control to include previously exempt areas	Local effect, not strategic
Reduction of demand through promotion of free household meters	Similar measure already included in assessment
Coordinated education and awareness on water efficiency and re-use to promote value of water	Similar measure already included in assessment
Reduction in water use for specific sectors - including water efficiency plans that incorporate water reuse / recycling, rainwater harvesting and other similar methods, clean and dirty water separation	Similar measure already included in assessment
Reduction of leakage through active leakage control and customer supply pipe repair policies	Similar measure already included in assessment
Include strong water efficiency policies in Spatial Strategies and Local Development Plans / Frameworks	Similar measure already included in assessment
Investigate the use of smart meters.	Similar measure already included in assessment
Promote the efficient and responsible use of water through a targeted water efficiency campaign	Similar measure already included in assessment
Reduction of leakage through active leakage control and customer supply pipe repair policies	Similar measure already included in assessment
Reduction of demand through promotion of free household meters	Similar measure already included in assessment
Reduction of demand through installation of domestic meters on change of occupier	Similar measure already included in assessment
Natura 2000 sites Modification of Abstraction licences to ensure no adverse effect on site integrity	Similar measure already included in assessment
Sites of Special Scientific Interest - Modification of Abstraction licences to ensure no adverse impact on conservation objectives	Similar measure already included in assessment
Investigations at other water dependent nature conservation sites perceived to be adversely affected by abstraction	Not strategic, outcome of investigations cannot be known
Improved flow estimates for surface water bodies and water balances for groundwater bodies	Outcome of investigations cannot be known
Review and improve Environmental Flow Indicators	Outcome of investigations cannot be known
Investigations to determine cost effective measures to manage abstraction to support Good Ecological Status	Outcome of investigations cannot be known
Investigations to determine cost effective measures to manage abstraction to support Good Ecological Status	Outcome of investigations cannot be known
Investigations to determine cost effective measures to manage abstraction to support Good Quantitative Status	Outcome of investigations cannot be known
Investigations to determine cost effective measures to manage abstraction to support Good Quantitative Status	Outcome of investigations cannot be known
Investigations to determine cost effective measures to support Good Ecological Potential	Outcome of investigations cannot be known

Revoke unused licences on the Caldew and Lower Eden.	Local measure, not strategic
Retro fitting of rainwater harvesting systems in homes.	Local measure, not strategic
Investigate the use of smart meters.	Similar measure already included in assessment
Retro fitting of grey water recycling systems in homes.	Local measure, not strategic
Measures to prevent unacceptable impact on local water environment caused by licensed abstraction	Similar measure already included in assessment
Measures to prevent unacceptable impact on local water environment caused by licensed abstraction	Similar measure already included in assessment
Measures to prevent unacceptable impact on local water environment caused by licensed abstraction	Similar measure already included in assessment
Modification of abstraction licences to support Good Status (groundwater or surface water)	Similar measure already included in assessment
Measures to prevent unacceptable impact on local water environment caused by licensed abstraction	Similar measure already included in assessment

APPENDIX B ENVIRONMENTAL BASELINE

SECTION 1 - INTRODUCTION

1.1 In order to be able to understand the significant environmental effects of the Solway Tweed River Basin Management Plan (RBMP), it is necessary to set out some basic information about the current environment in the district. From the many possible water related topics that the RBMP will cover, the Agencies[1] have sought to focus on those that we consider will allow us to carry out the most appropriate level of assessment. Accordingly, given the wide geographic coverage of the Solway Tweed RBMP, and the range of water related issues the RBMP will touch upon, it is not possible to provide baseline information to a very detailed level.

1.2 More detailed information, particularly about the water environment and water dependent biodiversity, is available in the Significant Water Management Issues (SWMI) Report for the Solway Tweed RBD which was published for consultation on 25 September 2007 and is available at www.sepa.org.uk/consultation/index.htm. Where appropriate, such information is signposted in this baseline. Further information will also be included within the draft RBMP when published.

1.3 The Solway Tweed RBD, as shown in Map 1, covers an area from Stranraer on the west coast to Berwick upon Tweed on the east coast, and from Peebles in the north to Brough in the south. The RBD incorporates the catchments that feed into the Solway Firth and Tweed Estuary, the estuaries themselves and the groundwater that underlies the district. The district has an area of around 17,500 km^2 (of which approximately 3,739km^2 falls within England, the remainder in Scotland). The main river catchments in Scotland include the Rivers Tweed, Esk, Annan, Nith, Ken, Dee and Cree and their associated wetlands. In England the catchment includes the Rivers Eden, Irthing, Petteril, Esk, Wampool, Till and Beamish.

1.4 The landscape is largely rural with an extensive coastline. The RBD has extensive agricultural activity, although as the rural economy continues to diversify, tourism has increased in importance. The RBD supports a wide range of internationally important habitats and wildlife, with many of the water bodies designated as Special Areas of Conservation and Special Protection Areas, notably the River Eden and tributaries and the Solway Firth. There are also many excellent salmon and sea trout rivers in the district.

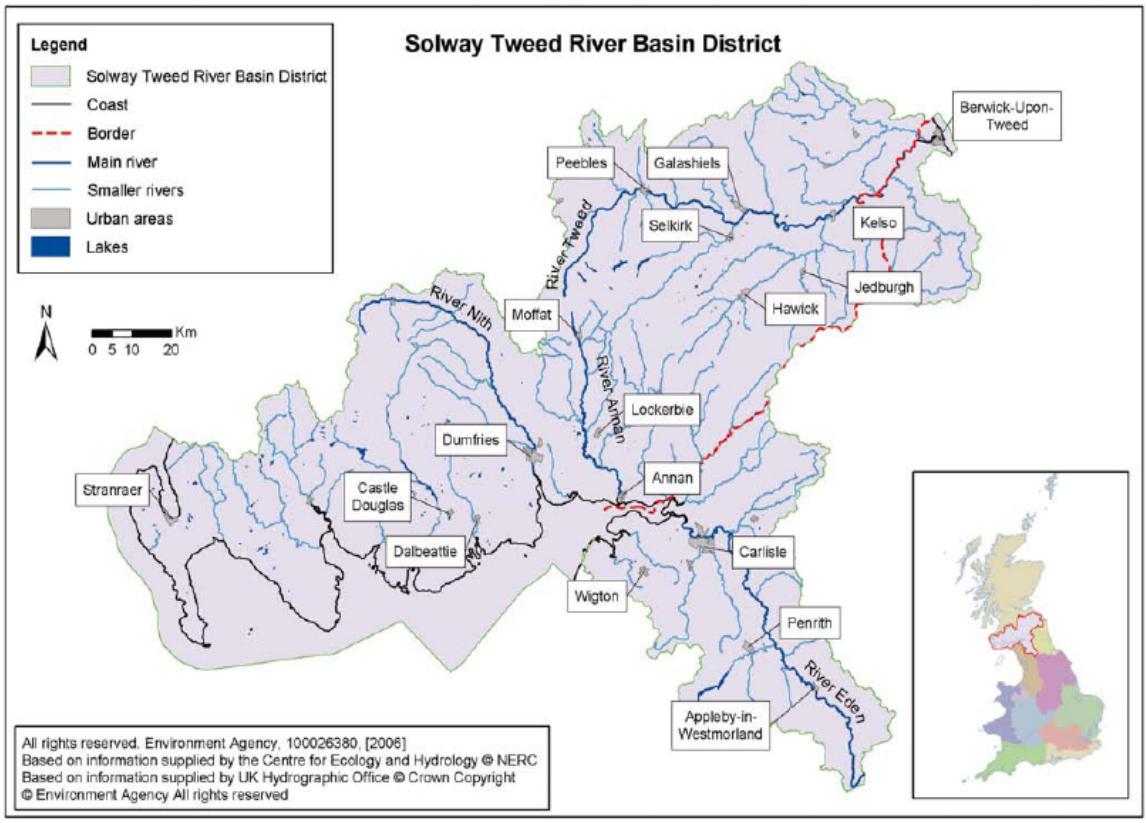
1.5 The area is home to approximately 450,000 people, with key economic activities including tourism, agriculture, forestry, fish farming and manufacturing.

1.6 The Solway Tweed RBD has higher rainfall than much of the rest of the UK, particularly in the west. The vast majority of public water supply comes from surface waters, the remainder from groundwater. There are many excellent salmon rivers in the district and the generally clean water supports sectors such as fish farming and whisky manufacture.

1.7 The most important water related environmental problem is diffuse pollution. This is related to the importance of agriculture in the region and is summarised in detail in Section 5.3

[1] *The Solway Tweed RBMP is being prepared jointly by the Environment Agency and the Scottish Environment Protection Agency.*

Map 1 - Solway Tweed River Basin District



SECTION 2 - BIODIVERSITY, FLORA AND FAUNA

2.1 Biodiversity is the variety of life. It is also important for our health and well being, and as a provider of natural services. These ecosystem services sustain the environment on which we depend and mitigate impacts arising from human activity. The RBD's peat bogs, for example, contribute to the purification of water and to the locking-up of carbon dioxide and along with other wetland habitats can help control and mitigate the impacts of flooding.

2.2 The RBD's biodiversity has developed over a relatively short period since the last ice age, which ended around 10,000 years ago. The relatively short period for the establishment of the species and habitats which make up the area's ecosystems means that there has been little time for new species to evolve from existing ones. The fauna and flora of the RBD are, therefore, generally characterised by species that have good dispersal abilities or which have arrived from neighbouring geographical areas[2].

2.3 The RBD supports tens of thousands of species of animal, plant and microbes. The vast majority of these we know very little about, the focus of our knowledge being largely on birds, mammals, fish, amphibians, reptiles and vascular plants, even though together they make up a small amount of the total species. These species inhabit a wide range of habitats that are present across the RBD. Habitats in the RBD's landscape that we see today consist of:

- a few remnants of the original colonising species and habitats;
- habitats derived from prehistoric human activities and species that these support;
- habitats resulting from the more recent intensification of agricultural and industrial activity, and increasing urbanisation over the last 250 years, with the species that inhabit these.

2.4 Many of the habitats are internationally important. In terms of protected sites, the importance of the RBD in a European context is recognised in the designation of 27 Special Areas of Conservation (SACs)[3]. Most notable are the Inner Solway Firth, which has the third largest area of intertidal sand and mudflats in Britain, the Wigtownshire mosses, which are considered to be some of the best blanket bogs in the United Kingdom and the River Eden. SACs have also been designated to protect a number of key species, including lamprey.

2.5 The RBD's location, extensive coastline and wetlands make it very important for bird life, particularly for migrating wildfowl and seabirds. 10 Special Protection Areas (SPAs)[4] have been established under the EU Birds Directive to protect the breeding, feeding and roosting habitats of migrating bird species. The locations of all SPAs and SACs in the Solway Tweed RBD are shown in Map 2.

2.6 In addition to these European designations, the RBD also has a network of over 220 Sites of Special Scientific Interest (SSSIs)[5].

2.7 A breakdown of all protected sites in the Solway Tweed RBD is provided in Table 1.

---

[2] SEPA (2006) Change Tomorrow Today: State of Scotland's Environment.

[3] Special Areas of Conservation (SACs) are areas designated under the European Directive commonly known as the "Habitats Directive" where they support rare, endangered or vulnerable natural habitats and species of plants or animals (other than birds). Special Protection Areas (See below) and SACs form what is known as the Natura 2000 network of sites. Together these cover sites of European importance for nature conservation.

[4] Special Protection Areas (SPAs) are classified under the EC Directive on the Conservation of Wild Birds (79/409/EEC), commonly known as the "Birds Directive". SPAs are intended to safeguard the habitats for which they are selected and to protect birds from significant disturbance. Together with SACs, these cover sites of European importance for nature conservation.

[5] SSSIs represent the best examples of Scotland's natural heritage and are designated by Scottish Natural Heritage (SNH) for their plants, animals or habitats, their rocks or landforms.

Table 1 - Summary of protected site numbers in Solway Tweed RBD

	SSSI	*SAC*	*SPA*	*NNR*[6]	*Ramsar*[7]
Total in RBD	*225*	*27*	*10*	*15*	*8*

2.8 The Solway Tweed RBMP will play an important role in protecting and enhancing the area's aquatic biodiversity. Current biodiversity issues being experienced in the water environment include:

- Continued increases in nitrogen and phosphorus levels in surface waters, principally from intensive agricultural practices, are driving ecological changes in plant communities in a number of rivers, lochs/lakes and estuaries;
- Certain species of flowering plants and algae thrive on the excess nutrients. The resulting prolific growth may reduce the amount of oxygen and sunlight in the water, threatening the survival of other plants, invertebrate and fish;
- More frequent and severe river flooding leads to more dynamic river habitats, which can affect river ecology;
- Increased likelihood of summer droughts, leading to river water quality problems, may have significant impacts on invertebrates and fish;
- Acidification is a potential problem across large areas of upland Scotland, but evidence of ecological damage is mainly confined to freshwaters in Galloway (in Solway Tweed RBD).
- Introduction of Invasive non-native species which can compete with native flora and fauna and result in a loss of biodiversity.

2.9 Many of the District's rivers are designated under the European Directive (78/659/EEC) as freshwater fish protected areas. This legislation aims to protect and improve the quality of running or standing waters which support or which, if pollution were reduced or eliminated, would become capable of supporting fish life. Member States must designate waters as being capable of supporting salmonid or cyprinid fisheries. They are then obliged to monitor the waters and demonstrate that fish populations are safeguarded from the harmful consequences of pollution. All Scottish waters in the RBD designated by this Directive are identified as salmonid waters.

2.10 In addition to sites formally designated for their natural heritage importance, Local Biodiversity Action Plans (LBAPs) have been prepared across the Solway Tweed RBMP area. These set out priority species and habitats and actions for their protection and enhancement. It is not practical or meaningful in a strategic plan like the Solway Tweed RBMP to identify all species and habitats covered, however this information is available from the LBAPs themselves through the links in Table 2.

[6] National Nature Reserves (NNRs) are designated under the National Parks and Access to the Countryside Act 1949 or the Wildlife and Countryside Act 1981. NNRs are used to protect a range of wildlife and landscapes, including many rare species and habitats of international importance.

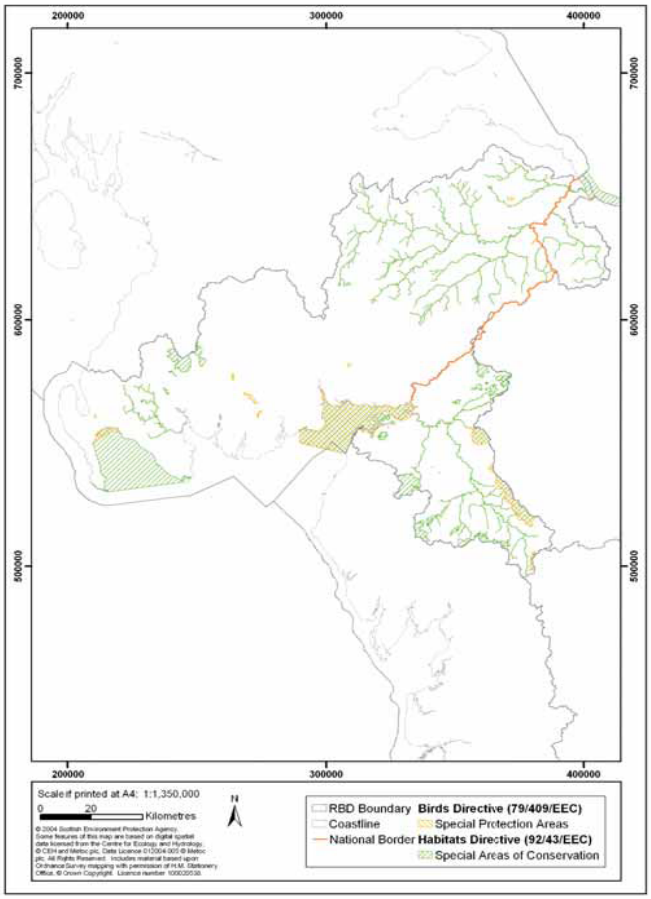
[7] Ramsar sites are wetlands of international importance designated under the Ramsar Convention of 1971.

Table 2 – Links to Local Biodiversity Action Plans covering the Solway Tweed RBD

Name of LBAP	*Weblink*
Dumfries and Galloway	***http://www.dumgal.gov.uk/dumgal/MiniWeb.aspx?id=255&menuid=3913&openid=3913***
Scottish Borders	***http://www.ukbap.org.uk/library/LBAPS/ScottishBorders.pdf***
Cumbria	***http://www.wildlifeincumbria.org.uk/cbap/habitat_biodiversity.asp***
Northumbria	***http://www.northumberland.gov.uk/drftp/5532.pdf***

2.11 In addition, there are numerous sites which are protected by local designations because of their importance to the locality. Given the geographic scale of the Solway Tweed RBMP, it is not proposed to detail the number and location of such sites. Further information on these local designations can be found on the relevant local authority websites.

Map 2 – Location of Special Protection Areas (SPAs) and Special Areas of Conservation (SACs)



SECTION 3 - POPULATION

3.1 Demographic Trends

The Solway Tweed RBD is predominantly rural in nature. Around 450,000 people live in the area, mostly in and around the towns of Penrith, Carlisle, Berwick and Dumfries and in smaller towns such as Galashiels and Hawick. The population density is low at around 23 people per square kilometre. The population is expected to remain roughly constant with declining birth rates offset by in migration to the area. Migration into the Scottish Borders has been more pronounced (3.6% between 1995 and 2005) and this trend is expected to continue. Employment in the Solway Tweed RBD currently stands at almost 175,000 people, and is expected to decline slightly to approximately 162,000 by 2015. This is due to demographic change, with more of the population retiring from the workforce than joining it. Parts of the district have poor or non existent local services (e.g. village shop, post office, local GP etc.) and this has contributed to some outward migration from very rural areas across the district. A small number of areas, both urban and rural, are characterised by pockets of economic deprivation, poor quality housing and degraded environment.

3.2 Employment

In the Solway Tweed RBD, while agriculture and forestry are key land use activities (the south of Scotland has double the Scottish average percentage of employment in these sectors), it is public administration and the service sectors which employ the most people. Manufacturing remains important in the area and is above the UK average, although this is declining. The dependency on agriculture and the non financial service sector is higher than in other parts of Scotland or the North West region of England.

3.3 Tourism

Tourism is an important and growing source of employment and income throughout the RBD. It is expected to support (by 2015) over 10% of employees (14.5% in Eden District) and generate approximately 6% of income. Cumbria received 15.54 million visitors in 2005, with an economic value of £1,129m. With 19% of the Lake District National Park in the RBD, this is a significant industry. The natural beauty of the district is an important factor for tourists, as are the visitor facilities provided to facilitate tourism. In the Visit Scotland Tourism Attitudes Survey 2005 92% of respondents identified scenery as being either important or very important in influencing their choice of Scotland as a tourism destination. 89% also identified the natural environment as being important or very important. The coast to coast, Pennine Way and Hadrian's Wall paths both pass through English part of the RBMP area, as do the Hadrian's, the Pennine, C2C and Penrith to Carlisle cycleways. The Southern Uplands Way extends across much of the Scottish side of the district.

3.4 Recreational Use of Water

There is a wide range of recreational activities that rely on water in the RBD, including activities which take place on water bodies such as canoeing, kayaking, windsurfing and yachting. Some recreational activities abstract and discharge notable amounts of water for recreational use, in particular swimming pools.

Although those taking part in many of these activities are not charged for water use, recreational use of water can contribute significantly to the local economy through spending. For example, angling contributed over £112 million to the Scottish economy in 2003, and is estimated to contribute around £8m to the Scottish Borders economy.

Activities that use water bodies are affected by a range of features of the water body. Bathing and paddling in particular are influenced by water quality. The blue flag standard symbolises water and environmental quality, among other factors such as

safety and sanitary facilities. Of the 105 blue flag beaches and 12 marinas in the UK, three are in Solway Tweed RBD (Kirkcudbright, Maryport and Whitehaven).

3.5 Human Pressures on Water

In the Solway Tweed RBD, diffuse pollution and morphological pressures are the most common causes of rivers and lakes being at risk. Transitional water bodies are mainly at risk from point source pollution and morphological pressures. Coastal water bodies are at risk from point and diffuse source pollution, whereas groundwater bodies are mainly at risk from diffuse pollution. These pressures reflect the rural nature of the district and the predominance of agriculture. Further details on the pressures on waterbodies in the RBD are provided in Section 5 and in the Significant Water Management Issues Report (www.sepa.org.uk/consultation/index.htm).

3.6 Economic use of water

"Solway Tweed River Basin Characterisation: An economic analysis of water use", which is available at www.sepa.org.uk/pdf/publications/wfd/Article_5_Solway_Tweed_Economic.pdf was published in 2005 and sets out the key economic activities dependent upon water in the Solway Tweed RBD. These are summarised in Section 11 (material assets) but for full details please reference the report.

SECTION 4 - HUMAN HEALTH

4.1 Across the district, the generally very good environmental conditions mean that there are few human health issues attributable to the quality of the environment. In respect of the water environment, there are a number of issues which are relevant to human health.

4.2 **Bathing Waters**

SEPA and the Environment Agency report on the quality of identified bathing waters in Scotland and England. There are 8 identified bathing waters in the district. All but the Sandyhills bathing waters in the district were classified as good status for 2007. Details of the recent monitoring of bathing waters sites to 2007 are provided below.

4.3 *Southerness, Dumfries and Galloway*

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
n/s	n/s	Good	Good	Poor	Good	Good	Poor	Good	Good	Good

Southerness was identified as an EU Bathing water in 1999. In 2007 all samples passed at least the EU mandatory standards, with most of them meeting the more stringent guideline values. The main threat to water quality is from sewage inputs especially from Dumfries. In addition to the sources of sewage from Dumfries, there are a number of Scottish Water discharges from small communities along the Nith Estuary.

The combined sewer overflows (CSOs) in the Troqueer catchment of Dumfries were upgraded in 2005 to provide better screening and to reduce the frequency of overflows. However, there are still issues with overflow frequency at two outfalls on the Troqueer network and premature overflows of settled sewage at Troqueer waste water treatment works which require to be addressed. The only private waste water treatment plant is at Southerness, which serves the caravan park and village. This discharge was upgraded to full treatment at the end of 2005.

4.4 *Sandyhills, Dumfries and Galloway*

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Poor	Poor	Good	Poor	Poor	Good	Good	Good	Good	Good	Poor

Sandyhills bathing water has had a varied history of compliance and unfortunately achieved poor water quality in 2007. The main threat to bathing water quality here is agricultural run-off. Work funded by the Scottish Executive, through a biogas and composting project, together with an associated farm inspection programme carried out by SEPA, now appears to be reducing agricultural diffuse pollution.

4.5 *Rockcliffe, Dumfries and Galloway*

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
n/s	n/s	Good	Poor	Good	Poor	Poor	Good	Good	Good	Good

Prior to its first identification in 1999, the bathing water at Rockcliffe had not been of consistently satisfactory quality. However, since the local sewage treatment upgrading completed by Scottish Water before the 2004 bathing season, it has consistently complied with EU good quality requirements.

4.6 *Brighouse Bay, Dumfries and Galloway*

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Good	Good	Good	Good	Good	Good	Poor	Good	Good	Good	Good

Brighouse Bay is a small sheltered sandy beach between rocky outcrops. With no significant sewage discharges into this catchment, there is little doubt that the

occasional high bacterial counts in samples from this site are due to agricultural run-off both from farm steadings and diffuse agricultural run-off. A project funded by the Scottish Executive was completed last year. This involved extensive fencing of watercourses and provision of alternative livestock watering points. Two farm wetlands were also introduced to reduce poaching (trampling) of riverbanks and livestock excreta entering the Brighouse Burn. It is not yet clear if the good overall water quality achieved again in Brighouse Bay owes more to the relatively dry weather of the 2005 and 2006 summers, or the extensive efforts to reduce agricultural sources of pollution.

4.7 *Carrick, Dumfries and Galloway*

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
n/s	n/s	Good	Good	Good	Good	Excellent	Poor	Good	Good	Good

Carrick was identified as a bathing water in 1999, and has since had a rather variable quality record. In 2007 it was of good quality status. As a result of the failure in 2004, a programme of farm inspections was undertaken. The conclusion of these inspections was that agricultural run-off from this catchment was unlikely to have been the cause. However, as there are no major sewage inputs nearby, SEPA is considering further possible contributors to this failure. These include input from nearby islands which are heavily populated with sea birds, or tidal influences carrying diffuse pollutants along the coast from the Cree Estuary.

4.8 Skinburness, Cumbria

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Good	Good	Excellent	Good	Good	Good	Excellent	Good	Good	Good	Good

As shown above, Skinburness, Cumbria has been measured as Good or better for previous eleven years.

4.9 Silloth, Cumbria

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Good	Good	Good	Good	Excellent	Good	Good	Good	Good	Excellent	Good

As shown above, Silloth, Cumbria has been measured as Good or better for the previous eleven years.

4.10 *Spittal, Northumberland*

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Good	Poor	Good	Poor	Good	Good	Good	Poor	Good	Good	Good

As shown above, measurements at Spittal have been variable over the last ten years, although recent measurements have been at the “good” standard.

4.10 **Drinking Water Abstractions**

Protected areas for drinking water supplies have been identified as water bodies that supply a daily average of more than 10 m^3 water for drinking or supply more than 50 people. In the Solway Tweed RBD there are 61 water bodies identified as Drinking Water Protected Areas. It is notable that there is significant export of drinking water from the RBD to other parts of the North West region via abstraction from Haweswater Reservoir, which has an average abstraction of 432 million litres per day. There are several other significant public water supply abstractions in the district, including the Rivers Eden and Gelt, which supply to the Carlisle area.

4.11 **Private Drinking Water Abstractions**

In addition to public supply of water, private abstraction for drinking water also takes place. In the Scottish part of the Solway Tweed RBD there are 2,924 private water

supply abstractions. In the English part there are 19. However, these figures are not directly comparable due to the different licensing regimes in Scotland and England. In England any abstraction of less than 20 m^3/day does not require a licence. This is considerably more than the average amount used by a single household and therefore there are likely to be significantly more unlicensed private drinking water supply abstractions in England.

4.12 **Waste Water Treatment and Disposal**

Characterisation data indicate that more than a third of the rivers and lochs/lakes at risk of failing to meet the WFD objectives by 2015 in the Solway Tweed RBD are affected by point source or diffuse source pollution from sewage disposal activities.

As a predominantly rural area, many properties will dispose of waste water to septic tanks. Septic tanks have the potential to discharge nutrients to the water environment including nitrates, phosphates and ammonia. Discharges from septic tanks can also lead to increased biochemical oxygen demand (BOD), reducing oxygen availability for flora and fauna in the water body.

SECTION 5 - WATER

5.1 The key purpose of the Solway Tweed RBMP is to protect and enhance the water environment across the district. The bulk of the work undertaken will address issues related to the water environment. The most comprehensive and current assessment of the key environmental issues relating to water is the Significant Water Management Issues (SWMI) report for the Solway Tweed RBD. Both summary and detailed information on the significant pressures and issues in this district can be accessed here www.sepa.org.uk/consultation/index.htm. A summary of the key issues derived from SWMI is set out below.

5.2 Overall, water quality in the Solway Tweed area is generally good. However, the Characterisation Report (2005) and more recently the Significant Water Management Issues Report (2007) identify a number of pressures upon the district's waters which may result in some not achieving good status. The initial characterisation assessment indicates that 56% of all water bodies in the Solway Tweed RBD may not meet WFD default objectives. These waters were 289 river, 21 lake, 6 transitional, 2 coastal and 16 groundwater water bodies. In the District, diffuse pollution and morphological pressures are the most common causes of rivers and lakes being at risk. Transitional water bodies are mainly at risk from point source pollution and morphological pressures. Coastal water bodies are at risk from point and diffuse source pollution, whereas groundwater bodies are mainly at risk from diffuse pollution.

5.3 For ease of reference, the water environment has been described in relation to pressures upon it from activities which may result in:

- Pollution (diffuse and point source);
- Abstraction;
- Morphology (alterations to the physical form of waterbodies);
- Invasive non-native species.

Each of these is briefly described in turn.

5.4 Pollution (Diffuse and Point Source)

5.4.1 Perhaps the most well-known issue affecting the water environment is pollution. Pollution can threaten the quality of all parts of the water cycle from groundwater to rivers, lochs/lakes, estuaries and coastal waters. Pollution means that there is too much of a material (a pollutant) in the water that is harmful to water quality or aquatic plants or animals. A pollutant can be anything from a poisonous metal or pesticide to a nutrient which can choke waters with excessive growth, or even silt that can smother fish spawning beds.

5.4.2 Pollution comes from one of two sources:

- local (point source pollution) sources, e.g. pipes discharging effluent from industrial sites, wastewater treatment plants or mines;
- widespread (diffuse pollution) sources, e.g. land use activities such as farming, forestry and urbanisation.

5.4.3 The significant issues relating to the pollution of the water environment in the Solway Tweed RBD are listed in Tables 4 and 5 for diffuse source and point source pollution respectively. Information on the individual significant issues is described in Sections 5.4.5 to 5.4.9.

Table 4 - Significant diffuse source pollution issues in the Solway Tweed RBD

Key sector	Rivers	Lochs/ lakes	Transitional	Coastal	Groundwater
Agriculture	✓	✓	✓	✓	✓
Forestry	✓	✓			
Sea and coastal water transport				✓	
Electricity production (acidification)	✓	✓			
Sewage disposal activities	✓	✓	✓	✓	
Total length/area	2,333 km	18 km^2	322 km^2	177 km^2	6,069 km^2

Table 5 - Significant point source pollution issues in the Solway Tweed RBD

Key sector	Rivers	Lochs/ lakes	Transitional	Coastal	Groundwater
Sewage disposal activities	✓	✓	✓	✓	
Manufacturing			✓	✓	
Electricity generation			✓		
Total length/area	660 km	8 km^2	325 km^2	42 km^2	

5.4.5 Diffuse pollution from agriculture

Diffuse agricultural pollution arises from land use activities such as livestock grazing, cultivation of land to grow crops and from farm steading run-off. Such activities can give rise to a loss of potential pollutants which individually may not have an impact but together, at the scale of a river catchment, can impact on water quality. Much of this pollution is unintentional and good agricultural practice can help address the problem.

These types of pollutants can be transported to waters by a number of recognised routes. As a result, both land use and run-off management are important in the control of diffuse agricultural pollution.

Diffuse agricultural pollution can have the following types of impact:

- Losses of nutrients from fertilisers, animal manures and slurries applied to land result in the proliferation of plant growth. This can smother rivers and estuaries while, in lochs/lakes and coastal waters, enhanced growth of plankton reduces light penetration and affects oxygen levels.
- Organic matter from animal manures, slurries and effluent from livestock feeds (e.g. silage) depletes oxygen in rivers. This, together with toxic components such as ammonia, reduces the number of animals and plants which can thrive in our rivers.
- Soil erosion can have a direct physical impact by smothering gravels in rivers and lochs/lakes (important to fish and other organisms) and reducing light penetration in estuaries and coastal waters. It is also important in the transport of other pollutants such as pesticides, nutrients and faecal pathogens attached to soil particles.
- Livestock manures and slurries, and access to watercourses by cattle and sheep can lead to significant losses of micro-organisms from faecal matter to bathing and shellfish waters. This can affect the amenity value of the water environment and can pose a risk to human health.
- Losses of pesticides and veterinary medicines (including sheep dip) during handling, use and washdown can cause severe impacts to plants and animals in rivers and can affect the quality of drinking water.

- Nutrients from fertilisers, animal manure and slurries can enter groundwater, affecting the quality of water available for public water supply abstraction, and affecting rivers and other water bodies that are groundwater fed.

Diffuse pollution from agriculture is a significant issue for groundwater, rivers, lochs/lakes, transitional and coastal waters. It is estimated that over 80% of those water bodies at risk of failing to meet the WFD's environmental objectives by 2015 are affected by diffuse pollution from agriculture.

5.4.6 Diffuse pollution from forestry

Environmental impacts from forestry are generally much lower than those from other land uses. This is partly a result of the lower levels of inputs, cultivation practices and associated losses from forestry but also because of the effective application of codes of good practice which have transformed forestry practice over the past 15 years. However, problems associated to diffuse pollution remain and includes:

- nutrient input to highly sensitive upland lochs/lakes;
- pollution incidents associated with spillages, erosion of roads or the felling and planting of forests.

Characterisation data indicate that more than a quarter of the rivers and lochs/lakes in the RBD at risk of failing to meet the WFD's environmental objectives by 2015 are affected by diffuse pollution related to forestry activities. A particular concern is around upland lochs/lakes having high ecological status and which are very vulnerable to increased nutrient inputs associated with inappropriate re-forestation or felling. Typically this type of lake/loch is very rare across Europe and they therefore have important biodiversity value internationally.

5.4.7 Diffuse pollution from acidification

Acidification of rivers and lochs/lakes occurs where high levels of acidifying pollutants (such as oxides of sulphur and nitrogen from the burning of fossil fuels and ammonia from intensive livestock rearing) are deposited from the atmosphere in catchments overlying hard, slow weathering rocks where soils are thin and provide little buffering capacity. Upland areas receive higher levels of deposition because of higher rainfall and ground level cloud. Sulphur and nitrogen dioxides may be transported considerable distances in the atmosphere and may cross national boundaries before being deposited. Hence emissions of these gases from the rest of the UK and continental Europe contribute to acidification in the Solway Tweed RBD. Although acidification is a potential problem across large upland area, evidence of damage to freshwaters in the Solway Tweed RBD is most prevalent in south west Scotland, particularly Galloway. Parts of the upper Eden catchment are also at risk.

As well as an increase in acidity (lower pH), acidification results in increased concentrations of sulphate, nitrate and labile aluminium in freshwaters and reduced acid-neutralising capacity (ANC). Environmental effects of acidification include:

- The increase in acidity and toxic forms of aluminium cause a decline in the biodiversity of rivers and lochs/lakes. Fish, invertebrates and aquatic flora may all be affected, as may some birds associated with freshwaters (e.g. dippers). The effects of acidification may be mitigated to some extent by naturally occurring organic acids; highly coloured, peaty waters may therefore show less damage.
- Fish such as Atlantic salmon and brown trout are particularly sensitive to acidification and, in some waters; populations of these fish may be lost completely. Early signs of acidification damage include a progressive ageing of the trout population due to poor survival of the more sensitive eggs and fry.

- Aquatic invertebrate communities become impoverished as the more sensitive species are eliminated.
- Many species of molluscs, mayflies, some caddis flies and the freshwater shrimp *Gammarus* are acid-sensitive.
- Many species of diatoms (microscopic algae that live in lochs/lakes or on river beds) are also acid-sensitive. Diatom remains that are preserved in loch sediments provide a useful means of tracking acidification over time.

5.4.8 Diffuse and point source pollution from sewage disposal activities

In urban areas sewers are constructed to collect sewage effluent and transport it to sewage treatment works. In most areas sewers allow the overflow of diluted sewage effluent during heavy rain in order to protect homes and properties from flooding as well as protecting the treatment works from flooding.

In rural areas many houses, small hotels and industrial sites are not connected to a public sewage treatment works and treatment is typically provided by septic tanks or small treatment works, many in private ownership. Much of the pollution from these is diffuse in nature and consequently more difficult to address.

Sewage effluent can be highly polluting as it contains:

- organic matter that removes oxygen from the water, potentially killing fish and other aquatic wildlife;
- nutrients which can allow algae to grow to nuisance levels, smothering fish habitats and requiring expensive treatment of water abstracted for industrial or domestic use;
- toxic substances from industry, household chemicals and run-off from roads which includes hazardous substances that do not degrade and accumulate within fish and marine mammals;
- sewage litter which can affect the amenity value of rivers and beaches;
- bacteria and viruses which can cause health problems with water contact sports such as swimming, canoeing or fishing.

Septic tanks have the potential to input nutrients to the water environment including nitrates, phosphates and ammonia. Discharges from septic tanks can also lead to increased BOD, reducing oxygen availability for flora and fauna in the water body.

Characterisation data indicate that more than a third of the rivers and lochs/lakes at risk of failing to meet the Water Framework Directive's environmental objectives by 2015 in the Solway Tweed river basin district are affected by point source or diffuse source pollution from sewage disposal activities.

5.4.9 Point source pollution from manufacturing

Point source pollution refers to a discrete and identifiable source of pollutants that is affecting the environment. Point source pollution relating to manufacturing can be varied and depends on the process at the factories involved.

Typical pollutants include heavy metals, chlorinated solvents, nitrates, phosphates, organic compounds and pesticides. Although controlled through permitting, discharges can adversely affect water quality especially during times of low flow, when there is less dilution. Addition of any of these pollutants to the environment will impact on the local ecosystem around the discharges, but can also have a wider impact.
Only one water body in the Solway Tweed RBD at risk of failing to meet good ecological status is affected by point source pollution from manufacturing.

5.5 Abstraction

5.5.1 Abstraction of too much water is a potential problem for both groundwater and surface water resources. If we remove too much water for drinking or commercial activities, we reduce the system's ability to dilute and cope with pollution. In extreme cases, river beds can dry up or salt water can be drawn into groundwater.

5.5.2 The significant issues relating to abstraction and flow regulation pressures on the water environment in the Solway Tweed RBD are listed in Table 6 and described in more detail in Sections 5.5.3 to 5.5.5.

Table 6 - Significant abstraction and flow regulation issues in the Solway Tweed RBD

Key sector	Rivers	Lochs/ lakes	Transitional	Coastal	Groundwater
Collection, purification and distribution of water	✓	✓			
Agriculture	✓				
Electricity generation		✓			
Total length/area	438 km	20 km^2			

5.5.3 Abstraction and flow regulation pressures and morphological change from water supply

The amount of water in rivers and lochs/lakes varies naturally. Environmental impacts result when the ecology cannot tolerate the changes in water levels and/or flows. In the most extreme cases, abstraction can result in the drying up of rivers or exacerbation of the impacts associated with dry rivers.

The potential negative environmental impacts from water supply are associated with:

- the abstraction of water;
- the construction and operation of dams and associated engineering.

If not controlled, these may result in:

- low levels of water caused by direct abstraction from rivers (particularly during the summer) leading to damage to the ecology of rivers and their associated wetlands;
- low groundwater levels caused by abstraction leading to the drying out of small tributaries and wetlands and the reduction in river baseflows;
- variable water levels in lochs/lakes and reservoirs leading to regular drying out of the shoreline, preventing the growth of plants and spawning of fish;
- barriers to fish migration caused by dams;
- barriers to sediment movement downstream of dams, reducing the availability of gravels needed by spawning fish;
- loss of bankside river habitat for fish and invertebrates.

Approximately a quarter of at risk water bodies are affected by abstraction for water supply in the Solway Tweed RBD.

5.5.4 Abstraction pressures from agriculture

Abstraction, particularly for irrigation, is typically required during dry weather when river flows are low. Consequently abstraction for irrigation exacerbates naturally occurring low flows. A typical irrigation pump can extract 1,200 m^3 of water over a period of 24 hours. This is equivalent to the average water used by 6,000 people. In addition, the distribution of crops means that farmers frequently have to rely on small burns and

tributaries which, during periods of low flows, may not have sufficient water to support the abstraction without causing potential environmental impact.

Abstraction from agriculture is typically at its highest levels between May and August. This has the following environmental impacts:

- Reduced summer flows occasionally lead to stranding of fish and drying out of wetlands.
- It increases the vulnerability of fish and other freshwater life due to raised temperatures in pools isolated by low flows.
- It exacerbates the effects of pollution due to limited dilution.
- Small dams across rivers are sometimes built to assist in the abstraction of water and can, if poorly constructed, impede the migration of fish.
- The effects of agricultural abstraction often combine with the effects of diffuse pollution to seriously damage the ecology of small burns.
- Changes to 'flow variability' are important to many river species including salmon, trout and pearl mussels.

5.5.5 Abstraction and flow regulation pressures from hydropower

The potential negative environmental impacts of hydropower are associated with the abstraction of water and the construction and operation of dams. If these activities are not controlled, they can result in:

- very low flows in rivers, which may periodically be virtually dry;
- highly variable flows below generating stations, resulting in bare banks and potential stranding of fish;
- highly variable water levels in reservoirs leading to regular drying out of the shoreline, preventing the growth of plants and spawning of fish;
- barriers to fish migration caused by dams and death of fish entering unscreened turbines;
- barriers to sediment movement downstream of dams, reducing the availability of gravels needed by spawning fish;
- loss of bankside river habitat for fish and invertebrates.

However, some hydropower reservoirs and rivers affected by hydro schemes create the conditions that have led to sites being designated under conservation legislation. For example, some reservoirs are operated to maintain constant reservoir water levels when black throated divers are nesting. In future it may be possible to deliberately create specific types of habitat below new hydropower sites.

In addition, some naturally inaccessible rivers were opened up to migrating salmon and sea trout as part of the mitigation measures for some hydro schemes and many reservoirs are used for angling (especially for brown trout). Hydropower developments often occur where there are waterfalls or rapids, and so coincide with the type of river used by canoeists and for rafting.

5.6 Morphology

5.6.1 The morphological alterations (physical modifications) that have been made to our waters often result from engineering works carried out so that we can make use of our waters or lands. These activities can directly remove habitat, indirectly change flow or alter levels of sediments in our waters. Examples include:

- drainage of lands for development, agriculture or forestry;
- construction of flood defences or weirs to control river water levels;
- damming of lochs/lakes providing storage for power generation or water supply;
- port developments or construction of coastal defences to prevent flooding or erosion.

5.6.2 The significant issues relating to the morphology of the water environment in the Solway Tweed RBD are listed in Table 7 and described in more detail in Sections 5.6.3 to 5.6.4.

Table 7- Significant morphology issues in the Solway Tweed RBD

Key sector	Rivers	Lochs/ lakes	Transitional	Coastal	Groundwater
Agriculture	✓				
Forestry	✓				
Water supply	✓	✓			
Total length/area	1,574km	13 km^2			

5.6.3 Morphological change from agriculture

Rivers are naturally dynamic; they flood adjacent lands, erode their banks and bed, and move sediment around. These natural processes help create a healthy river (or loch/lake) environment that will support a range of important flora and fauna.

Morphology describes the size, form and character of a river or loch/lake. Under natural conditions, rivers will create a shape, size and character that reflect the balance between local conditions and conditions within the wider catchment. Some agricultural activities (e.g. riverbank engineering) can affect this natural balance and result in morphological change. This can lead to a loss of important habitats, changes to rates of erosion or sediment deposition and, potentially, an increased risk of flooding elsewhere in the catchment.

The activities associated with agriculture can result in the following types of environmental impact.

- Grazing and trampling of river banks by cattle can lead to loss of bankside habitats and vegetation, increased inputs of fine sediments and increased risk of bank erosion.
- The loss of habitat for fish spawning, invertebrates and aquatic plants may lead to increased risk of bank and bed erosion from sediment removal.
- The construction of embankments for flood defence can lead to the loss of floodplain wetlands and associated biodiversity. The presence of structures can also result in a loss of in-channel habitat due to increased erosion during floods affecting fish, invertebrates and aquatic plants. Flood risk downstream may also be increased.
- The loss of bankside vegetation as a result of bank protection work often increases the risk of bank erosion downstream, resulting in loss of in-channel habitat supporting fish, invertebrates and aquatic plants.
- Channel straightening can result in a loss of in-channel habitats and significant changes to erosion and sediment deposition in the surrounding channel.
- The removal of riparian vegetation can lead to increased inputs of fine sediments, increased risk of bank erosion, loss of bankside habitats and elevated water temperatures.

The permanency of engineering structures means that many of these impacts are likely to be cumulative and long lasting.

River engineering in agricultural areas can have direct economic consequences for other land owners. Where engineering has substantially altered the natural character of a river, there may be unplanned impacts that must be addressed by upstream or downstream land owners. In severe cases, these impacts can result in a requirement for continued and costly maintenance works, including sediment management and erosion control.

In some areas of the country, land drainage and river engineering have contributed to increased flood risk. These impacts are typically restricted to areas where works are undertaken in an ad-hoc manner without full consideration of the flooding processes and other works within the catchment.

5.6.4 Morphological change from forestry

The impact of forestry upon the physical structure of rivers is a historical problem caused by certain forestry practices over the past 60 years. This impact is now largely avoided by the application of good environmental practice.

Damage to the physical structure of rivers by forestry is associated with the following practices.

- Dense planting of coniferous trees up to the bank of rivers creates deep shading that prevents the growth of riparian vegetation which protects the river bank from erosion. The resulting erosion can result in shallow open rivers with little shelter for fish and low biodiversity.
- On steep hillsides, poorly sited culverts constructed as part of forestry road crossings can prevent the migration of fish upstream reducing the areas available for spawning.
- Inappropriate land drainage can increase the rate of run-off from hillsides. The result can be higher peak flows, and the scouring and erosion of river gravels and banks.
- Harvesting can result in direct damage to rivers by machinery crossing, or operating too close to river banks.

5.7 Invasive non-native species

5.7.1 Our water environment also faces other threats such as Invasive non-native species. These are non-native plants or animals which compete with, and over-run, our natural aquatic plants and animals.

5.7.2 The significant issues relating to Invasive non-native species in the water environment in the Solway Tweed RBD are listed in Table 8 and described in more detail in Section 5.7.3.

Table 8 - Significant Invasive non-native species issues in the Solway Tweed RBD

Key sector	Rivers	Lochs/ lakes	Transitional	Coastal	Groundwater
Recreational, sporting and cultural	✓	✓			
Total length/area (km/km^2)	26 km	7 km^2			

5.7.3 Invasive non-native species from recreational, sporting and cultural activities

Invasive non-native species have been divided by the UK Technical Advisory Group on the Water Framework Directive (UKTAG) for the purposes of its risk assessment into three categories of impact – high, low, and unknown. To make the task of assessing risk to the water environment manageable, work has concentrated on ten high impact species:

- Australian swamp stonecrop (*Crassula helmsii*);
- Chinese mitten crab (*Eriocheir sinensis*).
- common cord-grass (*Spartina anglica*);
- floating pennywort (*Hydrocotyle ranunculoides*);
- Japanese weed (*Sargassum muticum*);

- North American signal crayfish (*Pacifastacus leniusculus*);
- parrot's feather (*Myriophyllum aquaticum*);
- slipper limpet (*Crepidula fornicata*);
- water fern (*Azolla filiculoides*);
- zebra mussel (*Dreissena polymorpha*);

These species were selected because:

- their impact is known to be severe;
- information on them is usually available for the water bodies in which they occur.

Scottish Natural Heritage (SNH) and Natural England identified records of known locations of these Invasive non-native species in the Solway Tweed RBD. Their presence indicates a risk that the water body will not achieve the WFD default objective of good ecological status. The analysis was not a comprehensive assessment of all Invasive non-native species but indicates the potential extent of the problem in the District.

The following four Invasive non-native species identified by UKTAG as posing a risk to water ecosystems are present in the Solway Tweed RBD.

- North American signal crayfish, *Pacifastacus leniusculus,* are present in several catchments. It has an impact on the fish abundance and age structure, as one of its main food sources are fish eggs and larvae. It also burrows into banks, releasing silt and causing possible slumping of banks.

- Japanese weed, *Sargassum muticum,* is a brown seaweed and impacts through smothering existing marine communities. It also has a potential economic impact as these communities may include shellfish beds. It was first recorded in Loch Ryan.

- Common cord-grass, *Spartina anglica,* is found along the Solway coast where it grows on mudflats and the adjacent merse, changing the habitats to a monoculture and reducing the area of open mud available to estuarine birds. It also tends to change the pattern of accretion of silt.

- Australian swamp stonecrop, *Crassula helmsii,* is a highly invasive water plant which can form dense mats, completely out-competing native water plants and creating a poorer habitat for native invertebrates and fish. It is also extremely difficult to eradicate once established.

In addition, large stands of Japanese knotweed (*Fallopia japonica*) and Himalayan balsam (*Impatiens gladulifera)* are present along river banks. This can result in the structure and condition of riparian zones no longer corresponding to the requirements of the WFD high status morphological condition. Japanese knotweed on the Solway shoreline out-competes the native flora and creates an erosion risk during winter months. However, their presence does not necessarily indicate that a water body will fail to achieve good ecological status.

SECTION 6 - AIR

6.1 The Air Quality Strategy for England, Scotland, Wales and Northern Ireland currently sets air quality standards and objectives that have been introduced to protect the most sensitive members of society. Its main objective is to ensure that everyone is able to enjoy an acceptable level of air quality in public places. This level should pose no significant risk to human health or quality of life, and carry no unacceptable social or economic costs.

6.2 All local authority areas within the district, with the exception of parts of Carlisle, meet all the required standards. In Carlisle, two Air Quality Management Areas (AQMA) have been declared, which cover the A7 from Carlisle city centre to the M6 and a small area close to the city centre. These have been declared due to pollutants (Nitrogen Dioxide) from traffic. Outside these small areas, air quality across the district is generally excellent. Pockets of poorer air quality do occur in some of the other urban centres and along major roads and motorways, but no further AQMAs have been declared.

6.3 Given the very good air quality across the area and the very limited influence that the Solway Tweed RBMP will have upon emissions to air, it is assumed that there will be no significant environmental effects on this SEA receptor and it is, therefore, intended to be scoped out of the assessment. There may however be impacts on the water environment resulting from air pollution – e.g. acidification – these issues will be addressed via the water objective.

SECTION 7 - CLIMATIC FACTORS

7.1 Climate change is a cross-cutting issue which may affect a wide range of environmental conditions and have significant implications for the district's social, economic and environmental assets. The UK Climate Change Programme was published in 2006. This sets out a range of actions which the UK should take both to reduce its contribution to climate change but also to adapt to the effects of climate change which may manifest themselves in the Solway Tweed RBD. Scenario based predictions of possible future climate change in the UK have been made by the UK Climate Impacts Programme (UKCIP) and details are available at www.ukcip.org.uk/climate_change/by_location.asp.

7.2 Climate change will affect all aspects of the water environment but it is still uncertain what the impacts will be and where they will occur. For example, increased rainfall may dilute the pollutants present in water bodies but will also flush a greater concentration of compounds into receiving waters, such as run off of nitrates or cause more frequent sewer overflows, both resulting in deteriorating water quality. The WFD allows for temporary deterioration in the status of water bodies if this arises from exceptional circumstances such as extreme floods and prolonged droughts, but less severe weather changes will also impact indirectly on the water environment. Changes in land-use and water consumption because of climate change are expected, and these may prove to be a significant factor in achieving the overall objective of good status.

7.3 The possible consequences of climate change are drier summers and wetter winters with more severe rainfall events. Of particular significance to the Solway Tweed RBMP and the area it covers is the potential for climate change to have the following effects:

- increases in coastal flooding caused by sea level rises with homes and businesses at risk;
- resultant loss of coastal wetlands;
- changes to the volume and timing of river flows, with associated variable dilution for discharges into water bodies;
- resultant increase in flood risk from river systems;
- changes to groundwater recharge rates;
- potential for drought in certain parts with possible limitation to abstraction practices, although this is less likely in the Solway Tweed compared to other (southern) parts of the UK; and
- soil erosion and landslides, with associated implications for water quality.

7.4 The anticipation is that in the present century the district's climate will become wetter and stormier and that sea levels will rise. An increase in flood risk will be damaging to the district's economy and society. Economic assets thought to be especially vulnerable include transport links, residential properties, public services related to water supply and treatment and commercial premises.

7.5 In Scotland, the primary responsibility for safeguarding and insuring land or property against natural hazards such as flooding lies with land owners. Local Authorities also have a duty to assess and maintain watercourses which are in a condition likely to cause flooding and powers to promote flood prevention schemes for non-agricultural land. Local authorities, government agencies and central government are also responsible for flood warnings and grant-aiding flood protection schemes. In England the situation varies slightly in that the Environment Agency has significant responsibility for flood risk management. Under the Water Resources Act 1991 the Agency has powers to maintain and improve main rivers to ensure the efficient passage of flood flow and to manage water levels where this is in line with current practice. The Environment Agency's flood risk management work also includes the development and delivery of flood risk maps, Catchment Flood Management Plans, Public Awareness Campaigns, the flood warning service and the National Flood and Coastal Defence Database.

7.6 Climate Change in the Solway Tweed RBD - predicted impacts and their relevance to water

7.6.1 Temperatures may rise by up to 4°C[8] by the end of the century, with consequences including milder and wetter winters, hotter and drier summers, more extreme weather events and rising sea levels.

7.6.2 *Climate Change Scenarios for the United Kingdom: The UKCIP02 Scientific Report* presents four climate change scenarios. UKCIP02 predicts a number of impacts that may occur in the UK by 2080. The key findings of this work suggest:

- 1.5 to 2°C warmer in winter; up to 3.5°C warmer in summer; and possibly 4°C warmer in autumn. Summers will suffer some significant heat waves.
- Milder temperatures in winter will result in wetter conditions, with extremes of rainfall leading to serious flooding events.
- Precipitation will increase during the winter season. Conversely, summer rainfall will be around 40% less, particularly in the south and east of Scotland.
- Daily winter rainfall will increase by at least 20% for storms that normally occur only once every two years.
- Summer cloud cover will decrease by 10%, with a slight increase in winter cloud cover.
- Daily average wind speed is not likely to change significantly, although the two year daily mean average wind speed could be up to 4% higher. If this increase applies to storm gusts, considerably more damage to infrastructure will be inevitable.
- Snowfall will decrease by over 90%.
- Sea level will rise by approximately 60 cm around the coastline and storm surges could be up to 0.7 m higher, resulting in higher risks of coastal flooding.
- Sea surface temperature will be 1°C to 2.5°C warmer; the greatest increase being off South East Scotland.
- The frequency of high impact weather events will increase with rising average global temperature

7.2.3 Flooding - It is likely that with increased average rainfall, increased rainfall intensity and prolonged periods of rain, that more frequent and more severe river flooding will occur. In addition, with higher sea levels and increased wave height, it is predicted that coastal flooding will become both more frequent and more severe. Flooding can have very significant effects on property, businesses and agriculture and can be a risk to life.

7.2.4 Droughts – Long term predictions are for an increased likelihood of summer droughts. While the observed impacts (in Scotland) have not borne this prediction out, if realised, this could result in river water quality problems (caused by lack of flow), limitations on abstraction of water (particularly for agricultural use) and even possible problems with water supply.

7.2.5 Water quality – Increased flood events and the potential for summer time droughts may result in water quality issues that need to be addressed. For example, reduced river flows during drought periods will provide less dilution for aquatic discharges which may increase pollution risk. Reduced river flows may also affect abstraction for drinking water or for commercial use. Conversely, increased flooding may increase run off of

[8] Climate Change Scenarios for the United Kingdom: The UKCIP02 Scientific Report.

pollutants e.g. from agricultural land into waterbodies and which may affect their status e.g. run off impacting on bathing water quality.

7.2.6 The Marine Environment – It is predicted that sea levels will rise, that there may be increased wave heights (particularly during storms) and that sea temperatures will rise. While the consequences of these are difficult to predict, it is possible that greater coastal erosion will result from higher sea levels and wave heights. This in turn may lead to land and habitat loss. In the marine environment, increased sea temperature may result in changes to the distribution and abundance of marine biodiversity. This may result in the increase of some species and the decrease or even loss of others (with warmer water species replacing colder water species). This may in turn affect other species – e.g. the recent poor breeding of seabirds[9]. Changes in marine species may also affect economic activities such as commercial fisheries.

7.2.7 Aquatic Biodiversity - Climate change predictions for the UK suggest that as the environment changes, biodiversity will be significantly affected. It is still not exactly clear how biodiversity in the area will be affected or how species will adapt to climate change, but it is suggested that there will be the potential for:

- Changes in the abundance and distribution of species.
- Changes in the length of growing and breeding seasons.
- Higher temperatures to be less favourable for native species, while new species may appear. New species may compete with native species for food and habitat.
- High intensity rainfall and flooding to cause destruction to river habitat.
- Increased erosion resulting in loss of habitat.
- Disruption to food chain with potential catastrophic loss of species (e.g. island breeding sea bird populations).

[9] SNIFFER (2006) A Handbook of Climate Trends Across Scotland.

SECTION 8 - SOIL

8.1 Due to its diverse geology and climate, the UK possesses a wide variety of different soil types. Similarly, because of the strongly maritime climate with cool temperatures and rocks which are generally resistant to weathering and base cation deficient, Scottish and Northern English soils are in general more organic, more leached and wetter than those of most other European countries. The area contains greater proportions of podzols (23.7% of the land area), peat soils (histosols, 22.5%) and gleys (20.6%) than Europe as a whole. The Southern Uplands are dominated by peaty soils (peat, peaty gleys and peaty podzols) especially in the west.

8.2 The land use in the Solway Tweed RBD can be seen in Map 3. Agricultural land cover remains the dominant land use activity. Approximate half of the English part of the RBD is classified agricultural grade 1-3, whereas the majority of the Scottish part is classified as grade 5, with some grade 3 on the eastern side. This predominantly agricultural use gives rise to a number of environmental issues, particularly for water quality. These were detailed in Section 5.

8.3 Soil erosion occurs principally by the action of water and wind, and can become a problem when effects are enhanced through poor management, particularly on exposed, damaged and unstable soils. Examples include coastal erosion and mass erosion by landslides and debris flow. Once soil particles are eroded, they can be carried overland and may enter streams and rivers causing the silting up of watercourses, harm to fish, damage to structures such as bridges and the pollution of watercourses with excess nutrients or harmful chemicals, such as pesticides and metals. Erosion of peat soil also exposes the peat to drying and oxidation which reduces soil carbon stocks and releases gases that contribute to climate change.

8.4 Erosion is often triggered by heavy rain falling onto exposed and unstable soil, though the action of wind is important in areas with lighter soils. Other contributing factors include slope steepness and instability, soil texture and structure as well as damage caused by grazing livestock and human trampling

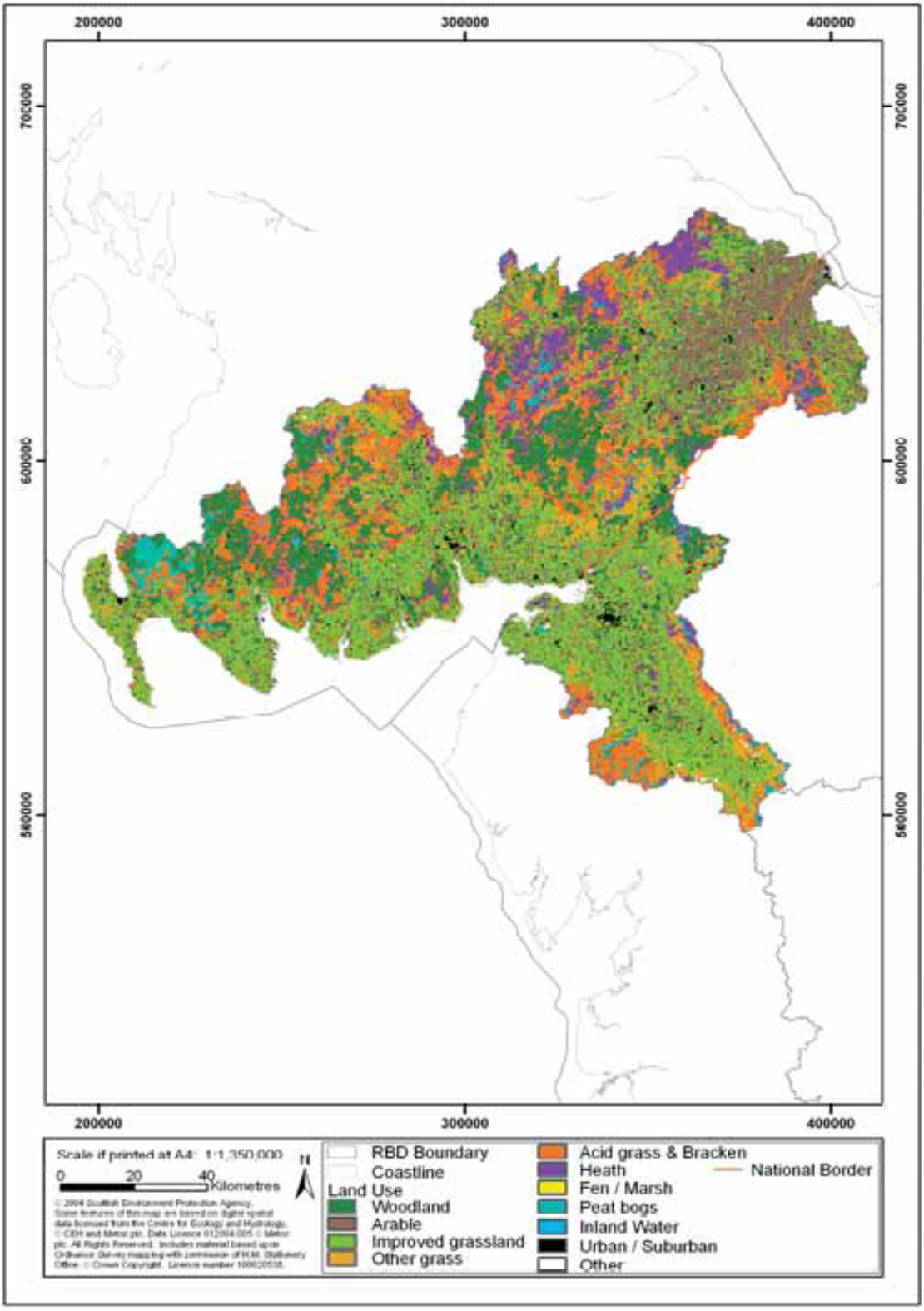
8.5 There are 18 designated Nitrate Vulnerable Zones (NVZ) in the RBD. 16 are in England, the majority lying within the Eden Valley in the west, with only a small area located within the North Northumbria Coastal Plain of the Tweed and 2 in Scotland (Lower Nithsdale NVZ in the west and the Edinburgh, East Lothian and Borders NVZ in the east).

8.6 There are two Environmentally Sensitive Areas, which offer incentives to encourage farmers to adopt agricultural practices which would safeguard and enhance parts of the country of particularly high landscape, wildlife or historic value – The Pennine Dales form a group of sites on border with Humber and NW RBDs.

8.7 There are three Catchment Sensitive Farming Delivery Areas in the RBD: the River Waver and Biglands Bog; the River Eden and Tributaries and the English Tweed Catchment Rivers including Lindisfarne. Within these farmers are encouraged to manage their land in a way that is sensitive to the ecological health of the water environment, largely through voluntary initiatives.

8.8 Approximately half of the western and half of the eastern areas are designated Less Favoured Areas. The majority of the western half of Scottish part of the RBD is designated as ‘Severely Disadvantaged’ Less Favoured Area. This designation also covers a large part of the Tweed catchment, except for the areas adjacent to the coast.

Map 3 – Land Use in the Solway Tweed RBD



SECTION 9 - CULTURAL HERITAGE

9.1 The area has a rich cultural heritage which is demonstrated by the number of buildings and sites which have been afforded protection (Map 4). Table 9 shows the number of Listed Buildings and Scheduled Ancient Monuments in the area.

Table 9 – Listed Buildings and Ancient Monuments in the Solway Tweed RBD

Listed Buildings	*Scheduled Ancient Monuments*
9,603*	***2,530*** **

Sources: www.historic-scotland.gov.uk (search for Scottish LBs and SAMs), English Heritage and www.cumbria.gov.uk.

** Note – Figures are for the whole of Dumfries and Galloway and Scottish Borders and for Eden and Carlisle District Councils.*
*** Note – Figures are for the whole of Dumfries and Galloway and Scottish Borders and for the whole of Cumbria.*

9.2 Certain historic buildings, which are of special architectural or historic interest, can be designated as Listed Buildings and receive special treatment under Planning Acts. A procedure known as listed building consent is designed to retain their particular character, while enabling them to remain useful and valuable. In England this process is managed by English Heritage, in Scotland by Historic Scotland. Listed buildings protect the best of our architectural heritage. When a building is listed it is recognised as of special architectural or historical interest or both, and its details become part of a public record. The building is immediately protected by law, and any changes to it must first receive listed building consent.

9.3 Scheduled Ancient Monuments are designated under the Ancient Monuments and Archaeological Areas Act 1979 and represent sites of national importance and are afforded legal protection. Certain works to scheduled ancient monuments requires Scheduled Monument Consent before they can be undertaken.

9.4 World Heritage Sites - The UNESCO World Heritage Convention drawn up in 1972 was ratified by the United Kingdom in 1984. The Convention provides for the identification, protection, conservation and presentation of cultural and natural sites of outstanding universal value, and requires a World Heritage List to be established under the management of an inter-governmental World Heritage Committee. There is one world heritage site in the Solway Tweed RBD: Frontiers of the Roman Empire, part of which is located at Hadrian's Wall. Further details of the designation are available from the UNESCO World Heritage site: http://whc.unesco.org/en/list/430 .

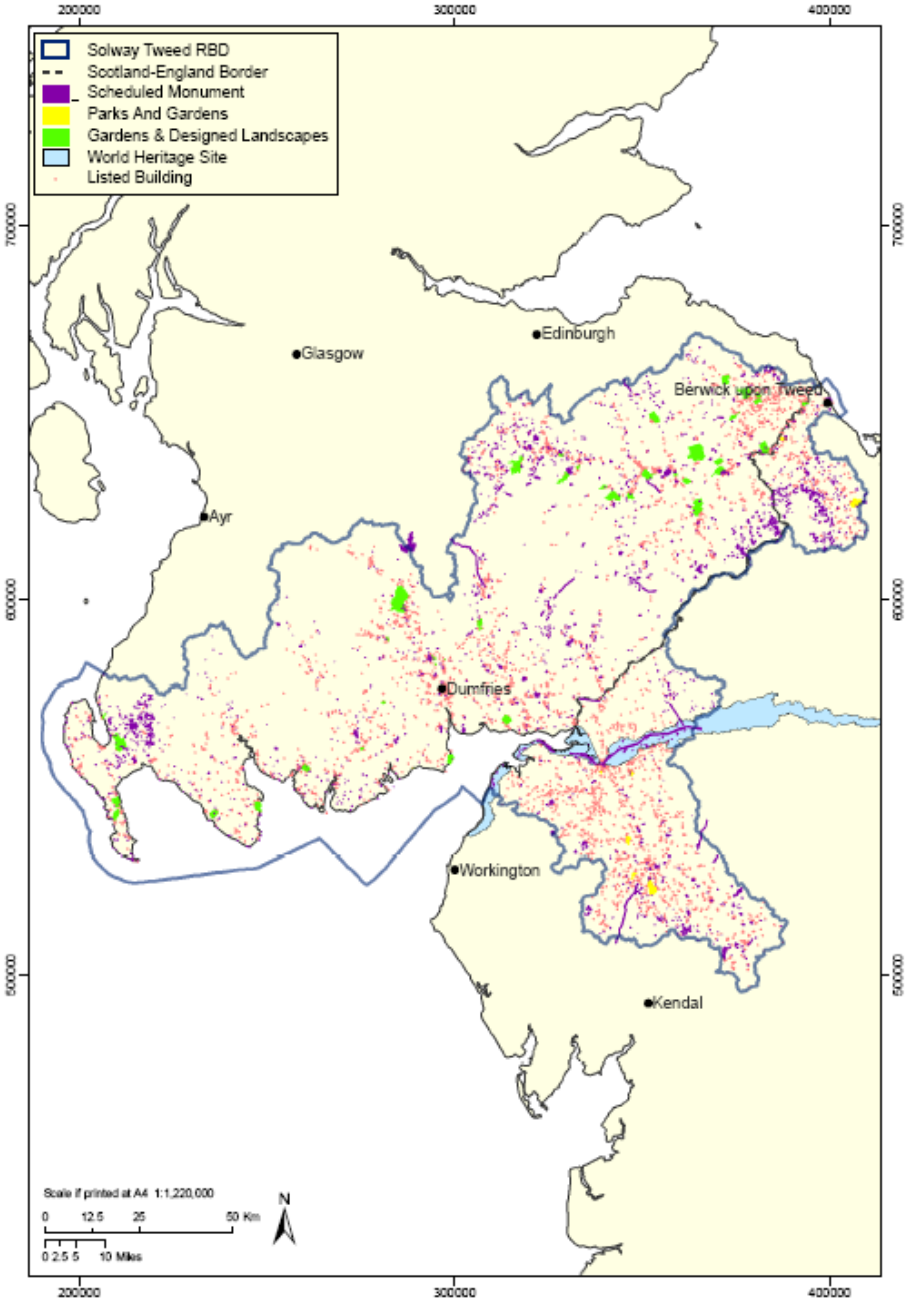
9.6 While it is considered unlikely that the RBMP will result in detrimental effects on cultural heritage it is important to recognise that some features are either located close to waters or are integral to water management activities e.g. weirs, dams and canals. Some historic features that have resulted in the designation of a water body as heavily modified may reduce the ability to restore such water bodies to good status as this would result in the loss of the protected historic feature. It is, therefore, important that protected cultural heritage is fully considered when identifying measures to protect and enhance water bodies.

9.7 Marine Protected Sites – These afford statutory protection for cultural heritage sites in the marine environment e.g. protected wrecks. There are no marine protected sites in the Solway Tweed RBD.

9.8 Wetlands Archaeology - Rivers, lochs and bogs play an important role in archaeology for a number of reasons. Historically, settlement and transport was closely related to river valleys and coastal areas and bogs were an important source of food and fuel. The presence of water on an archaeological site can make an enormous difference in the physical preservation of evidence, as anoxic conditions help preserve organic

materials. A number of archaeological structures reflect the harnessing of water power, such as mills and weirs and the historic importance of fish for food is illustrated by the presence of fish traps and artificial ponds. Management actions taken to protect the natural components of wetlands will have mainly beneficial effects for historic components, however, the effects on the historic environment should be considered when developing management measures.

Map 4 – Designated scheduled monuments, parks and gardens, gardens and designated landscapes, World Heritage Site and listed buildings in the Solway Tweed RBD



SECTION 10 - LANDSCAPE

10.1 The Solway Tweed RBD has a diverse range of landscapes, some of which are afforded protection through a range of designations. Given the rural nature of the district, the landscape is to a certain degree shaped by agricultural land uses, but key landscape features include the mountainous terrain of the southern uplands, the broad, river valley landscapes of productive mixed farmland around the Solway firth, the dramatic coast along both the Solway Firth and the North Sea north of Berwick and the large swathes of semi natural and commercial forestry throughout the area.

10.2 Scottish Natural Heritage and Natural England have carried out National Programmes of Landscape Character Assessment (LCA) which identifies key landscape characteristics for the whole of England, Wales and Scotland. The Solway Tweed RBD is largely covered by four such assessments which identify key landscape features which are briefly summarised below:

10.3 Eden Valley

- Broad, river valley landscapes of productive mixed farmland with local variations in topography, scale and landcover.
- Productive improved pasture and arable land with large farms in the lower lying areas.
- Less intensively managed rolling or hilly pasture and lowland heath, intersected by numerous gills, in the foothills of the North Pennines.
- Sandstone hills with woodland and lowland heath vegetation.
- Numerous small basin mires among drumlins.
- Large broadleaved and coniferous estate/farm woodlands and areas of ancient semi-natural woodland. Mature hedgerows, hedgerow trees, small copses and shelterbelts contribute to the well wooded character.
- Settlements have strong distinctive character. Red sandstone is the dominant building material and a unifying feature. Limestone is found on the margins of the area.
- Intricate network of narrow minor roads with tall hedgerows and walls.
- Red sandstone features such as walls and gateposts.
- Important transport corridor for the Settle-Carlisle railway line, M6 motorway, A66 trunk road and west coast mainline railway.

10.4 Solway Basin

- Raised beaches, dunes, pebble beaches, and sandy shores along the Irish Sea coast.
- Estuarine intertidal mudflats and salt marshes, with wintering and migrating waders and wildfowl, on the fringes of the Solway Firth.
- Fragmented areas of relatively intact raised peat bogs, or lowland raised mires, of high nature conservation value.
- Flat to gently undulating lowland plain, intensively managed predominantly for pasture.
- Medium to large fields enclosed by windswept hedgerows and stone-faced hedgebanks.
- Dense network of highly managed rivers, streams and ditches.
- Limited woodland cover.
- Rich historic, cultural and archaeological heritage.
- Victorian coastal resorts, small market towns and villages. Considerable variety of building styles and materials.
- Primary transport routes radiating from Carlisle and rectilinear pattern of minor roads and lanes.

10.5 Dumfries and Galloway

- Regional Character Areas - At the regional level, the Landscape Character Assessment identifies four distinct landscape areas:

- Rhins and Machars - This regional character area makes up the western section of Dumfries and Galloway. It includes principally the Rhins (and Mull of Galloway), the Stranraer lowlands, the Machars peninsula and the Luce moorlands. The area has been extensively modified by glacial deposition and erosion, producing an undulating landscape of relatively low altitude. This is a predominantly pastoral landscape and traditionally the dairy heart of Dumfries and Galloway. Large dairy farms are characteristic features, as are the grazing enclosures and herb rich pastures. The highest areas are towards the north east, where moorland plateaux and mossy basins form in the upper catchments of the area's main rivers: Water of Luce, River Bladnoch and Tarf Water.
- Galloway Uplands - The Galloway Uplands regional character area is centred on the Merrick uplands and is closely defined between the valleys of the Rivers Cree and Dee. The underlying geology is dominated by the granite intrusions of Cairnsmore of Fleet and the Merricks. The area is characterised by its relatively rugged and wild topography. The core area, in particular, is one of Scotland's most significant wild areas. Forestry is also a major feature, dominating many of these upland landscape types. A large proportion of the area is within the Galloway Forest Park and, therefore, forest management for recreation is an important characteristic.
- West Southern Uplands - The West Southern Uplands regional character area constitutes the landscape of uplands and dales that extends eastwards from the valley of the River Dee. The West Southern Uplands are characteristically smooth, conical peaks with extensive foothills and plateaux. Forestry and upland sheep farming are principal land uses, except in the dales where more cattle are grazed, arable crops and grass silage grown within walled and hedged enclosures. This character area differs significantly from the Galloway Uplands in its more uniform topography and absence of rugged landforms. Forestry, although extensive, does not (as yet) have such continuity of cover. The main settlements and lines of communications are in the dales. The presence here of underlying red sandstone is reflected in the building materials and in the red soils of ploughed fields around Moffat and Thornhill .
- Dumfries Coastlands - The Dumfries Coastlands comprise the lower dales and a variety of landscape types centred on Dumfries, but forming a coastal belt between the Southern Uplands and the Solway Firth. Agriculture is an intensive mixture of arable and grazing. Both drystone dykes and hedgerows are features of its landscapes. The influence of designed landscapes is also strong. This is a settled landscape containing the most heavily developed parts of Dumfries and Galloway and a major part of the region's road network. Communications east to west are particularly significant by old and more contemporary roads, inland and following the coast. Trade and communication by sea has been influential in the development of coastal towns and harbours. The coastline itself is dissected by estuaries which afford scenic views of a high order, as reflected in the National Scenic Area designation. The contrast between coastal flats and uplands is an important part of this experience and an essential component of its regional character.

10.6 Scottish Borders

- At the regional level, the Landscape Character Assessment identifies six distinct landscape areas:
- Tweed Lowlands – The lowlands that form the heartland of the River Tweed basin. The dominant land use is arable, the soil supporting a wide range of cropping opportunities alongside livestock rearing. At their margins, the arable lowlands begin to merge with the fringes of the higher ground carrying a distinctive land cover of grassland.
- Lammermuir and Moorfoot Hills – These form the northern arm of the outer crescent of hills which surround the Tweed basin. The plateau tops are wild, open country, characterised by peaty soils, moorland and unimproved grassland. On the better drained slopes of the valley sides, permanent pastures predominate, with scattered major forestry plantations, particularly adjacent to the Tweed valley.
- Central Southern Uplands – This major belt of high ground extends along the main watershed with the Clyde and the Solway, finally merging with the western extremity

of the Cheviot range. This is the heart of the southern uplands. The hills are dominated by heather moor and rough acid grassland and there are extensive coniferous plantations, particularly in the upper Tweed valley and on the gentler plateau further south at upper Teviotdale. Ribbons of improved grassland penetrate into the hills at the valleys of the major rivers.

- Cheviot Hills – These constitute a ridge of high ground up to 600 m high extending along the Scotland England border. The area is characterised by a complex mosaic of heather moorland and acid grassland, while to the west, more gentle landforms are dominated by coniferous planting.
- Midland Valley – In the extreme North West fringes of the Solway Tweed RBD, this area is characterised by moorland with blanket bog on the highest ground. It is also scattered with coniferous plantations. On the low ground, arable and permanent pastures predominate, although most of the lower ground is outside the Solway Tweed RBD.
- Coastal Zone – This extends along the North Sea coast and is exceptional in heritage terms, with important designations. The coastline itself is mostly formed by rugged cliffs carved into the strongly folded sediments. Inland, land cover varies from heather moorland on the highest ground to rolling pastures and arable fields enclosed by dry-stone dykes and hedgerows. Blocks of coniferous woodland are prominent.
- Overall, the area has 30 sites listed in the Gardens and Designed Landscapes Inventory.

10.7 In addition to the above, the following landscape character areas are also present in parts of the RBD. Further information can be found at http://www.landscapecharacter.org.uk

Other Landscape Character Areas
Northumberland Sandstone Hills
Cheviot Fringe
Cheviots
Border Moors and Forests
Cumbria High Fells
North Pennines
Orton Fells
Yorkshire Dales

10.8 National Parks are designated under the National Parks and Access to the Countryside Act 1949 to conserve and enhance natural beauty, wildlife and cultural heritage and promote opportunities for public understanding and enjoyment. The National Parks in the Solway Tweed RBD are the Lake District National Park, Yorkshire Dales National Park and the Northumberland National Park (Map 5).

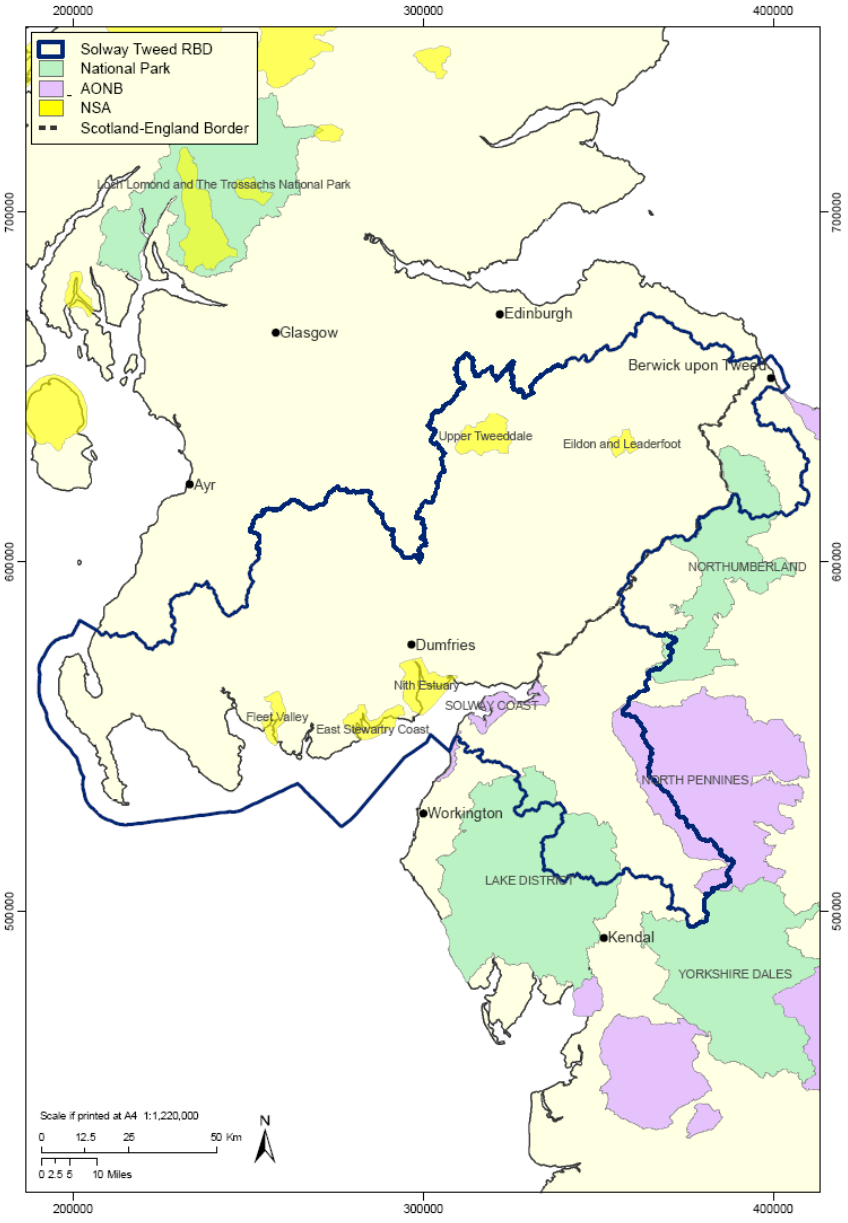
10.9 Areas of Outstanding Natural Beauty (AONBs) are designated under the National Parks and Access to the Countryside Act 1949. They are classified as fine landscapes of great variety in character and extent. The objective of the designation is the conservation of areas of natural beauty, although many fulfil a great recreational purpose. There are three Areas of Outstanding Natural Beauty that intersect with the RBD; they are the Solway Coast, the Northumberland Coast and the North Pennines AONBs (Map 5).

10.10 National Scenic Areas are Scotland's only national landscape designation. They are those areas of land considered of national significance on the basis of their outstanding scenic interest which must be conserved as part of the country's natural heritage. They have been selected for their characteristic features of scenery comprising a mixture of richly diverse landscapes including prominent landforms, coastline, sea and freshwater lochs, rivers, woodlands and moorlands.

Table 10 – Landscape Designations in the Solway Tweed RBD

National Parks	*National Scenic Areas*	*Areas of Outstanding Natural Beauty*
3	*5*	*3*

Map 5 – Designated National Parks and Areas of Outstanding Natural Beauty in the Solway Tweed RBD



SECTION 11 - MATERIAL ASSETS

The following information is largely derived from the 2005 Report "Solway Tweed river basin characterisation: An economic analysis of water use". For further details, the full document is available at http://www.sepa.org.uk/pdf/publications/wfd/Article_5_Solway_Tweed_Economic.pdf

Economic Activities in the Solway Tweed RBD

11.1 **Agriculture and forestry**

There is a significant agricultural sector in the Solway Tweed RBD, employing 7,600 workers. Agriculture and forestry account for almost 12% of gross value added to the economy of the Solway Tweed RBD. Water is essential to the agricultural sector for irrigation, drinking water for livestock, cleaning etc. Irrigation needs are met by precipitation in most parts of the district; however there is significant abstraction for irrigation purposes in the River Till catchment. Water also carries chemicals away from the land and transports them to other water bodies. As discussed in Section 5, agriculture and forestry contribute significantly to diffuse pollution pressures in Solway Tweed RBD.

11.2 Aquaculture and fisheries management

Coastal waters, lochs/lakes and rivers are all used to support fin fish and shellfish farming and depend on unpolluted water. In the Solway Tweed RBD fin fish farming is predominantly the land based production of rainbow and brown trout. Shellfish waters support the harvest of oysters and other species but cultivation of shellfish is currently limited.

Fish stocks are a complex and precious resource which require expert management in order to sustain them. Fisheries management can help to conserve and maintain the diversity of fish which can in turn enhance the contribution that fishing and fisheries make to the economy through maximising yields, and securing and increasing employment in fishing and related businesses.

11.3 **Mining and quarrying**

Mining and quarrying takes place on a relatively small scale, accounting for 0.6% of employment and 0.8% of the gross value added to the Solway Tweed RBD economy, with the majority of this value attributable to quarrying. Water use in the mining sector consists of diverting groundwater and drainage with subsequent consented discharges from settlement tanks.

11.4 **Food processing**

Food processing in Solway Tweed RBD is a diverse industry, although the main economic contribution from the sector is in meat and fish production. The main impacts of the industry on the water environment are through abstraction of water and also from discharges.

11.5 **Manufacture of textiles and leather products**

Production of textiles and leather is a relatively important economic sector in Solway Tweed RBD, accounting for 4.4% of gross value added. The vast majority of this output occurs in the Scottish area of the District. The industry is also important in terms of water use issues, particularly abstraction and point source pollution.

11.6 **Manufacture of wood, pulp and paper products**

Wood, wood products, paper and pulp is an important sector employing around 3,400 people in the District. Any impact the industry has on the water environment is largely related to water abstraction and water use supporting industry processes. Due to the significant commercial forestry plantings in the District, much of which is harvested or due for harvest in the next 10 to 20 years, the use and processing of timber is likely to be a growing sector in the District in future years.

11.7 **Electricity hydro**

Large scale hydropower schemes covering hundreds of square kilometres were created in Scotland in the late 19th century and early 20th centuries. Many of these schemes divert

water across catchments to dams which hold the water until energy generation is required. There are 23 major schemes in Scotland supplied by catchments covering over 8,373 km^2 of mainland Scotland. While most hydro schemes were created in northern Scotland, the 83 MW Galloway scheme (completed in 1936) is in the Solway Tweed RBD. There is likely to be only limited further development of large scale hydro power schemes in the future as the most suitable sites have already been developed.

Further small scale hydropower plants (installed capacity < 2MW) are owned by private companies and individuals, and there is some potential for further development of such schemes. These small scale schemes may remove water from a river, pass it through a turbine and then return it to the same river.

Electricity from these renewable sources is important in supporting renewable energy production targets and in reducing carbon emissions as part of the general approach to tackling climate change.

11.8 **Amenity and recreation**

There are a wide range of recreational and amenity uses of water resources including tourism and water-dependent visitor attractions, water-dependent recreation, non-water-dependent recreation, waterside amenity and navigation. Descriptions of these activities are covered earlier in this Appendix.

11.9 Flooding and flood defences

As noted in Section 7, it is predicted that in the future we will have wetter winters and more extreme weather events. A key area of concern in this respect will be around flooding where flood risk is likely to increase both inland and along low lying coasts. Economic assets thought to be especially vulnerable include transport links, residential properties, public services related to water supply and treatment and commercial premises.

Management of flood risk differs between Scotland and England. In Scotland, the primary responsibility for safeguarding and insuring land or property against natural hazards such as flooding lies with land owners. Local Authorities also have a duty to assess and maintain watercourses which are in a condition likely to cause flooding and to promote flood prevention schemes for non-agricultural land. Local authorities, government agencies and central government are also responsible for flood warnings and grant-aiding flood protection schemes. In addition to these obligations the Water Environment and Water Services Act (Scotland) 2003 passes a duty onto Responsible Authorities in Scotland to promote sustainable flood management in exercising their own duties and functions. Responsible authorities are listed in The Water Environment and Water Services (Scotland) Act 2003 (Designation of Responsible Authorities and Functions) Order 2006[10].

In England DEFRA has overall policy responsibility for flood and coastal erosion risk. DEFRA funds most of the Environment Agency's flood management activities and provides grant aid on a project by project basis to the other flood and coastal defence operating authorities (local authorities and internal drainage boards). DEFRA's new strategy (Making space for water) is taking a holistic approach to management of risk from all forms of flooding (river, coastal, groundwater, surface run-off and sewer) and coastal erosion.

The Environment Agency's role includes the maintenance of some flood defences, where maintenance is in line with current practice, but also works towards managing flood risk. This includes the development and delivery of flood risk maps, Catchment Flood Management Plans, Public Awareness Campaigns, the flood warning service and the National Flood and Coastal Defence Database.

11.10 **Transport Infrastructure**

A number of key England - Scotland transport routes pass through the RBD, including the M6/M74 motorway in the west, the A1 in the east and both the east and west coast rail lines. These are nationally important transport routes. The RBMP is unlikely to have

[10] http://www.opsi.gov.uk/legislation/scotland/acts2003/20030003.htm .

significant effects upon these routes; however some effects on water bodies in the Solway Tweed have been experienced (e.g. run off from the M6 motorway).

APPENDIX C OTHER RELEVANT PLANS AND PROGRAMMES AND ENVIRONMENTAL OBJECTIVES

Set out below is a summary of relevant policies, guidelines, plans and programmes which may influence or be influenced by the Solway Tweed River Basin Management Plan. It covers International, UK National, Scottish National, UK Regional, English Local, Scottish Regional and Local levels of information to ensure all relevant documents have been considered.

Response received from the following consultees:
English Heritage
Natural England
Scottish Natural Heritage
Historic Scotland
ENTEC Report

Plan name	Key policy coverage	Main SEA topics
International		
Water Framework Directive (2000/60/EC)	Establishes a new legal framework for the protection, improvement and sustainable use of surface waters, transitional waters, coastal waters and groundwater across Europe in order to: • prevent deterioration and enhance status of aquatic ecosystems, including groundwater; • promote sustainable water use; • reduce pollution; and • contribute to the mitigation of floods and droughts.	Biodiversity, flora & fauna, Population & Human Health, Water, Climatic Factors.
Convention on Wetlands of International Importance 1971 (as amended)	The Ramsar Convention on Wetlands is an international treaty that provides the framework for national and international co-operation for the conservation and wise use of wetlands and their resources.	Biodiversity, flora & fauna.
Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979)	The convention sets out to: • conserve wild flora and fauna and their natural habitats; • promote co-operation between states; • monitor and control endangered and vulnerable species; and • assist with the provision of assistance concerning legal and scientific issues. The convention led to the creation in 1998 of the Emerald network of Areas of Special Conservation Interest (ASCIs) throughout the territory of the parties to the convention, which operates alongside the European Union's Natura 2000 programme. It also provides for the monitoring and control of endangered species, and the provision of assistance concerning legal and scientific issues.	Biodiversity, flora & fauna.

Plan name	Key policy coverage	Main SEA topics
UN Convention on Biological Diversity (1992)	The Convention on Biological Diversity, known informally as the Biodiversity Convention, is an international treaty that was adopted in Rio de Janeiro in June 1992. The Convention has three main goals: • conservation of biological diversity (or biodiversity); • sustainable use of its components; and • fair and equitable sharing of benefits arising from genetic resources.	Biodiversity, flora & fauna.
Habitats Directive Review of Consents (Environment Agency Programme)	The Habitats Directive has been transposed into English and Welsh law as the Conservation (Natural Habitats & c) Regulations, 1994. Now known as the Habitats Regulations, the Environment Agency is one of the Competent Authorities responsible for implementing them. As people make increasing demands on the environment our wildlife habitats are coming under more and more pressure. The Habitats Directive recognises this and aims to protect the wild plants, animals and habitats that make up our diverse natural environment. This European Directive created a network of protected areas around the European Union of national and international importance. They are called 'Natura 2000' sites. These sites include: • Special Areas of Conservation (SACs); and • Special Protection Areas (SPAs).	Biodiversity, flora & fauna.
UNESCO World Heritage Convention	Convention concerning the protection of the world's Cultural and Natural Heritage.	Cultural Heritage.
European Landscape Convention (2000)	The European Landscape Convention (ELC) is a new instrument devoted exclusively to the protection, management and planning of all landscapes in Europe. It highlights the importance and need for public involvement in the development of landscapes. It encourages a joined up approach through policy and planning in all areas of land-use, development and management, including the recognition of landscape in law. The Convention promotes landscape protection, management and planning, and European co-operation on landscape issues.	Landscape.
Common Agricultural Policy Reform (2003)	The aim of the common agricultural policy (CAP) is to provide farmers with a reasonable standard of living, consumers with quality food at fair prices and to preserve rural heritage. The policy has evolved to meet society's changing needs so that food safety, preservation of the environment, value for money and agriculture as a source of crops to convert to fuel have acquired steadily growing importance.	Cultural Heritage, Soil.

Plan name	Key policy coverage	Main SEA topics
National (UK)		
One Future – Different Paths. UK Shared Framework for Sustainable Development	Sets out common goal for UK sustainable development and a powerful new set of principles to achieve it. Comprises: • a shared understanding of sustainable development; • a common purpose outlining what we are trying to achieve and the guiding principles we all need to follow to achieve it; • our sustainable development priorities for UK action, at home and internationally; and • indicators to monitor the key issues on a UK wide basis.	Overarching.
Securing the Future – UK Government Sustainable Development Strategy	The strategy contains: • new integrated vision building on the 1999 strategy – with stronger international and societal dimensions; • five principles – with a more explicit focus on environmental limits; • four agreed priorities – sustainable consumption and production, climate change, natural resource protection and sustainable communities; and • a new indicator set, which is more outcome focused, with commitments to look at new indicators such as wellbeing.	Overarching.
Catchment Sensitive Farming Programme	Catchment Sensitive Farming is land management that keeps diffuse emissions of pollutants to levels consistent with the ecological sensitivity and uses of rivers, groundwaters and other aquatic habitats, both in the immediate catchment and further downstream. It includes: • appropriately managing the use of fertilisers, manures and pesticides; • promoting good soil structure and rain infiltration to avoid run-off and erosion; • protecting watercourses from faecal contamination, sedimentation and pesticides; • reducing stocking density; managing stock on farms to avoid compaction and poaching of land; and • separating clean and dirty water on farms.	Water, Soil
Water Resource for the future: Regional Water Resources Strategy	This Environment Agency strategy is designed to improve the environment, while allowing enough water for human use. The Environment Agency have considered its contribution to sustainable development, including social progress that considers the needs of all, protection of the environment, making wise use of natural resources, and maintenance of high and stable levels of economic growth and employment. The strategy is flexible and phased, so that unnecessary investment can be avoided while retaining the security of our water supply and improving the water environment.	Overarching.
Fisheries Action Plans	The purpose of Fisheries Actions Plans is twofold; firstly to provide greater local stakeholder involvement in the management and development of freshwater fisheries; and secondly to ensure Environment Agency accountability in delivering its fisheries duties at the local level.	Biodiversity, flora & fauna, Population & Human Health, Water.

Plan name	Key policy coverage	Main SEA topics
Salmon Action Plans	Salmon Action Plans set specific spawning targets for individual rivers, against which stock and fishery performance are assessed. This provides a more objective approach than has previously been applied to salmon management in England and Wales and has been advocated by the North Atlantic Salmon Conservation Organisation (NASCO) to facilitate salmon management in the international context. Each river's Salmon Action Plan contains a range of actions to help achieve spawning targets, such as reducing exploitation, improving habitat and water quality and minimising obstructions to migration. In delivering each Salmon Action Plan the Environment Agency seeks the support of local fisheries and other interests. This collaborative approach is vital to secure the best way forward for the management of salmon rivers.	Biodiversity, flora & fauna, Population & Human Health, Water.
UK Biodiversity Action Plan (BAP) Priority Species	UK BAP Priority Species list is a result of the most comprehensive analysis ever undertaken in the UK; 1,149 species and 65 habitats have been listed as priorities for conservation action under the UK BAP. The Action Plans contain actions and targets for conserving these species.	Biodiversity, flora & fauna.
UK Biodiversity Action Plan (BAP) Priority Habitats	UK BAP Priority Habitat Action Plans provide detailed descriptions for 45 habitats falling within the Broad Habitat classification and detailed actions and targets for conserving these habitats.	Biodiversity, flora & fauna.
Restoring Sustainable Abstraction (Environment Agency programme)	There is evidence to suggest that unsustainable abstraction of groundwater and surface water could be contributing to environmental damage of rivers and wetlands, including sites of national and international conservation importance. The Environment Agency investigates over-abstraction and works with local people to restore sustainable supplies.	Biodiversity, flora & fauna, Population & Human Health, Water
The Countryside and Rights of Way Act 2000	The Countryside and Rights of Way Act 2000 (CRoW Act 2000), which applies to England and Wales only, received Royal Assent on 30 November 2000, with the provisions it contains being brought into force in incremental steps over subsequent years. Containing five Parts and 16 Schedules, the Act provides for public access on foot to certain types of land, amends the law relating to public rights of way, increases protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation, and provides for better management of Areas of Outstanding Natural Beauty (AONB). The Act is compliant with the provisions of the European Convention on Human Rights, requiring consultation where the rights of the individual may be affected by these measures. <u>Access to the Countryside</u> The Act provides a new right of public access on foot to areas of open land comprising mountain, moor, heath, down, and registered common land, and contains provisions for extending the right to coastal land. The Act also provides safeguards which take into account the needs of landowners and occupiers, and of other interests, including wildlife. <u>Public Rights of Way and Road Traffic</u> The Act improves the rights of way legislation by encouraging the creation of new routes and clarifying uncertainties about	Biodiversity, flora & fauna, Landscape.

Plan name	Key policy coverage	Main SEA topics
	existing rights. Of particular relevance to nature conservation, the Act introduces powers enabling the diversion of rights of way to protect SSSIs. Nature Conservation and Wildlife Protection The Act places a duty on Government Departments and the National Assembly for Wales to have regard for the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted in accordance with the Convention on Biological Diversity. Schedule 9 of the Act changes the Wildlife and Countryside Act 1981, amending SSSI notification procedures and provides increased powers for the protection and management of SSSIs. The provisions extend powers for entering into management agreements, place a duty on public bodies to further the conservation and enhancement of SSSIs, and increase penalties on conviction where the provision are breached. Schedule 12 of the Act amends the Wildlife and Countryside Act 1981, strengthening the legal protection for threatened species. The provisions make certain offences 'arrestable', create a new offence of reckless disturbance, confer greater powers to police and wildlife inspectors for entering premises and obtaining wildlife tissue samples for DNA analysis, and enable heavier penalties on conviction of wildlife offences. Areas of Outstanding Natural Beauty The Act clarifies the procedure and purpose of designating AONBs, and consolidates the provisions of previous legislation. It requires local authorities to produce management plans for each AONB, and enables the creation of Conservation Boards to assume responsibility for AONBs, particularly where the land designated crosses several local authority jurisdictions. The Act also requires all relevant authorities to have regard to the purpose of conserving and enhancing the natural beauty of AONBs when performing their functions.	
Tomorrow's Climate, Today's Challenge: UK Climate Change Programme	Sets out policies and priorities for action in the UK and internationally. Sets out measures to reduce emissions targets for every sector of the economy and includes: • a stricter emissions cap for industry; • measures to encourage the uptake of biofuels in petrol; • tighter building regulations; • measures to improve household energy efficiency; • a renewed emphasis on encouraging and enabling the general public, businesses and public authorities to help achieve the Government's targets; and • increased installation of micro-renewables (e.g. solar panels on buildings).	Overarching.

Plan name	Key policy coverage	Main SEA topics
Planning (Listed Buildings and Conservation Areas) Act 1990	An Act to consolidate certain enactments relating to special controls in respect of buildings and areas of special architectural or historic interest with amendments to give effect to recommendations of the Law Commission.	Cultural Heritage.
Ancient Monuments and Archaeological Areas Act 1970	Legislation to protect the archaeological heritage of Great Britain. Section 61(12) defines sites that warrant protection due to their national importance as 'ancient monuments'. These can be either Scheduled Ancient Monuments or "any other monument which in the opinion of the Secretary of State is of public interest by reason of the historic, architectural, traditional, artistic or archaeological interest attaching to it".	Cultural Heritage.
Planning Policy Statement (PPS) 1: Delivering Sustainable Development	PPS 1 sets out the Government's overarching planning policies on the delivery of sustainable development through the planning system. This PPS replaces Planning Policy Guidance Note 1, General Policies and Principles, published in February 1997.	Overarching.
Planning Policy Guidance (PPG) 15: Planning and the Historic Environment	This PPG lays out government policies for the identification and protection of historic buildings, conservation areas, and other elements of the historic environment. It explains the role of the planning system in their protection.	Cultural Heritage.
Planning Policy Guidance (PPG) 16: Archaeology and Planning	This PPG sets out the government's policy on archaeological remains on land and how they should be preserved or recorded both in an urban setting and in the countryside. It gives advice on the handling of archaeological remains and discoveries through the development plan and development control systems, including the weight to be given to them in planning decisions and planning conditions.	Cultural Heritage.
White Paper: Heritage Protection for the 21st Century 8th March 2007	The Draft Bill would reform and unify the terrestrial and marine heritage protection systems in England and Wales, and the marine heritage protection system in Northern Ireland. The Draft Bill would put in place a unified heritage protection system that is easier to understand and use, more efficient, accountable and transparent, and maximises opportunities for public inclusion and involvement. It would remove unhelpful distinctions between different designation regimes (listing, scheduling, registering) to deliver a system that works for the whole historic environment. It would place decision-making powers where they sit most naturally, devolving terrestrial designation decisions on assets in England from the Secretary of State to English Heritage, and unifying consents for works to terrestrial assets which will be administered by Local Authorities in England and in Wales by Local Authorities and Welsh Ministers as appropriate. Supporting sustainable communities by putting the historic environment at the heart of an effective planning system.	Cultural Heritage.

Plan name	Key policy coverage	Main SEA topics
The Historic Environment: A Force for Our Future (DCMS 2001)	As the public's enthusiasm for the past is increasingly evident, not least in the strong media focus on archaeology and history. New, more creative approaches are being used to present historic sites and buildings to visitors and to engage a wider audience. UK heritage continues to be a massive draw for tourists. As such it makes a major contribution to the economy and underpins large numbers of jobs in rural and deprived communities as well as in traditional economic centres. There is, however, much more to be done. Indeed this sector can be regarded as something of a sleeping giant both in cultural and economic terms. We need to find new ways of reaching and empowering excluded individuals and communities. We need to develop new policies to realise economic and educational potential through modernised structures and improved service delivery. Achieving these objectives involves the use of many different policy instruments and the Statement 'The Historic Environment: A Force for Our Future'. This statement looks in detail at all of them: funding; legislation; policy guidance; delivery mechanisms; reprioritisation; and partnership working. It makes proposals to enable organisations to work better together and statutory regimes to operate more effectively. It looks at ways of enhancing the historic environment's contribution to education, both within the school curriculum and through lifelong learning, and of replenishing essential conservation skills. It responds to people's desire to broaden the definition of what should be valued and champions the role of historic assets in the development and regeneration processes and as a focus for community cohesion.	Cultural Heritage.
Heritage/Conservation Strategies	A good heritage conservation strategy incorporates all aspects of a region's heritage - historical, but also natural and cultural.	Cultural Heritage.
Planning Policy Statement (PPS) 7: Sustainable Development in Rural Areas (2004)	Planning Policy Statement 7 (PPS 7) sets out the Government's planning policies for rural areas, including country towns and villages and the wider, largely undeveloped countryside up to the fringes of larger urban areas.	Overarching.
Planning Policy Statement (PPS) 9: Biodiversity and Geological Conservation (2005)	Planning Policy Statement 9 (PPS 9) sets out planning policies on protection of biodiversity and geological conservation through the planning system.	Biodiversity, flora & fauna, Water, Landscape, Soil.

Plan name	Key policy coverage	Main SEA topics
Working with the Grain of Nature: A Biodiversity Strategy for England (2002)	The England Biodiversity Strategy (EBS), Working with the Grain of Nature, was published in 2002. It reflects the shift in biodiversity delivery from UK to the devolved administrations. It complements the UK BAP with a particular emphasis on whole of government policy and securing support for biodiversity from the general public.	Biodiversity, flora & fauna.
Environmental Quality in Spatial Planning – Incorporating the natural, built and historic environment, and rural issues in plans and strategies	Our quality of life, health and well-being rely on clean land, water and air, productive soils, available minerals and water resources, natural coastal and fluvial systems and processes. They also depend on distinctive and inspirational landscapes, a wealth of wildlife, vibrant communities, a healthy, well managed countryside and open spaces accessible for everyone to enjoy. This guidance is produced by the Countryside Agency, English Heritage, English Nature and the Environment Agency to help planning authorities and regional planning bodies in preparing plans and strategies under the new planning system.	Overarching.
Conserving Biodiversity - The UK Approach	This statement has been prepared by the UK Biodiversity Standing Committee on behalf of the UK Biodiversity Partnership. Its purpose is to set out the vision and approach to conserving biodiversity within the UK's devolved framework for anyone with a policy interest in biodiversity conservation.	Biodiversity, flora & fauna.
The Transport Act 1968 (as amended)	The network of canals offers significant potential in terms of regeneration, sustainable development and leisure. There is substantial scope for increasing tourism, providing further maritime links and development of freight traffic. The Transport Act, 1968 (as amended) requires British Waterways to classify canals into three types: • Commercial canals – those principally available for the commercial carriage of freight; • Cruising waterways – those principally available for cruising, fishing and other recreational purposes; and • Remainder canals – those which are not commercial or cruising canals.	Cultural Heritage, Material Assets
Meeting the Energy Challenge – UK White Paper on Energy (2007)	This White Paper, published on 23 May 2007, sets out the Government's international and domestic energy strategy to respond to changing circumstances and addresses the long term energy challenges we face. Four energy policy goals are specified: • To cut CO_2 emissions by some 60% by about 2050, with real progress by 2020; • To maintain the reliability of energy supplies; • To promote competitive markets in the UK and beyond; and • To ensure that every home is adequately and affordably heated.	Climatic Factors.

Plan name	Key policy coverage	Main SEA topics
National (Scotland)		
Choosing Our Future: Scotland's Sustainable Development Strategy	Sets out action to be taken in Scotland to turn shared priorities outlined in the UK Framework for Sustainable Development into action.	Overarching.
National Planning Policy Guideline 13 – Coastal Planning	• Sets out how planning can contribute to achieving sustainable development and also maintaining and enhancing biodiversity on the coast. • Highlights the need to distinguish between policies for developed, undeveloped and isolated coasts. • Indicates how planning authorities should respond to the risk of erosion and flooding in the coastal zone. • Outlines policy guidance for developments which may require a coastal location. • Identifies the action to be taken by planning authorities in their development plans and in development control decisions.	Overarching.
National Planning Policy Guideline 14 – Planning and Natural Heritage	• Sets out national planning policy considerations in relation to Scotland's natural heritage. • Summarises the main statutory obligations in relation to the conservation of natural heritage. • Explains, as part of a wider framework for conservation and development, how natural heritage objectives should be reflected in development plans. • Describes the role of the planning system in safeguarding sites of national and international importance. • Provides guidance on the approach to be adopted in relation to local and non-statutory designations. • Draws attention to the importance of safeguarding and enhancing natural heritage beyond the confines of designated areas.	Overarching.
National Planning Policy Guideline 18 – Planning and the Historic Environment	• Outlines national policy on the historic environment which local authorities should consider in formulating and assessing development proposals. • Explains how the protection of the historic environment and the promotion of opportunities for change can contribute to sustainable development. • Identifies a range of planning actions designed to achieve conservation objectives, including implications for development plans and development control.	Cultural Heritage.
National Planning Framework	• Guidance for the spatial development of Scotland to 2025, updated every 4 years. • Regarded as a key element in modernising and reforming the planning system, and a material consideration in framing planning policy and making decisions on planning applications and appeals. Analyses the underlying trends in Scotland's territorial development, the key drivers of change and the challenges faced.	Overarching.

Plan name	Key policy coverage	Main SEA topics
	• Describes Scotland in 2004, identifies key issues and drivers of change, sets out a vision to 2025, and identifies priorities and opportunities for different parts of the country. • The importance of place is highlighted and priorities for investment in strategic infrastructure are identified.	
Scottish Planning Policy 7 – Planning and Flooding	Scottish planning guidance to prevent further development which would have a significant probability of being affected by flooding or which would increase the probability of flooding elsewhere.	Water, Climate Factors, Material Assets.
Scottish Planning Policy 15 – Rural Development	Sets out the approach, key messages and objectives that should underpin planning policies and decisions affecting rural areas.	Landscape.
Scottish Rural Development Programme	The three themes proposed are: Theme 1 Underpinning performance and quality in the agriculture, food processing and forestry sectors. Theme 2 Enhancing rural landscapes and natural heritage. Theme 3 Promoting a more diverse rural economy and thriving rural communities. The following cross-cutting principles guide the approach to the strategy and the Programme itself: • an integrated approach to policy delivery that combines economic, social and environmental actions; • flexibility to meet diversity and local distinctiveness across rural Scotland; and • promotion of sustainability, resilience and vigour in the rural economy, communities and natural heritage.	Overarching.
A Forward Strategy for Scottish Agriculture – Next Steps	The aim is a prosperous and sustainable farming industry which benefits all the people of Scotland. It should be: • focused on producing food and other products for the market; • a major driver in sustaining rural development, helping rural communities prosper; • a leading player in the protection and enhancement of the environment; • a major contributor to key objectives on animal health and welfare and human health and well-being; • keen to embrace change and market opportunities; and • Rural Scotland is not a single entity and the type of farming varies from place to place. The role of agriculture and the range of economic, social and environmental benefits expected from it will differ from one part of Scotland to another.	Biodiversity, Flora & Fauna, Soil.

Plan name	Key policy coverage	Main SEA topics
Scottish Forestry Strategy	The Scottish Forestry Strategy is the Scottish Executive's framework for taking forestry forward. It sets out a vision of a forestry sector that is: • diverse and strong; • in tune with the environment; • employing many people in a wide range of enterprises; and • providing the many other services and benefits that people need, now and for the future. The strategy focuses on the following key themes: • climate change; • timber; • biodiversity; • community development; • environmental quality; • access and health; and • business development	Biodiversity, flora & fauna, Population & Human Health, Water, Climatic Factors, Soil.
Scottish Water - Strategic Asset Capacity and Development Plan	Scottish Water has published a Strategic Asset Capacity and Development Plan which aims to let local authorities and developers see "at a glance" what capacity currently exists at a particular location in Scotland. It is intended to use this information to decide whether work will have to be carried out by Scottish Water to increase capacity at treatment works to enable a particular development to go ahead.	Biodiversity, Flora & Fauna, Population & Human Health, Water, Material Assets.

Plan name	Key policy coverage	Main SEA topics
Scottish Water - Quality and Standards 3	Scottish Water is required to deliver specified outcomes which will improve drinking water quality, clean up the environment, provide for new development, and improve customer service. These requirements, which Scottish Water must deliver within the funds determined by the Water Industry Commission for Scotland, are set out in a Ministerial Direction to Scottish Water. In the period 2006 to 2010 these objectives will deliver the following outcomes through a combination of improved operating practices and £2.45bn of investment: • improve the quality of drinking water for 1.5 million people and provide better disinfection control for 4 million people; • contribute to improving water quality for over 200 km of water bodies; • provide new strategic capacity to enable new development and allow our communities to grow; • address odour nuisance at 14 waste water treatment works; • remove 456 properties currently as risk from internal sewer flooding; • remove 2,250 properties currently subject to low water pressure (less than 1 bar pressure); • deliver a net reduction of 425 properties affected by unplanned interruptions in water supply (non trunk mains); • Improved customer services from 177 (2006) to 250 (2010) as measured by the Overall Performance Assessment (OPA) methodology; and • reduce leakage in line with WICS targets.	Biodiversity, Flora & Fauna, Population & Human Health, Water, Material Assets.
Scottish Water - Water Resource Plan	Scottish Water is committed to producing a water resource plan in liaison with SEPA to ensure protection of water resources. Includes supply-demand appraisal.	Biodiversity, Flora & Fauna, Population & Human Health, Water, Material Assets.
Scottish Water – Sewage Sludge Strategy	Strategy for safe disposal of sewage sludge following ban on burning over half of Scotland's sludge in dried pellet form at Longannet Power Station.	Biodiversity, Flora & Fauna, Population & Human Health, Climate Factors, Water, Material Assets.

Plan name	Key policy coverage	Main SEA topics
Scottish Biodiversity Strategy "Scotland's Biodiversity: It's in Your Hands"	To conserve biodiversity for the health, enjoyment and well-being of the people of Scotland now and in the future. Objectives: 1. Species & Habitats: To halt the loss of biodiversity and continue to reverse previous losses through targeted action for species and habitats. 2. People: To increase awareness, understanding and enjoyment of biodiversity, and engage many more people in conservation and enhancement. 3. Landscapes & Ecosystems: To restore and enhance biodiversity in all our urban, rural and marine environments through better planning, design and practice. 4. Integration & Co-ordination: To develop an effective management framework that ensures biodiversity is taken into account in all decision making. 5. Knowledge: To ensure that the best new and existing knowledge on biodiversity is available to all policy makers and practitioners.	Biodiversity, flora & fauna, Water, Landscape, Soil.
Changing Our Ways: Scotland's Climate Change Programme	Updates Scottish Climate Change Programme published in 2000. Sets out steps being taken in Scotland now and in the near future to tackle climate change. Key elements are: • presenting longer term view; • quantifying Scotland's equitable contribution in carbon terms; • setting a Scottish target; • demonstrating achievements so far; • setting out new actions and future directions across main sectors; and • responding to the inevitable consequences of climate change.	Overarching.
Passed to the Future – Historic Scotland's policy for the Sustainable Management of the Historic Environment	This statement outlines Historic Scotland's commitment to ensuring that the historic environment is used and managed in a sustainable way. This means managing the impact of both natural processes and human activity in such a way that our environment retains its historic character. This is a continuous and dynamic process, requiring a delicate balance between conservation and change. Inevitably there will also be loss through natural erosion and through planned actions. The aim is to ensure that the characteristics of the historic environment are understood and taken account of so that its overall quality is enhanced rather than diminished.	Cultural Heritage.
Scottish Historic Environment Policy series	Scottish Historic Environment Policy (SHEP) is a new series of policy documents that both sets out Scottish Ministers' vision and strategic policies for the wider historic environment and provides greater policy direction for Historic Scotland.	Cultural Heritage.

Plan name	Key policy coverage	Main SEA topics
	The series includes: • SHEP 1 - Scotland's Historic Environment; • SHEP 2 – Scheduling; • SHEP 3 - Gardens and Designed Landscapes; • SHEP 4 - Scheduled Monument Consent; and • SHEP 5 - Properties in the Care of Scottish Ministers.	
Nature Conservation Act (Scotland) 2004	The Act places duties on public bodies in relation to the conservation of biodiversity, increases protection for Sites of Special Scientific Interest (SSSI), amends legislation on Nature Conservation Orders, provides for Land Management Orders for SSSIs and associated land, strengthens wildlife enforcement legislation, and requires the preparation of a Scottish Fossil Code. The Act is compliant with the provisions of the European Convention on Human Rights, requiring consultation where the rights of the individual may be affected by these measures.	Biodiversity, flora & fauna, Water.
The Water Environment and Water Services (Scotland) Act 2003	This act is the enabling legislation for the Water Framework Directive. It identifies SEPA as the competent authority. The Directive requires Member States to put in place systems for managing their water environments, based on natural river basin districts and underpinned by extensive environmental monitoring and scientific investigation, called 'river basin management'. It further requires Member States to take account of the need to recover the costs of water services as a way of encouraging the sustainable use of water resources.	Overarching.
Scottish Planning Policy (SPP) 11: Physical Activity and Open Space	Sets out national planning policy for sports and recreation in urban and rural settings and for provision and protection of open space within and on the edges of settlements. It introduces national minimum standards for open space in new developments.	Population & Human Health.
Land Reform (Scotland) Act 2003	The Land Reform (Scotland) Act 2003 establishes statutory rights of access to land and inland water for outdoor recreation.	Population & Human Health, Landscape.
Scottish Natural Heritage policy statement on Landscape	This guidance provides updated advice on Landscape Character Assessment, an important tool for all those involved in influencing the landscape. The guidance reflects how methods and techniques for Landscape Character Assessment have developed in recent years and builds upon interim guidance which was the subject of consultation in 1999. This new guidance has been prepared for England and Scotland, although aspects may have relevance to other parts of the British Isles. This document sets out the full scope of activity potentially involved in a Landscape Character Assessment, but it may well be possible to undertake a more modest exercise that will still inform decision-making.	Landscape.

Plan name	Key policy coverage	Main SEA topics
National Planning Policy Guidance (NPPG) 5: Archaeology and Planning	This National Planning Policy Guideline (NPPG) sets out the Government's planning policy on how archaeological remains and discoveries should be handled under the development plan and development control systems, including the weight to be given to them in planning decisions and the use of planning conditions. The guidance is aimed at planning authorities in Scotland, and is also of direct relevance to developers, owners, statutory undertakers, government departments, conservation organisations and others whose actions have a direct physical impact upon the natural or built environment.	Cultural Heritage.
National Planning Policy Guidance (NPPG) 18: Planning and the Historic Environment.	This National Planning Policy Guideline (NPPG) deals primarily with listed buildings, conservation areas, world heritage sites, historic gardens, designed landscapes and their settings. It complements NPPG 5 Archaeology and Planning, which sets out the role of the planning system in protecting ancient monuments and archaeological sites and landscapes.	Cultural Heritage.
Scottish Planning Policy SPP 23: Planning and Historic Environment: Consultative Draft	SPP 23 supersedes and consolidates NPPG 18 and NPPG 5. It sets out the national planning policy for the historic environment with a view to its protection, conservation and enhancement and indicates how the planning system will contribute to the delivery of the SHEP series.	Cultural Heritage.
Scottish Historic Environment Policy: Consultation: The Marine Historic Environment	Sets out proposals for the marine historic environment building on many of the principles defined in Historic Scotland Operational Policy Paper HP6 Conserving the Underwater Heritage [1999].	Cultural Heritage.
Scottish Government: Scottish Government Economic Strategy, 2007	This Government Economic Strategy sets out how the Scottish Government will support businesses and individuals. The strategy aims to: • focus the Government and public services on creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth; and • build a dynamic and growing economy that will provide prosperity and opportunities for all, while ensuring that future generations can enjoy a better quality of life.	Overarching.
Scottish Climate Change Bill (Draft), 2008	There are four key reasons why the Scottish Government is bringing forward legislation to create mandatory climate change targets: • to drive decisions in government and business; • to create and enable new means of reducing emissions and adapting to climate change; • to play our part in global action on climate change; and • to provide a strong example to other countries showing what can be done.	Overarching.
Scottish Executive: A Strategic Framework for Scottish	Scotland aims to have a sustainable, diverse, competitive and economically viable aquaculture industry, of which its people can be justifiably proud. It will deliver high quality, healthy food to consumers at home and abroad, and social and economic benefits to communities, particularly in rural and remote areas.	Biodiversity, flora & fauna, Water.

Plan name	Key policy coverage	Main SEA topics
Aquaculture, 2003	It will operate responsibly, working within the carrying capacity of the environment, both locally and nationally and throughout its supply chain.	
Scottish Planning Policy (SPP) 6 - Renewable Energy, 2007	Scottish Ministers have set a target of generating 40% (since quantified as 6 GW) of Scotland's electricity from renewable sources by 2020 and confirmed that this target should not be regarded as a cap. The importance of using clean and sustainable energy from renewable sources will continue to increase as a result of global imperatives to tackle climate change and the need to ensure secure and diverse energy supplies. The Scottish Ministers will continue to support the full range of renewable generation technologies, including micro-renewables, to enable Scotland to realise its considerable renewable energy potential. The planning framework set out in this SPP will help ensure the delivery of renewable energy targets as well as supporting the development of a viable renewables industry in Scotland. The development of existing and new technologies has the potential to provide significant opportunities for Scotland to enhance its manufacturing capacity with associated economic and employment benefits. Such benefits, which may accrue locally or nationally, should be fully taken into account when considering planning applications.	Climatic Factors.
Scottish Water Delivery Plan 2006 to 2010	Scottish Water is committed to delivering the Ministerial Directions and other regulatory targets for the 2006 to 2010 period within the financial limits set out in the Final Determination. This delivery plan shows how they plan to do this and to out-perform the determination. The Ministerial Directions are reproduced at Appendix X4 and include: • addressing development constraints; • improving service by making; - abatements to malodour from waste water treatment works - reductions in the number of properties at risk of internal flooding - from overloaded sewers - reductions in the number of properties that suffer unplanned interruptions to their water supply - reductions in the number of properties that receive water at inadequate pressure; • improving drinking water quality; • reducing the effects on the environment of abstracting water from lochs and rivers; • reducing the effects of discharges to the water environment; and • maintaining service standards for customers.	Overarching.

Plan name	Key policy coverage	Main SEA topics
Scottish Government's Strategic Framework for Scottish Freshwater Fisheries Consultation, 2007	This document sets out a shared vision for freshwater fisheries in Scotland – 'Scotland will have sustainably managed freshwater fish and fisheries resources that provide significant economic and social benefits for its people.' It also explains how the Freshwater Fisheries Forum Steering Group worked together to create this Strategic Framework, taking into account the interests and needs of all stakeholders, and having regard to the four pillars of sustainability: environmental, economic, social and stewardship.	Biodiversity, flora & fauna, Water.
Scotland's National Transport Strategy	This strategy maps out the long-term future for transport in Scotland for the first time. It seeks a transport system fit for the 21st century, one that meets the needs of everyone in Scotland, providing them with integrated, modern, reliable and environmentally efficient transport choices. Alongside that vision, the strategy outlines the long-term objectives, priorities and plans to make it a reality.	Overarching.
England Regional/Local		
The North West Plan: Submitted Draft Regional Spatial Strategy for the North West of England (Jan. 2006)	The Planning and Compulsory Purchase Act 2004 strengthened the importance of regional planning by introducing Regional Spatial Strategies which bring together economic, social and environmental issues linked to planning in a coherent framework. The Regional Spatial Strategy (RSS) for North West England provides a framework for the physical development of the region over the next fifteen to twenty years. Incorporating the Regional Transport Strategy (RTS), it addresses the scale and distribution of future housing development and sets priorities for dealing with environmental issues, transport, infrastructure, economic, development, agriculture, minerals and the treatment and disposal of waste.	Overarching.
VIEW: Shaping the North East. Regional Spatial Strategy for the North East Submission Draft	Currently in draft form, the Regional Spatial Strategy (RSS) for the North East sets out the broad spatial development strategy for the North East region for the period of 2004 to 2021. When adopted, the RSS will set out the region's housing provision and the priorities in economic development, retail growth, transport investment, the environment, minerals and waste treatment and disposal. Some policies have an end date of 2021, but the overall vision, strategy, and general policies will guide development over a longer timescale.	Overarching.

Plan name	Key policy coverage	Main SEA topics
North West Regional Housing Strategy (2005)	The aims of the North West Regional Housing Strategy are to: • set out a comprehensive view of the strategic housing issues facing the North West; • establish foundations for the forthcoming Regional Spatial and Regional Economic Strategies to build upon, and which responds to the Northern Way Growth Strategy; • develop and make more explicit spatial and thematic priorities for the region to better direct investment decision making; • gain growing understanding of the housing markets in the North West and their relationship with both economic drivers and social and environmental sustainability; • set long-term objectives for the region against which shorter term priorities for action can be established; and • identify where the Board and its partners can make a demonstrable positive difference.	Population & Human Health, Material Assets.
North West Regional Waste Strategy	The Regional Waste Strategy will contribute to the sustainable development of the North West by encouraging waste management systems that will reduce waste generation, lessen the environmental impacts of waste production, and improve resource efficiency, while at the same time stimulating investment and maximising associated economic opportunities. The link between waste growth and economic development can only be broken through more efficient use of resources and improved waste management.	Biodiversity, flora & fauna, Population & Human Health, Material Assets, Water, Climate Factors, Soil.
North West Regional Transport Strategy (2003)	This strategy supports the vision and objectives of the North West Regional Spatial Strategy by concentrating on the development of better transport links within the region, and between the North West and other parts of the UK, Ireland, mainland Europe and beyond. It aims to do this by significantly improving the quality and provision of public transport and by promoting a more structured approach to managing and selectively improving the region's highway network.	Climate Factors, Population & Human Health, Material Assets.

Plan name	Key policy coverage	Main SEA topics
St Bees Head to River Sark Shoreline Management Plan	The aim of this Shoreline Management Plan (SMP) is to provide a framework for the development of sustainable coastal defence policies for the coastline between St Bees Head and the River Sark on the Scottish Border and to set objectives for the future management of the shoreline. The main objectives of this SMP are to: • agree a preferred approach based on an assessment of the range of Strategic Coastal Defence Options; • outline future requirements for monitoring, management of data and research related to the shoreline; • inform the statutory planning process and related coastal zone planning; • identify opportunities for maintaining and enhancing the natural coastal environment, taking account of any specific targets set by legislation or any locally set targets; and • set out arrangements for continued consultation with interested parties. The key issues addressed in the preparation of this SMP are: • coastal processes; • coastal defences; • land use and the human and built environment; and • the natural environment.	Overarching.
Eden Catchment Flood Management Plan	A Catchment Flood Management Plan (CFMP) is a high level strategic planning tool through which the Environment Agency hopes to work with other key decision makers to explore and define long term sustainable policies for flood risk management. It is an essential plan to enable a strategic, proactive and risk-based approach to flood risk management in the Eden Catchment.	Biodiversity, flora & fauna, Population & Human Health, Water, Climatic Factors, Material Assets.
Vision for the Lake District National Park 2006 to 2030	Working together for a prosperous economy, vibrant communities and world class visitor experiences - and all sustaining the spectacular landscape.	Overarching.
Northumberland National Park Management Plan: 'A Secure Future for the Land of the Far Horizons'	Northumberland National Park Authority will be proactive, innovative and forward-looking, and will work towards a National Park with thriving communities and a sustainable local economy grounded in its special qualities, including a richness of cultural heritage and biodiversity, a true sense of tranquillity and a distinct character associated with a living, working landscape, in which everyone has an opportunity to understand, enjoy and contribute to those special qualities.	Overarching.
Solway Coast Area of Outstanding Natural Beauty (AONB) Management Plan 2004 to 2009	A vision for how the area will look in 2030 is set out that covers the following aspects: • landscape; • natural heritage; • cultural heritage; • communities; • tourism and recreation;	Overarching.

Plan name	Key policy coverage	Main SEA topics
	• transport and access; and • education and information.	
The North Pennines AONB Management Plan 2004 to 2009	The primary aim of the Management Plan is to provide a framework for action for the conservation and enhancement of the North Pennines AONB. The following themes are considered key in achieving this: • landscape and biodiversity; • historic environment; • economic development/rural regeneration; and • land use/development planning.	Overarching.
North West Rural Delivery Framework	Six headline rural priorities for the region have been agreed and are listed below: 1. Maximising the economic potential of the region's rural areas. 2. Supporting sustainable farming and food. 3. Improving access to affordable rural housing. 4. Ensuring fair access to services for rural communities. 5. Empowering rural communities and addressing rural social exclusion. 6. Enhancing the value of our rural environmental inheritance.	Overarching.
The North East Rural Action Plan	The Rural Action Plan is about looking to the future. It sets out a shared vision for the Region's rural areas. It identifies the 10 priority areas for action that will make the most difference over the next 3 to 5 years, and so bring about a lasting revival of the Region's rural economy. 1. The future for land-based businesses. 2. Influencing National and European rural policy. 3. The development of tourism and culture. 4. Building a diversified rural economy. 5. An enabling planning system. 6. Investing in market towns and local service centres. 7. Making the most of information and communication technology. 8. The empowerment of rural communities. 9. Integrated rural transport. 10. New ways of working.	Overarching.
Northumbrian Water - What customers can expect in 2005 to 2010 our delivery plan	A) Investing in improvements, including: • quality improvements; • service improvements; • meeting growing demand; and • finance costs. B) Operating expenditure. C) Maintaining our assets.	Biodiversity, flora and fauna, Population & Human Health, Water, Climate Factors, Material Assets.

Plan name	Key policy coverage	Main SEA topics
United Utilities Draft Statutory Drought Plan	This plan provides a comprehensive statement of the actions that United Utilities will consider implementing during drought conditions to safeguard essential water supplies to its customers and minimise environmental impact. The security and integrity of water supplies is of the utmost importance to its customers.	Biodiversity, flora & fauna, Population & Human Health, Water, Climatic Factors, Material Assets.
United Utilities Water Resources Plan – Planning for the Future	Information not publicly available yet.	Overarching
Eden and Esk Catchment Abstraction Management Plan	This strategy sets out how we will manage water in the Eden and Esk catchments to balance the various demands on the water resource. The water environment in the Eden and Esk catchments has a high ecological value, recognised by the numerous designations found here. It is critical to maintain this high status whilst also supporting other needs in the catchment, such as the strategically important supply of water to Cumbria and other parts of the North West region.	Biodiversity, flora & fauna, Population & Human Health, Water, Climate Factors, Material Assets.
United Utilities Biodiversity Strategy Working for Wildlife	The United Utilities strategy and the accompanying plans set out how the regulated part of United Utilities (Service Delivery), supplying water and electricity services in the northwest of England, will manage and promote the variety of life that occurs on its land or is affected by its operations. This strategy gives an overview of biodiversity in the northwest and how United Utilities affects it. The individual species and habitat plans set out specific actions to help protect biodiversity. The strategy covers the period 2004 to 2006. It will then be reviewed and the targets in the individual plans updated. Progress in implementing the strategy will be reported through the company's Corporate Responsibility Report.	Biodiversity, flora & fauna, Water.
North West Climate Change Action Plan "Rising to the Challenge"	This Action Plan sets out a Vision for the region and outlines the associated outcomes to be achieved by 2020. In order for the region to achieve these outcomes, it must focus on the twin objectives of reducing regional greenhouse gas emissions and adapting to those effects of climate change which are now unavoidable.	Climatic Factors.
United Utilities/RSPB Sustainable Catchment Management Programme	The Sustainable Catchment Management Programme (SCaMP), which has been developed in association with the Royal Society for the Protection of Birds (RSPB), aims to apply an integrated approach to catchment management within two key areas of United Utilities land; Bowland and the Peak District area. This will help to deliver government targets for SSSIs, enhance biodiversity, ensure a sustainable future for the company's agricultural tenants and protect and improve water quality.	Biodiversity, flora & fauna, Water.

Plan name	Key policy coverage	Main SEA topics
Restoring Eden Project – Eden Rivers Trust	The Eden Rivers Trust is a Company limited by guarantee (no. 06460807), registered in England and Wales, and is a Registered Charity (no. 11123588) set up in 1996 with two main aims: • to conserve, protect and improve the River Eden, its tributaries and the flora and fauna in and adjacent to them; and • increase public awareness of the importance of the River Eden and its catchment through education. These aims are met through research, conservation and education projects.	Biodiversity, flora & fauna, Water.
Hadrian's Wall World Heritage Site Management Plan	The management plan sets out the policy framework needed to ensure the appropriate management of the World Heritage Site in the form of overarching principles covering planning and conservation issues access and interpretation and marketing.	Cultural Heritage.
Eden Local Development Framework (Eden District Council)	The Local Development Framework will give developers and local people a clear indication of what is likely to be acceptable development and will be the basis for assessing planning applications. The Eden Local Development Framework will be a portfolio of documents that together will form the spatial plan for Eden District outside of the Lake District National Park.	Overarching.
Lake District National Park Local Development Framework (LDNPA)	The Local Development Framework (LDF) is the equivalent of a 'folder' containing different documents. Collectively these documents deliver the spatial planning strategy for the Lake District National Park. Each document will contain policies to guide where development can take place. These will be used to make decisions about applications for planning permission. Documents will cover different subjects from the overall strategy for the National Park to specific proposals about where housing should be developed. The documents will form the building blocks for the future of the Lake District National Park.	Overarching.
United Utilities Strategic Direction Document	This document is not yet available in the public domain.	N/A
Scotland Regional/Local		
Dee/Ken Catchment Management Plan	The objective of this project is to develop an agreed plan for catchment management to encourage the protection, promotion and enhancement of biodiversity and water resources while balancing economic and social concerns in the Dee/Ken Catchment. The plan should be an evolving document, taking into consideration past practices and future changes.	Overarching.

Plan name	Key policy coverage	Main SEA topics
Nith Catchment Management Plan	The main aim of catchment management planning is to encourage the partnership of key individuals and organisations to work together for the benefit of whole catchments. In order to do this Catchment Management Plans attempt to: • record the state of the catchments including: water quality; the status and extent of habitats and species within the catchment; and key land management activities; • review the main impacts on the water quality of the river; • identify where issues may need to be addressed in different areas of the catchment; and • identify appropriate long-term objectives for the catchment from which beneficial short-, medium- and long-term actions can be developed through partnership working.	Overarching.
Annan Catchment Management Plan	To ensure the sustainable use of resources. Maintain and enhance biodiversity and water quality. The Catchment Management Plan has been written and objectives for the future identified and are being monitored.	Overarching.
Dumfries and Galloway Structure Plan	Provides a strategic framework for land use planning on a regional council wide basis.	Overarching.
Scottish Borders Structure Plan	Provides a strategic framework for land use planning on a regional council wide basis.	Overarching.
Cross Border Regional/Local		
Solway Tweed Regulations	When the Water Framework Directive was transposed into UK legislation, separate provision was made for the Solway Tweed River Basin District because it straddles the English–Scottish border. Under the Solway Tweed Regulations the Environment Agency and SEPA were given a number of new duties and responsibilities around working together to deliver river basin planning in the Solway Tweed River Basin District.	Overarching.
Tweed Catchment Management Plan	Aims and goals of the Tweed Catchment Management Plan are to conserve, enhance and where appropriate restore the total river environment through effective land and resources planning across the Tweed catchment. In achieving this, it will:- • enable actions on the ground, which benefit both the water environment and its users; • engage a wide range of parties from government organisations to local communities, interest groups and landowners; • build a self generating consensus for action; and • harmonise land and water uses within the catchment to an agreed set of common objectives.	Overarching.

APPENDIX D NATIONAL AND REGIONAL ASSESSMENT TABLES

Reference/Baseline

Diffuse Pollution

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	All sectors	Option 1: Baseline - 'do nothing'	Reduce diffuse pollution inputs	1

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect through removal of pollution to water bodies	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Encourage improved energy efficiency?	Negative short-term effect		
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Negative short-term effect	neg.S	Negative short-term effect on the landscape aesthetics, positive short-term effect on the quality of the water body (if considered part of the landscape)
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally this measure will have a positive effect on biodiversity, water and soil, a positive or negative effect on population and human health and climate factors, a negative for landscape and no significant effect on the other SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Agriculture (regulatory)	Option 1: Baseline - 'do nothing'	Regulations, guidelines and standards to reduce pollutant loads to water bodies	2

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Encourage improved energy efficiency?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	Perhaps a minor positive effect
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?	Small positive short-term effect		
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?	No significant effect		
Summary: Generally, this measure is positive for biodiversity, water,climate and soils,a positive and negative for population and human health and not significant for the other SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Agriculture (non-regulatory)	Option 1: Baseline - 'do nothing'	Education, advice & campaign awareness	3

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	?	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	?	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	?	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	?	
		Contribute to the mitigation of floods and droughts?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Encourage improved energy efficiency?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	?	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	?	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	?	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	?	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targeting of awareness raising.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Agriculture (non-regulatory)	Option 1: Baseline - 'do nothing'	Economic incentives for agriculture to reduce diffuse pollution	4
SEA topic	**A. SEA Objective - to what extent will the RBMP...**	**B. Asssessment Criteria - to what extent with the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Encourage improved energy efficiency?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	May be a minor positive effect, but probably not strategically significant
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?	No significant effect		
Summary: Generally, the effects of this measure will be positive for biodiversity,water, climate and soil, negative and positive for population and human health and not significant for the remainder of the SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Forestry (regulatory)	Option 1: Baseline - 'do nothing'	Regulations to reduce diffuse pollution	5
SEA topic	**A. SEA Objective - to what extent will the RBMP...**	**B. Asssessment Criteria - to what extend with the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Encourage improved energy efficiency?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	Perhaps a minor positive effect
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?	Small positive short-term effect		
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?	No significant effect		
Summary: Generally, this measure is positive for biodiversity, water, and soils, positive and negative for population and human health and not significant for the other SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Forestry (non-regulatory)	Option 1: Baseline - 'do nothing'	Economic incentives for forestry to reduce diffuse pollution	6

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Encourage improved energy efficiency?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	May be a minor positive effect, but probably not strategically significant
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Safeguard soil quality, quantity and function?			
		Protect agricultural land?	No significant effect		
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally, the effects of this measure will be positive for biodiversity, water, climate and soil, negative and positive for population and human health and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Forestry (non-regulatory)	Option 1: Baseline - 'do nothing'	Education, advice and campaign awareness	7
SEA topic	**A. SEA Objective - to what extent will the RBMP...**	**B. Asssessment Criteria - to what extent will the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	-	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	-	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	-	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	-	
		Contribute to the mitigation of floods and droughts?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Encourage improved energy efficiency?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	-	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	-	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	-	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	-	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targeting of awareness raising.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Acidification (regulatory)	Option 1: Baseline - 'do nothing'	Controls to reduce the effects of air pollution	8
SEA topic	**A. SEA Objective - to what extent will the RBMP...**	**B. Asssessment Criteria - to what extent will the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?			
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?			
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?			
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?			
		Contribute to the mitigation of floods and droughts?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Encourage improved energy efficiency?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?			
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?			
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?			
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?			
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Not assessed.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Acidification (regulatory)	Option 1: Baseline - 'do nothing'	Regulations to reduce the effects of acidification	9

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Encourage improved energy efficiency?	Positive short-term effect		
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	Perhaps a minor positive effect
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?	Small positive short-term effect		
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?	No significant effect		

Summary: Generally, this measure is positive for biodiversity, water and soils, positive and negative for population and human health and not significant for the other SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Agriculture (non-regulatory)	Option 1: Baseline - 'do nothing'	Emission Trading Scheme	10

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	?	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	?	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	?	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	pos S	Assuming that the ETS will be targeted at reducing greenhouse gas emissions and energy efficiency
		Contribute to the mitigation of floods and droughts?			
		Contribute to reducing greenhouse gas emissions from water management activities?	Postive short-term effect		
		Encourage improved energy efficiency?			
		Address the potential impacts of climate change on biodiversity?	No significant effect		
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	?	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: There is insufficient information to make a judgement on the effects of the ETS on biodiversity, population and human health,water and landscape. No significant effect would be expected on cultural heritage, material assets and soil, while it is likely that this measure will have positive effects on climate factors.

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Acidification (non-regulatory)	Option 1: Baseline - 'do nothing'	Forests and Water Guidance	11

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	?	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	?	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	?	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	?	
		Contribute to the mitigation of floods and droughts?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Encourage improved energy efficiency?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	?	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	?	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	?	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	?	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targeting of awareness raising					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Urban development (regulatory)	Option 1: Baseline - 'do nothing'	GBRs to reduce urban diffuse pollution	12

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effects	pos.S	Effects are generally positive for biodiversity & recreation, but there may be costs for other sectors. The costs & benefits will need to be assessed in the IA. Mitigation could be achieved through a targeted study to assess distribution of costs and benefits and effective disposal of waste
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effects	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	Perhaps a minor positive effect but probably not significant and difficult to measure
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?	Positive short-term effects through treatment in SUDS		
Summary: Generally this measures will have positive effects for biodiversity, water, climate and soil, negative and positive effects on population and human health and no significant effect on cultural heritage, material assests and landscape.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Urban development (non-regulatory)	Option 1: Baseline - 'do nothing'	Campaign awareness and best practice to reduce diffuse pollution from urban development	13

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	-	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	-	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	-	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	-	
		Contribute to the mitigation of floods and droughts?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Encourage improved energy efficiency?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	-	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	-	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	-	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	-	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targetting of awareness raising.

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Sea and Coastal transport (not a SWMI issue)	Option 1: Baseline - 'do nothing'	Reduce diffuse pollution from sea and coastal transport	14

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extend with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Not assessed for the Solway Tweed, as not a SWMI issue	-	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Not assessed for the Solway Tweed, as not a SWMI issue	-	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Not assessed for the Solway Tweed, as not a SWMI issue	-	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Not assessed for the Solway Tweed, as not a SWMI issue	-	
		Contribute to the mitigation of floods and droughts?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Encourage improved energy efficiency?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Not assessed for the Solway Tweed, as not a SWMI issue	-	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Not assessed for the Solway Tweed, as not a SWMI issue	-	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Not assessed for the Solway Tweed, as not a SWMI issue	-	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Not assessed for the Solway Tweed, as not a SWMI issue	-	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Not assessed for the Solway Tweed as not a SWMI issue.

Point Source Pollution

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	All sectors	Option 1: Baseline - 'do nothing'	Measures to reduce pollution load and increase treatment	1
SEA topic	**A. SEA Objective - to what extent will the RBMP....**	**B. Assessment Criteria - to what extent will the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Effects are generally positive for biodiversity & recreation, but there may be costs for other sectors. The costs & benefits will need to be assessed in the IA. Mitigation could be achieved through a targeted study to assess distribution of costs and benefits and effective disposal of waste
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative effect for different sectors depending on externalities		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	Perhaps minor local improvements to landscapes
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTW's & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally the measures have short-term positive effects on biodiversity and water, negative and positive effects for population & human health and are not significant for the remainder of the SEA topics					

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	All sectors	Option 1: Baseline - 'do nothing'	Remediation of sediment and water	2

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect at the site where the sediment or water is treated, potentially negative short-term effect depending on how the spoil or water is disposed of	neg./pos.	Mitigation to ensure that waste/water is properly disposed of
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect at the site where the sediment or water is treated, potentially negative short-term effect depending on how the spoil or water is disposed of	neg./pos.	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?	No significant effect	neg./pos.	The effects of this measure will be positive for biodiversity and may help improve conveyance thereby mitigating the impacts of droughts and floods and promoting sustainable flood management. However, there are potential negative effects in terms of greenhouse gas emissions and increased energy use depending on the mechanisms used to treat the sediment/water. Mitigation will therefore require a cost benefit analysis and consideration of how to deal with waste
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Contribute to the mitigation of floods and droughts?			
		Promote sustainable flood management?			
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative effects depending on the mechanisms used		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally this measure will have positive short-term effects on water, positive and negative effects for biodiversity, population and human health and climate change, but will have no significant effects on the remainder of the SEA topics

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	All sectors	Option 1: Baseline - 'do nothing'	Measures to regulate flow to 'naturalise' the flow regime	3
SEA topic	**A. SEA Objective - to what extent will the RBMP....**	**B. Assessment Criteria - to what extent will the RBMP....**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect at site where existing discharge is naturalised, potentially a negative short-term effect if as a result of the naturalisation a new source/existing source has to be found to meet the demand	neg./pos.	Mitigation would require study of impact on where discharge is transferred
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect at site where existing discharge is naturalised, potentially a negative short-term effect if as a result of the naturalisation a new source/existing source has to be found to meet the demand	neg./pos.	Mitigation would require study of impact on where discharge is transferred
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect at site where existing discharge is naturalised, potentially a negative short-term effect if as a result of the naturalisation a new source/existing source has to be found to meet the demand	neg./pos.	Mitigation would require study of impact on where discharge is transferred
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect at site where existing discharge is naturalised, potentially a negative short-term effect if as a result of the naturalisation a new source/existing source has to be found to meet the demand	neg./pos.	Mitigation would require study of impact on where the discharge is relocated.
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Address the potential impacts of climate change on biodiversity?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally this measure will have positive short-term effects on climate factors, and positive and negative effects on biodiversity, population & human health and water, but will have no significant effects on the remainder of the SEA topics					

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Sewage disposal (regulatory)	Option 1: Baseline - 'do nothing'	Measures to reduce impacts from point pollution associated with domestic sewage and industrial effluent	4

SEA topic	A. SEA Objective - to what extent will the RBMP…	B. Assessment Criteria - to what extent will the RBMP…	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effects	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effects	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effects	pos.S	Measures to deal with the disposal of waste will need to be undertaken
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	The effects of this measure will be positive for biodiversity. However, there are potential negative effects in terms of greenhouse gas emissions and increased energy use depending on the mechanisms\treatments applied. Mitigation will therefore require a cost benefit analysis and consideration of how to deal with waste
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effects		
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative short-term effects on different sectors depending on exact nature of measure		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally this measure will have short-term positive effects on biodiversity, water and material assets and negative and positive effects on population & human health and climate factors and no significant effect on the other SEA topics					

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Sewage disposal (non-regulatory)	Option 1: Baseline - 'do nothing'	Campaign awareness and best practice to reduce diffuse pollution from sewage disposal	5

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	?	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	?	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	?	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	?	
		Contribute to the mitigation of floods and droughts?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Encourage improved energy efficiency?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	?	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	?	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	?	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	?	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targeting of awareness raising

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Aquaculture/fish farming (regulatory)	Option 1: Baseline - 'do nothing'	CAR aimed at regulating the effects of aquaculture	6

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	The effects of this measure will be positive for biodiversity. However, there are potential negative effects in terms of greenhouse gas emissions and increased energy use depending on the mechanisms/treatments applied. Mitigation will therefore require a cost benefit analysis and consideration of how to deal with waste
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effects		
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative short-term effects on different sectors depending on exact nature of measure		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropnate, enhance or restore landscape character and quality?			
		Protect and, where appropnate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity and water, positive & negative for population & human health and climate factors and not significant for the remainder of the SEA topics

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Aquaculture/fish farming (non-regulatory)	Option 1: Baseline - 'do nothing'	Strategic planning and other measures to reduce point source pollution from aquaculture	7

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	-	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	-	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	-	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	-	
		Contribute to the mitigation of floods and droughts?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Encourage improved energy efficiency?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	-	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	-	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	-	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	-	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targeting of awareness raising					

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Manufacturing (regulatory)	Option 1: Baseline - 'do nothing'	Regulations and standards to reduce point source pollution from manufacturing	8

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	The effects of this measure will be positive for biodiversity. However, there are potential negative effects in terms of greenhouse gas emissions and increased energy use depending on the mechanisms/treatments applied. Mitigation will therefore require a cost benefit analysis and consideration of how to deal with waste
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Encourage improved energy efficiency?	Positive or negative effect depending on the nature of the measure/treatment		
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	Perhaps a minor positive effect on soils through removal of polluting substances from treatment sludge
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity and water, positive & negative for population & human health and climate factors and not significant for the remainder of the SEA topics

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Manufacturing (non-regulatory)	Option 1: Baseline - 'do nothing'	Campaign awareness raising to reduce point source pollution from manufacturing	9

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	?	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	?	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	?	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	?	
		Contribute to the mitigation of floods and droughts?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Encourage improved energy efficiency?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	?	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	?	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	?	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	?	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targeting of awareness raising

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Refuse disposal activities (regulatory)	Option 1: Baseline - 'do nothing'	Measures to reduce point source pollution from landfills	10

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	There could be a potential increase in energy consumption and increased green house gas emissions if pumping of leachate is required, but this could be mitigated by using the gas to generate electricity to run the pumps
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative short-term effects depending on the nature of the measure/treatment		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropnate, enhance or restore landscape character and quality?			
		Protect and, where appropnate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity and water, positive and negative for population and human health and climate factors and not significant for the remainder of the SEA topics

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Mining and quarrying (regulatory)	Option 1: Baseline - 'do nothing'	Measures to reduce point source pollution from mining and quarrying	11

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	There could be a potential increase in energy consumption and increased green house gas emissions if energy required for the measure. Mitigation measures will need to be considered
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative short-term effects depending on the nature of the measure/treatment		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity and water, positive and negative for population and human health and climate factors and not significant for the remainder of the SEA topics

Abstraction and Flow Regulation

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 1: Baseline - 'do nothing'	Measures to improve efficiency of water use	1
SEA topic	**A. SEA Objective - to what extent will the RBMP....**	**B. Asssessment Criteria - to what extent will the RBMP....**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Postive short-term effect - great quantity and quality (potentially) of water available for ecosystem	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Small postive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive short-term effect - great quantity and quality (potentially) of water available for ecosystem	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Small postive short-term effect because improvements in water efficiency are likely to be reflected in improved energy efficiency	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Positive short-term effect and would potentially delay the requirement for new infrastructure	pos.S	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally the effects of this measure are positive for all measures other than cultural heritage, landscape and soils where no significant effect is expected.					

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 1: Baseline - 'do nothing'	CAR regulations to minimise impacts on fish migration	2

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	No significant effect	NS	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity and population & human health and not significant for the other SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	Electricity generation (regulatory)	Option 1: Baseline - 'do nothing'	Planning regulations to control abstraction	3

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Short-term positive effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Short-term negative impact, as may reduce reservoir yield and energy generation	neg.S	Operate reservoir to optimise releases and storage
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive for biodiversity, population & human health, climate factors and water, and not significant for all other SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	Electricity generation (non-regulatory)	Option 1: Baseline - 'do nothing'	Campaign awareness to reduce the impact of abstraction for the electricity generation sector	4

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	?	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	?	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	?	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	?	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	?	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	?	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	?	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	?	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Insufficient information to make a judgement.					

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	Water supply activities (regulatory)	Option 1: Baseline - 'do nothing'	CAR to manage levels of abstraction and use of water	5
SEA topic	**A. SEA Objective - to what extent will the RBMP...**	**B. Asssessment Criteria - to what extent will the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Postive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will					

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	Water supply activities (non-regulatory)	Option 1: Baseline - 'do nothing'	Economic incentive to encourage efficient use of water by industry	6
SEA topic	**A. SEA Objective - to what extent will the RBMP...**	**B. Asssessment Criteria - to what extent with the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Postive short-term effect - great quantity and quality (potentially) of water available for ecosystem	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan obiectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertsking water management activities	Maintain and enhance access to and use of the water environment?	Small postive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive short-term effect - great quantity and quality (potentially) of water available for ecosystem	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Small postive short-term effect because improvements in water efficiency are likely to be reflected in improved energy efficiency	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Positive short-term effect and would potentially delay the requirement for new infrastructure	pos.S	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally the effects of this measure will be positive for biodiversity,population & human health, water, climate factors and material assets, not significant for cultural heritage, landscape and soil.					

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	Water supply activities (non-regulatory)	Option 1: Baseline - 'do nothing'	Campaign awareness to improve efficiency of domestic water use	7

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	?	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan obiectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	?	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	?	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	?	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	?	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	?	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	?	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	?	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Insufficient information to make a judgement.					

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	Agriculture irrigation (non-regulatory)	Option 1: Baseline - 'do nothing'	Economic incentive to encourage efficient use of water by irrigation	8
SEA topic	**A. SEA Objective - to what extent will the RBMP...**	**B. Asssessment Criteria - to what extent with the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Postive short-term effect - great quantity and quality (potentially) of water available for ecosystems	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan obiectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertsking water management activities	Maintain and enhance access to and use of the water environment?	Small postive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive short-term effect - great quantity and quality (potentially) of water available for ecosystem	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Small postive short-term effect because improvements in water efficiency are likely to be reflected in improved energy efficiency	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Positive short-term effect and would potentially delay the requirement for new infrastructure	pos.S	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally the effects of this measure will be positive for biodiversity, population & human health, water, climate factors and material assets, not significant for cultural heritage, landscape and soil.					

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	Agriculture irrigation (non-regulatory)	Option 1: Baseline - 'do nothing'	Campaign awareness to promote efficient water use	9
SEA topic	**A. SEA Objective - to what extent will the RBMP...**	**B. Asssessment Criteria - to what extent will the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	-	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	-	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	-	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	-	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	-	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	-	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	-	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	-	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Insufficient information to make a judgement.					

Changes to Morphology

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Historical engineering activities & urban development (regulatory)	Option 1: Baseline - 'do nothing'	Planning and development controls to reduce flood risk	1

SEA topic	A. SEA Objective - to what extent will the RBMP…	B. Asssessment Criteria - to what extent will the RBMP…	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	Regulations and control will have a positive effect only in so much that they are tailored to contribute towards 'naturalising' the flooding regime or contain features of a naturalised flooding regime
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	pos.S	Negative effects may occur if controls require increased energy consumption & emission of greenhouse gases
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	Assumes that the controls will not significantly impact on cultural heritage sites, or that mitigation measures will be put in place where appropriate
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	Perhaps a minor positive effect here, but difficult to say that this effect is significant
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity, water and climate factors, and have no significant effects on cultural heritage, landscape,material assets and soil. The effects are positive and negative for population and human health.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Agriculture (regulatory)	Option 1: Baseline - 'do nothing'	Planning regulations to reduce the morphological impacts of the agricultural sector	2

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive short-term effect	pos.S	
		Prevent the physical deterioration of water bodies?			
		Prevent the deterioration of water bodies from point source and diffuse pollution?	No significant effect		
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Small postive short-term effect	pos.S	May be minor negative short-term effect on energy consumption & emission of greenhouse gases, but not considered significant as long as best practice is applied
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	Assumption being that regulations will ensure that cultural heritage sites are protected
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	May be minor positive short-term effects, but not considered significant
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	May be minor positive short-term effects, but not considered significant
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity, water and climate factors, and have no significant effects on cultural heritage, landscape,material assets and soil. The effects are positive and negative for population and human health.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Agriculture (non-regulatory)	Option 1: Baseline - 'do nothing'	Economic incentives to reduce morphological impacts of agricultural sector	3

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan obiectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	pos.S	May be minor negative short-term effect on energy consumption & emission of greenhouse gases, but not considered significant as long as best practice is applied
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	May be minor positive short-terms effects
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity, water and climate factors, and have no significant effects on cultural heritage, landscape,material assets and soil. The effects are positive and negative for population and human health.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Agriculture (non-regulatory)	Option 1: Baseline - 'do nothing'	Campaign/awareness to reduce morphological impacts	4
SEA topic	**A. SEA Objective - to what extent will the RBMP...**	**B. Asssessment Criteria - to what extent with the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	?	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan obiectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	?	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	?	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	?	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	?	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	?	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	?	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	?	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Insufficient information to make a judgement.					

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Forestry (regulatory)	Option 1: Baseline - 'do nothing'	Regulations to reduce the impacts of Forestry on morphology	5

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	Regulations and control will have a positive effect only in so much that they are tailored to contribute towards 'naturalising' the flooding regime or contain features of a naturalised flooding regime and reduce sediment delivery to the channel
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Postive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the physical deterioration of water bodies?			
		Prevent the deterioration of water bodies from point source and diffuse pollution?	No significant effect		
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	pos.S	May be minor negative short-term effect on energy consumption & emission of greenhouse gases, but not considered significant as long as best practice is applied
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	Assumption being that regulations will ensure that cultural heritage sites are protected
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	Perhaps a minor positive effect here, but difficult to say that this effect is significant
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	May be minor positive short-term effects, but not considered significant
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity, water and climate factors, not significant for cultural heritage, landscape, material assets and soils, and negative and positive for population and human health.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Forestry (non-regulatory)	Option 1: Baseline - 'do nothing'	Economic incentives to reduce the impacts of Forestry on morphology	6

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	Effects are probably positive, but there is no unambiguous evidence to demonstrate the direct causal link between morphology and improved biodiversity - the link probably exists but is difficult to prove
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies?			
		Prevent the deterioration of water bodies from point source and diffuse pollution?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	pos.S	May be minor negative short-term effect on energy consumption & emission of greenhouse gases, but not considered significant as long as best practice is applied
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	Perhaps a minor positive effect in that reduced sediment loads may improve the operation of material assets - e.g. reduced sediment input to reservoirs and abstraction points
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	No significant effect on soils (as defined scientifically), but may improve sediment problems within a water body
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive biodiversity, water and climate, not significant for soils, material assets, landscape character and cultural heritage. The effects are positive and negative for population and human health.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Forestry (non-regulatory)	Option 1: Baseline - 'do nothing'	Campaign awareness/voluntary measures to reduce the impact of Forestry on morphology	7

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	?	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	?	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	?	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	?	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	?	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	?	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	?	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	?	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Insufficient information to make a judgement.					

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Land reclamation (regulatory)	Option 1: Baseline - 'do nothing'	Planning regulations to reduce the morphological impacts of land reclamation	8

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan obiectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive short-term effect	pos.S	
		Promote efficient and sustainable use of water?			
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	pos.S	May be minor negative short-term effect on energy consumption & emission of greenhouse gases, but not considered significant as long as best practice is applied
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	Assumption being that regulations will ensure that cultural heritage sites are protected
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity, water, climate factors, negative and positive for population and human health and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Land reclamation (non-regulatory)	Option 1: Baseline - 'do nothing'	Campaign awareness/voluntary measures to reduce the impact of land reclamation on morphology	9

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	?	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	?	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	?	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	?	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	?	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	?	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	?	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	?	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Insufficient information to make a judgement.					

Invasive non-native species

	Pressure	Sector	Option	Measure	Measure No.
	Alien species	Recreation, sporting and cultural activities (regulatory)	Option 1: Baseline - 'do nothing'	Planning regulations to reduce the impacts of alien species	1

SEA topic	A. SEA Objective - to what extent will the RBMP…	B. Asssessment Criteria - to what extent will the RBMP…	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Postive and negative short-term effect	neg./pos.	Positive short-term effect on biodiversity where impact of aliens removed, but potentially negative short-term impact if during transportation/removal of alients new areas get infected
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive and negative short-term effect	neg./pos.	Positive short-term effect on biodiversity where impact of aliens removed, but potentially negative short-term impact if during transportation/removal of alients new areas get infected
		Prevent the physical deterioration of water bodies?			
		Promote efficient and sustainable use of water?			
		Prevent the deterioration of water bodies from point source and diffuse pollution?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?	No significant effect		
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Positive short-term effect	pos.S	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	Perhaps minor benefits for infrastructure, but not strategically significant
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: The effects of this measure are positive for population & human health,landscape and soil, not significant for cultural heritage and material assets and positive and negative for biodiversity, climate factors and water.					

	Pressure	Sector	Option	Measure	Measure No.
	Alien species	Recreation, sporting and cultural activities (non-regulatory)	Option 1: Baseline - 'do nothing'	Campaign awareness to reduce the impact of alien species	2

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	?	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	?	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	?	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	?	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	?	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	?	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	?	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	?	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Insufficient information to make a judgement.					

	Pressure	Sector	Option	Measure	Measure No.
	Alien species	All sectors	Option 1: Baseline - 'do nothing'	Measures to control the exploitation of salmon and sea trout	3

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Short-term positive effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	No significant effect	NS	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	No significant effect	NS	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: The effect of this measure is positive for biodiversity and not signifcant for all other SEA topics

Draft RBMP

Diffuse Pollution

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	All sectors	Option 2: RBMP measures	Reduce diffuse source inputs: non-urban land management issues	1

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Postive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Effects are generally positive for biodiversity. However, depending on the nature of the measure(s) required to deal with the issues, may result in increased energy consumption, increased GHG emissions and increased waste. Mitigation required.
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Encourage improved energy efficiency?	Negative short-term effect		
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	Possible improvements or return of landscape character through retention of hedges etc
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	Possible minor positive effect through reducing eutrophication and problems that presents to water infrastructure
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Postive short-term effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: The effects of this measure are positive for biodiversity, water and soil, positive and negative for population & human health and climate factors and not significant for the other SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	All sectors	Option 2: RBMP measures	Reduce diffuse source inputs: provide first time sewerage	2

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	This effect will be positive provided that the waste that is generated is dealt with in an appropriate manner.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	This effect will be positive provided that the waste that is generated is dealt with in an appropriate manner.
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Effects are generally positive for biodiversity. However, depending on the nature of the measure(s) required to deal with the issues, may result in increased energy consumption, increased GHG emissions and increased waste. Mitigation required.
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Encourage improved energy efficiency?			
		Contribute to reducing greenhouse gas emissions from water management activities?	Negative short-term effect		
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Negative short-term effect	neg.S	Impact can be mitigated by appropriate choice and design of works
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity and water, negative and positive for population & human health and climate factors, not significant for cultural heritage, material assests and soils and negative for landscape.

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	All sectors	Option 2: RBMP measures	Reduce diffuse source inputs: reduce sources from built environment	3

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	This effect will be positive provided that the waste that is generated is dealt with in an appropriate manner.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effects	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Effects are generally positive for biodiversity. However, depending on the nature of the measure(s) required to deal with the issues, may result in increased energy consumption, increased GHG emissions and increased waste. Mitigation required.
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Encourage improved energy efficiency?			
		Contribute to reducing greenhouse gas emissions from water management activities?	Negative short-term effect		
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	Minor positive short-term effects
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Posi tive short-term effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally this measure will have a positive short-term effects on biodiversity, water and soils, negative and positive effects on population & human health and climate factors and no significant effect on cultural heritage, landscape and material assets.

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	All sectors	Option 2: RBMP measures	Reduce diffuse source inputs: retrofit/improve existing SuDs	4

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effects	pos.S	Mitigation required during construction to reduce impact on climate change
		Contribute to the mitigation of floods and droughts?			
		Address the potential impacts of climate change on biodiversity?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Encourage improved energy efficiency?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	Ensure construction avoids impact on cultural heritage sites
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	Minor positive short-term effects
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Positive short-term effects	pos.S	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effects	pos.S	Minor positive effects on soil quality through reduced pollutant loads. Secondary benefits of SUDS on erosion through flow attenuation.
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally this measure will have a positive short-term effect on biodiversity,water,climate factors, material assets and soil, negative and positive effects on population and human health and no significant effect on cultural heritage and landscape.

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Agriculture (regulatory)	Option 2: RBMP measures	Silage, Slurry and Fuel Oil (SSAFO) Regulation (SSAFO amendments)	6

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Effects are generally positive for biodiversity. However, depending on the nature of the measure(s) required to deal with the issues, may result in increased energy consumption, increased GHG emissions and increased waste. Mitigation required.
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Encourage improved energy efficiency?	Negative short-term effect		
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effects	NS	Minor positive effects likely, but probably not strategically significant
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effects	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	pos.S	
		Improve degraded sites?	Positive short-term effect		
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally this measure will have a positive short-term effect on biodiversity, water and soils, and a positive and negative effect on population & human health and climate factors, and no significant effect on cultural heritage, landscape and material assets.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Agriculture (non-regulatory)	Option 2: RBMP measures	Economic Incentive: Scottish Rural Development Programmes: 2008-2014 (covers agriculture, forestry, land management)	7

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Effects are generally positive for biodiversity. However, depending on the nature of the measure(s) required to deal with the issues, may result in increased energy consumption, increased GHG emissions and increased waste. Mitigation required.
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Encourage improved energy efficiency?	Positive or negative effect for different sectors depending on nature of the measures		
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	May be a minor positive effect, but probably not strategically significant
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Safeguard soil quality, quantity and function?			
		Protect agricultural land?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally, the effects of this measure will be positive for biodiversity, water and soil, negative and positive for climate factors and population & human health and not significant for the remainder of the SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Agriculture (non-regulatory)	Option 2: RBMP measures	Economic Incentive: Scottish Rural Development Programmes: 2008-2014 (covers agriculture, forestry, land management)	7

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Effects are generally positive for biodiversity. However, depending on the nature of the measure(s) required to deal with the issues, may result in increased energy consumption, increased GHG emissions and increased waste. Mitigation required.
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Encourage improved energy efficiency?	Positive or negative effect for different sectors depending on nature of the measures		
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	May be a minor positive effect, but probably not strategically significant
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Safeguard soil quality, quantity and function?			
		Protect agricultural land?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally, the effects of this measure will be positive for biodiversity, water and soil, negative and positive for climate factors and population & human health and not significant for the remainder of the SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Forestry (non-regulatory)	Option 2: RBMP measures	Economic Incentive: Scottish Rural Development Programmes: 2008-2014 (covers agriculture, forestry, land management)	9

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Effects are generally positive for biodiversity & recreation, but there may be costs for other sectors. The costs & benefits will need to be assessed in the IA. Mitigation could be achieved through a targeted study to assess distribution of costs and benefits and effective disposal of waste
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Encourage improved energy efficiency?	Positive or negative effect for different sectors depending on externalities		
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	May be a minor positive effect, but probably not strategically significant
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Safeguard soil quality, quantity and function?			
		Protect agricultural land?	No significant effect		
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally, the effects of this measure will be positive for biodiversity, water and soils, negative and positive for climate and population and human health and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Urban development (regulatory)	Option 2: RBMP measures	CAR 2005: GBRs require SuDs for new surface water discharges - Q&S investment programme, Q&S retrofittimf of SuDs to industrial areas	10

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effects	neg./pos.	Effects are generally positive for biodiversity & recreation, but there may be costs for other sectors. The costs & benefits will need to be assessed in the IA. Mitigation could be achieved through a targeted study to assess distribution of costs and benefits and effective disposal of waste
		Contribute to the mitigation of floods and droughts?			
		Address the potential impacts of climate change on biodiversity?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Encourage improved energy efficiency?			
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative effect for different sectors depending on externalities		
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	Ensure construction avoids impact on cultural heritage sites
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	Ensure construction avoids impact on designated landscapes
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Positive short-term effects	pos.S	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Minor positive short-term effects	pos.S	Minor positive effects on soil quality through reduced pollutant loads. Secondary benefits of SUDS on erosion through flow attenuation.
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally, the effects of this measure will be positive for biodiversity, water, soil and material assets, negative and positive for climate factors and population & human health and not significant for the remainder of the SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Agriculture (non-regulatory)	Option 2: RBMP measures	SEPA catchment-related activities, CMPs and regional roll-out in areas at risk of not meeting WFD and protected area standards	12

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	neg./pos.	Effects are generally positive for biodiversity & recreation, but there may be costs for other sectors. The costs & benefits will need to be assessed in the IA. Mitigation could be achieved through a targeted study to assess distribution of costs and bene
		Contribute to the mitigation of floods and droughts?			
		Address the potential impacts of climate change on biodiversity?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Encourage improved energy efficiency?			
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative effect for different sectors depending on measures taken		
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Positive short-term effect	pos.S	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Positive short-term effect	pos.S	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	Minor positive effects on soil quality through reduced pollutant loads. Secondary benefits of SUDS on erosion through flow attenuation.
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally, the effects of this measure will be positive for biodiversity, population & human health, water, soil, landscape and material assets, negative and positive for climate factors and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Agriculture (regulatory)	Option 2: RBMP measures	CAR 2005: GBR - diffuse pollution other relevant CAR requirements	11

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Effects are generally positive for biodiversity & recreation, but there may be costs for other sectors. The costs & benefits will need to be assessed in the IA. Mitigation could be achieved through a targeted study to assess distribution of costs and bene
		Contribute to the mitigation of floods and droughts?			
		Address the potential impacts of climate change on biodiversity?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Encourage improved energy efficiency?			
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative effect for different sectors depending on measures taken		
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Positive short-term effects	pos.S	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Minor positive short-term effects	pos.S	Minor positive effects on soil quality through reduced pollutant loads. Secondary benefits of SUDS on erosion through flow attenuation.
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally, the effects of this measure will be positive for biodiversity, population & human health, water, soil and material assets, negative and positive for climate factors and not significant for the remainder of the SEA topics.					

Point Source Pollution

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	All sectors	Option 2: RBMP measures	IPPC/CAR: reduce at source (where new standards)	1
SEA topic	**A. SEA Objective - to what extent will the RBMP...**	**B. Asssessment Criteria - to what extent will the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Impact can be mitigated by appropriate choice and design of measures and appropriate handling of waste
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Contribute to reducing greenhouse gas emissions from water management activities?	Negative or positive short-term effect depending on the nature of the measure		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally this measure will have a positive short-term effect on biodiversity and water, positive and negative effects on population & human health and climate factors and no significant effect on the remaining SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	All sectors	Option 2: RBMP measures	IPPC/CAR: increase treatment (where new standards)	2

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Impact can be mitigated by appropriate choice and design of measures and appropriate handling of waste
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Contribute to reducing greenhouse gas emissions from water management activities?	Negative or positive short-term effect depending on the nature of the measure		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Negative short-term effect	neg.S	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally this measure will have a positive short-term effect on biodiversity and water, positive and negative effects on population & human health and climate factors and no significant effect on the remaining SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	All sectors	Option 2: RBMP measures	IPPC/CAR: transfer all or part of discharge (where new standards)	3

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Postive short-term effect at site where existing discharge is transferred, but potentially a negative short-term effect at site where discharge is received	neg./pos.	Mitigation would require study of impact on where discharge is transferred
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Postive short-term effect at site where existing discharge is transferred, but potentially a negative short-term effect at site where discharge is received	neg./pos.	Mitigation would require study of impact on where discharge is transferred
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive short-term effect at site where existing discharge is transferred, but potentially a negative short-term effect at site where discharge is received	neg./pos.	Mitigation would require study of impact on where discharge is transferred
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Mitigation would require study of impact on where the discharge is relocated.
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Address the potential impacts of climate change on biodiversity?	Postive short-term effects for the site from whence the discharge is transferred, but potentially negative short-term effects for the (new) receiving water body		
		Contribute to reducing greenhouse gas emissions from water management activities?	Potentially negative short-term effects because of increased energy requirements (e.g. pumping)		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor negative short-term effect as some existing infrastructure may be redundant as a result of change	neg.S	Mitigation would require detailed optioneering to optimise existing water infrastructure
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTW's & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are negative for material assets, not significant for soils and positive and negative for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	All sectors	Option 2: RBMP measures	IPPC/CAR: remediation of sediments and/or water (either by removal or by treating in situ) (where new standards)	4

SEA topic	A. SEA Objective - to what extent will the RBMP....	B. Asssessment Criteria - to what extent will the RBMP....	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect at the site where the sediment or water is treated, potentially negative short-term effect depending on how the spoil or water is disposed of	neg./pos.	Mitigation to ensure that waste/water is properley disposed of
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect at the site where the sediment or water is treated, potentially negative short-term effect depending on how the spoil or water is disposed of	neg./pos.	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?	No significant effect	neg./pos.	The effects of this measure will be positive for biodiversity and may help improve conveyance thereby mitigating the impacts of droughts and floods and promoting sustainable flood management. However, there are potential negative effects in terms of greenhouse gas emissions and increased energy use depending on the mechanisms usd to treat the sediment/water. Mitigation will therefore require a cost benefit analysis and consideration of how to deal with waste
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Contribute to the mitigation of floods and droughts?			
		Promote sustainable flood management?			
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative effects depending on the mechanisms used		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally this measure will have positive short-term effects on water, positive and negative effects for biodiversity, population and human health and climate change, but will have no significant effects on the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	All sectors	Option 2: RBMP measures	IPPC/CAR: change timing or frequency of discharge (where new standards)	5

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effects	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effects	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effects	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effects		
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative short-term effects on different sectors depending on exact nature of measure		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally this measure will have short-term positive effects on biodiversity, water and material assets and negative and positive effects on population & human health and climate factors and no significant effect on the other SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Sewage disposal (regulatory)	Option 2: RBMP measures	CAR 2005: waste water discharge to rivers, lochs etc.	6
SEA topic	**A. SEA Objective - to what extent will the RBMP...**	**B. Asssessment Criteria - to what extent will the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	The effects of this measure will be positive for biodiversity. However, there are potential negative effects in terms of greenhouse gas emissions and increased energy use depending on the mechanisms/treatments applied. Mitigation will therefore require a cost benefit analysis and consideration of how to deal with waste
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Encourage improved energy efficiency?	Positive or negative short-term effects on different sectors depending on exact nature of measure		
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropnate, enhance or restore landscape character and quality?			
		Protect and, where appropnate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally the effects of this measure will be positive for biodiversity and water, positive and negative for population & human health and climate factors and not significant for the remainder of the SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Sewage disposal (regulatory)	Option 2: RBMP measures	Scottish Water Charging schemes: provides incentives for industry to reduce the amount of trade effluent they discharge to sewer	9

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	Negative effects can be identifed in the IA
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Have assumed an overall positive impact despite potential negative impact due to energy consumption (e.g. increased pumping and operational requirements) and potential waste streams
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Encourage improved energy efficiency?			
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative short-term effects on different sectors depending on exact nature of measure		
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive for biodiversity and water, positive and negative for population & human health and climate factors and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Sewage disposal (regulatory)	Option 2: RBMP measures	Habitats Directive review of consents	10
SEA topic	**A. SEA Objective - to what extent will the RBMP....**	**B. Asssessment Criteria - to what extent will the RBMP....**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effects	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effects	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effects	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Encourage improved energy efficiency?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	May be a minor positive short-term effect here
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally the effects of this measure will be positive for biodiversity, water and climate factors, positive and negative for population & human health and not significant for all the other SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Sewage disposal (regulatory)	Option 2: RBMP measures	Water company AMPs/Quality & Standards	11

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Mitigation would require study of impact on where the discharge is relocated. Have assumed an overall positie impact despite potential negative impact due to energy consumption (e.g. increased pumping and operational requirements) and potential waste streams
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Encourage improved energy efficiency?	Positive or negative short-term effects on different sectors depending on exact nature of measure		
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive for biodiversity and water, positive and negative for population & human health and climate factors and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Sewage disposal (regulatory)	Option 2: RBMP measures	CAR: First time rural sewerage programmes	12

SEA topic	A. SEA Objective - to what extent will the RBMP....	B. Asssessment Criteria - to what extent will the RBMP....	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is recognised that there will be costs in providing first time sewerage, and that this will be borne initially by the water companies? These may be passed on to customers.
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Effects are generally positive for biodiversity & recreation, but there may be costs for other sectors. The provision of first time sewerage will require additional energy and, as a consequence, there will be increased GHG emissions.
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Encourage improved energy efficiency?	Negative short-term effect		
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Negative short-term effect	neg.S	Negative short-term effect on the landscape aesthetics, positive short-term effect on the quality of the water body (if considered part of the landscape)
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity and water , negative and positive for population & human health and climate factors , not significant for cultural heritage,material assets and soils and negative for landscape.

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Aquaculture/fish farming (regulatory)	Option 2: RBMP measures	CAR 2005: rate or scale of discharges arising from fish farms	13

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	Reducing rate or scale of discharges arising from fish farms may require treatment and therefore potential costs which may need to be considered
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	There may be additional energy usage from additional storage and treatment requirements. Could be mitigated through appropriate selection of treatment methods
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Encourage improved energy efficiency?	Positive or negative short-term effects depending on the nature of the treatment/measure		
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	Possible minor postive effects on water management infrastructure, but not strategic
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive for biodiversity and water, positive and negative for population & human health and climate factors and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Manufacturing (regulatory)	Option 2: RBMP measures	CAR 2005: Priority substances (2008)	14
SEA topic	**A. SEA Objective - to what extent will the RBMP....**	**B. Asssessment Criteria - to what extent will the RBMP....**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Have assumed an overall positive impact despite potential negative impact due to energy consumption and potential waste streams
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Encourage improved energy efficiency?	Positive or negative short-term effects on different sectors depending on exact nature of measure		
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally the effects of this measure will be positive for biodiversity and water, positive and negative for population & human health and climate factors and not significant for the remainder of the SEA topics.					

Abstraction and Flow Regulation

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: use alternative source/relocate abstraction	1
SEA topic	**A. SEA Objective - to what extent will the RBMP....**	**B. Asssessment Criteria - to what extent with the RBMP....**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Postive short-term effect at site where existing abstraction is moved/reduced, but potentially a negative short-term effect at site where abstraction is relocated	neg./pos.	Mitigation would require study of impact on where abstraction is relocated
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Small postive short-term effect at site where existing abstraction is moved/reduced, but also potentially negative short-term effect at site where abstraction is relocated	neg./pos.	Mitigation would require study of impact on where abstraction is relocated
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Small postive short-term effect at site where existing abstraction is moved/reduced, but also potentially negative short-term effect at site where abstraction is relocated	neg./pos.	Mitigation would require study of impact on where abstraction is relocated
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Small postive short-term effect at site where existing abstraction is moved/reduced, but also potentially negative short-term effect at site where abstraction is relocated	neg./pos.	Mitigation would require study of impact on where abstraction is relocated. Have may have an overall negative impact due to energy consumption (e.g. increased pumping and operational requirements)
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	Small negative short-term effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor negative short-term effect as some existing infrastructure may be redundant as a result of change	neg.S	Mitigation would require detailed optioneering to optimise existing water infrastructure
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally the effects of this measure are negative on material assets, not significant on cultural heritage, landscape and soils, but potentially positive or negative on all other SEA topics depending on whether the water body benefits from the measure (current) or is the receiving water body.					

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: improve water efficiency (e.g. abstraction matches need) or reduce need	2

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Positive short-term effect and would potentially delay the requirement for new infrastructure	pos.S	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water, climate factors and material assets, and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: reduce leakage	3

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	Cost to companies
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	neg./pos.	Mitigation may be required during construction activities to reduce leakge reduction - greenhouse gas emissions and higher energy consumption. These are not however considered to be significant.
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Positive short-term effect	pos.S	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water,climate factors and material assets,and not significant on the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: control pattern/timing of abstraction (hands off flow/utilisation of storage(new/existing))	4

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	neg./pos.	Mitigation may be required during construction activities to reduce leakge reduction - greenhouse gas emissions and higher energy consumption. These are not however considered to be significant.
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor short-term negative impact, as may require new water supply and flood defence infrastructure	neg.S	Design pattern and timing of abstraction to mitigate impacts on water management infrastructure
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, climate factors and water, negative on material assets. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: reduce risk of fish mortality in intakes or screens	5

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan obiectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	No significant effect	NS	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	No significant effect	NS	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	Minor effect would be the regular maintenance costs
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, but not significant on the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: provide appropriate baseline flow regime downstream of impoundment	6

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Postive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor short-term negative impact, as may reduce reservoir yield	neg.S	Operate reservoir to optimise releases and storage
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: provide higher flows as appropriate to enable fish migration downstream of impoundment	7

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Postive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor short-term negative impact, as may reduce reservoir yield	neg.S	Operate reservoir to optimise releases and storage
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: provide higher flows as appropriate to maintain/improve habitat downstream of impoundment	8

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Postive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor short-term negative impact, as may reduce reservoir yield	neg.S	Operate reservoir to optimise releases and storage
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: provide for fish access between reservoir and tributaries	9

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	No significant effect	NS	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health and not significant on the remainder of the SEA topics

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: reduce impact on DO levels downsteam of impoundment	10

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level. Further, mitigation may be required to ensure that no significant environmental effects occur in the reservoir if designated.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan obiectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level. Further, mitigation may be required to ensure that no significant environmental effects occur in the reservoir if designated.
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Postive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor short-term negative impact, as may reduce reservoir yield	neg.S	Operate reservoir to optimise releases and storage
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: reduce impact on temperature conditions downstream of impoundment	11

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level. Further, mitigation may be required to ensure that no significant environmental effects occur in the reservoir if designated.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level. Further, mitigation may be required to ensure that no significant environmental effects occur in the reservoir if designated.
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Postive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor short-term negative impact, as may reduce reservoir yield	neg.S	Operate reservoir to optimise releases and storage
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: appropriate management of rate and range of artificial drawdown	12

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level. Further, mitigation may be required to ensure that no significant environmental effects occur in the reservoir if designated.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level. Further, mitigation may be required to ensure that no significant environmental effects occur in the reservoir if designated.
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Postive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor short-term negative impact, as may reduce reservoir yield	neg.S	Operate reservoir to optimise releases and storage
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: appropriate management of seasonal variation of water level changes behind the impoundment	13

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level. Further, mitigation may be required to ensure that no significant environmental effects occur in the reservoir if designated.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level. Further, mitigation may be required to ensure that no significant environmental effects occur in the reservoir if designated.
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Postive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor short-term negative impact, as may reduce reservoir yield	neg.S	Operate reservoir to optimise releases and storage
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	CAR control abstraction: appropriate baseline flow regime downstream of impoundment	14

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level. Further, mitigation may be required to ensure that no significant environmental effects occur in the reservoir if designated.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level. Further, mitigation may be required to ensure that no significant environmental effects occur in the reservoir if designated.
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Postive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor short-term negative impact, as may reduce reservoir yield	neg.S	Operate reservoir to optimise releases and storage
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors,negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	Electricity generation (regulatory)	Option 2: RBMP measures	CAR 2005: SEPA controls on licensed hydropower schemes	15

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan obiectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the SEPA controls on licensed hydropower schemes can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the SEPA controls on licensed hydropower schemes can be undertaken without impacting on the current supply/demand balance, existing entitlements to use water and good ecological status. This will need to be checked at the local level.
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	pos.S	Assumes that the controls are targeted to contribute to mitigation and adapation to climate change
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Short-term negative effect	neg.S	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that controls can be undertaken without impacting on the current supply/demand balance, existing entitlements to use water and good ecological status/potential.

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	Electricity generation (regulatory)	Option 2: RBMP measures	CAR 2005: Fishery (Electricity) Committee advice - fisheries protection via SEPA licences	16

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	Mitigate potential impacts through the IA
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
		Increase commercial activities that are directly water-dependent	Positive and negative short-term effects depending on sector		
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	No significant effect	NS	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTW's & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally the effects of this measure will be positive on biodiversity and population & human health, and not significant on the remainder of the SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	Water supply activities (regulatory)	Option 2: RBMP measures	CAR 2005: levels of abstraction, management of dams and efficient use of water	17

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Postive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor short-term negative impact, as may reduce reservoir yield	neg.S	Operate reservoir to optimise releases and storage
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	Agriculture irrigation (regulatory)	Option 2: RBMP measures	CAR 2005: SEPA imposes controls on volume of water that can be abstracted and the time over which it can be abstracted, through CAR	19

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor short-term negative impact, as may require new water supply and flood defence infrastructure	neg.S	Design pattern and timing of abstraction to mitigate impacts on water management infrastructure
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, climate factors and water, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	Revision of Catchment Abstraction Management Strategies	20

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor short-term negative impact, as may require new water supply and flood defence infrastructure	neg.S	Design pattern and timing of abstraction to mitigate impacts on water management infrastructure
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, climate factors and water, negative on material assets and not significant on the remainder of the SEA topics. It is important to note that the positive effects are based on the assumption that controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water.

	Pressure	Sector	Option	Measure	Measure No.
	Abstraction and flow regulation	All sectors	Option 2: RBMP measures	Restoring Sustainable Abstraction Programme	21

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	It is important to note that the positive effects are based on the assumption that controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?	No significant effect		
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Minor short-term negative impact, as may require new water supply and flood defence infrastructure	neg.S	Design pattern and timing of abstraction to mitigate impacts on water management infrastructure
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, climate factors and water, negative on material assets and not significant on the remainder of the SEA topics. It is important to note that the pos

Changes to Morphology

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	Option 2: RBMP measures	Improve modified habitat: removal of barriers or provision of mechanisms to enable fish migration	1

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?		pos.S	
		Contribute to the mitigation of floods and droughts?	No significant effect		
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?	No significant effect		
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Negative short-term effect if measure reduces cultural heritage value of structure providing barrier	neg.S	Impact can be mitigated by appropriate choice and design of measure to overcome barrier
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Small positive short-term effect from certain measures (e.g. removal of weir and restoration of natural flow regime) but change to landscape may be considered a short-term negative effect by other groups	neg./pos.	Mitigation would require study of site specific impacts
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Negative short-term effect if barrier removal adversely effects water infrastructure (e.g. weir for water supply abstraction)	neg.S	Mitigation would require study of site specific impacts
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally the effects of this measure are positive for biodiversity, population & human health, water and climate factors, negative for cultural heritage and material assets, positive and negative for landscape and not significant for soils.					

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	Option 2: RBMP measures	Improve modified habitat: removal of engineering structures	2

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan obiectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Negative short-term effect on flood risk depending on the nature of the structure	neg./pos.	Impact can be mitigated by appropriate choice and design of measure
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?	No significant effect		
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?	No significant effect		
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Negative short-term effect if structure is of cultural heritage value	neg.S	Impact can be mitigated by appropriate choice and design of measure to overcome barrier
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Positive short-term effect from certain measures (e.g. removal of weir and restoration of natural flow regime) but change to landscape may be considered a short-term negative effect by other groups	neg./pos.	Mitigation would require study of site specific impacts
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Negative short-term effect of structure removal may adversely effects water infrastructure	neg.S	Mitigation would require study of site specific impacts
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity and water, negative for cultural heritage and material assets, positive and negative for population & human health, climate factors and landscape and not significant for soils.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	Option 2: RBMP measures	Improve modified habitat: improvements to condition of channel/bed and/or banks/shoreline	3

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Postive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Increase commercial activities that are directly water-dependent			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Prevent the deterioration of water bodies from point source and diffuse pollution?	No significant effect	pos.S	
		Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect		
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	Minor positive effects for flooding, but this will depend on the design of the measure
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Positive short-term effect	pos.S	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	Measure should not impact on existing infrastructure
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?	No significant effect		

Summary: Generally the effects of this measure are positive for all measures but climate factors, cultural heritage and material assets where no significant effect is expected.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	Option 2: RBMP measures	Improve modified habitat: improvements to condition of riparian zone and/or wetland habitats	4

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Positive short-term effect	pos.S	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?	No significant effect		

Summary: Generally the effects of this measure are positive for all SEA topics other than cultural heritage and material assets where no significant effects are expected.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	Option 2: RBMP measures	Improve modified habitat: changes to sediment management maintenance regime	5

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effects	pos.S	This assumes that change to sediment management regime is designed to improve morphological conditions. Disposal of sediment (if required) will need to be in accordance with best practice
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effects for water body where maintenance regime is managed, potentially negative short term effect because of disposal of dredged material	neg./pos.	Mitigation would include appropriate disposal of removed sediment, including contaminated sediments
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	May be minor positive effects on flooding, but as these activities likely to be in a harbour, effects are not regarded as significant. May be minor negative effects on energy and greenhouse gas emissions from the energy required to undertake the maintenance
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Positive short-term effect	pos.S	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect		
		Improve degraded sites?	Negative short-term effect if disposal of sediment/contaminated sediment is not in accordance with best practice	neg.S	Mitigation would include appropriate disposal of removed sediment, including contaminated sediments
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiverity, water and material assets, positive and negative for population & human health, negative for soils and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Historical engineering activities & urban development (regulatory)	Option 2: RBMP measures	CAR 2005: CAR prevent new damage to the water environment from engineering works on rivers (including maintenance regimes)	6

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: The effects of this measure are positive for biodiversity, population & human health and water and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Agriculture (regulatory)	Option 2: RBMP measures	CAR 2005: CAR prevent new damage to the water environment by engineering works on rivers	9

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: The effects of this measure are positive for biodiversity, population & human health and water and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Forestry (regulatory)	Option 2: RBMP measures	CAR 2005: CAR prevent new damage to the water environment from engineering works on rivers (including maintenance regimes)	10

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: The effects of this measure are positive for biodiversity, population & human health and water and not significant for the remainder of the SEA topics.

Invasive non-native species

	Pressure	Sector	Option	Measure	Measure No.
	Alien species	All sectors	Option 2: RBMP measures	Control alien species: contain to prevent spread	1
SEA topic	**A. SEA Objective - to what extent will the RBMP...**	**B. Asssessment Criteria - to what extent will the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
		Prevent the deterioration of water bodies from point source and diffuse pollution?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Positive short-term effect	pos.S	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: The effects of this measure are positive for biodiversity, population & human health, water, landscape, and soils, and not significant on the other SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Alien species	All sectors	Option 2: RBMP measures	Control alien species: eradicate in situ	2

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Postive and negative short-term effect	neg./pos.	It is assumed that eradication programmes are specifically targeted at alien species (e.g. selective herbicide use), and will have no consequences for indigenous species. Mitigation: consideration will need to be given to the transport and disposal of biota to minimise any adverse impacts (e.g.avoidance of re-colonisation of species).
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive and negative short-term effect	neg./pos.	It is assumed that eradication programmes are specifically targeted at alien species (e.g. selective herbicide use), and will have no consequences for indigenous species. Mitigation: consideration will need to be given to the transport and disposal of biota to minimise any adverse impacts (e.g.avoidance of re-colonisation of species).
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
		Prevent the deterioration of water bodies from point source and diffuse pollution?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Positive short-term effect	pos.S	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: The effects of this measure are positive for population & human health, landscape and soils, negative and positive for biodiversity and water, and not significant on the other SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Alien species	All sectors	Option 2: RBMP measures	Control alien species: capture & remove	3

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extend with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Postive and negative short-term effect	neg./pos.	It is assumed that eradication programmes are specifically targeted at alien species (e.g. selective herbicide use), and will have no consequences for indigenous species. Mitigation: consideration will need to be given to the transport and disposal of biota to minimise any adverse impacts (e.g.avoidance of re-colonisation of species).
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive and negative short-term effect	neg./pos.	It is assumed that eradication programmes are specifically targeted at alien species (e.g. selective herbicide use), and will have no consequences for indigenous species. Mitigation: consideration will need to be given to the transport and disposal of biota to minimise any adverse impacts (e.g.avoidance of re-colonisation of species).
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Prevent the deterioration of water bodies from point source and diffuse pollution?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Positive short-term effect	pos.S	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: The effects of this measure are positive for population & human health, landscape and soils, negative and positive for biodiversity and water, and not significant on the other SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Alien species	All sectors	Option 2: RBMP measures	Control alien species: prevent introduction	4

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
		Prevent the deterioration of water bodies from point source and diffuse pollution?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Positive short-term effect	pos.S	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: The effects of this measure are positive for biodiversity, population & human health, water, landscape, and soils, and not significant on the other SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Alien species	All sectors	Option 2: RBMP measures	Fish Health Directive - limit fish disease & non-native species introductions, audit high risk movements, enforce against illegal activity	5

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?	No significant effect		
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	No significant effect	NS	
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: The effects of this measure are positive for biodiversity and population & human health and not significant on the other SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Alien species	All sectors	Option 2: RBMP measures	Alien species regulations to control non-native fish in aquaculture	6

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?	No significant effect		
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	No significant effect	NS	
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: The effects of this measure are positive for biodiversity, population & human health, water, landscape, and soils, and not significant on the other SEA topics.

Closing the Gap

Diffuse Pollution

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Agriculture (non-regulatory)	Option 3: Closing the gap	Additional investment in catchment related activities and CMPs over successive planning cycles	1

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Postive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	neg./pos.	Effects are generally positive for biodiversity & recreation, but there may be costs for other sectors. The costs & benefits will need to be assessed in the IA. Mitigation could be achieved through a targeted study to assess distribution of costs and bene
		Contribute to the mitigation of floods and droughts?			
		Address the potential impacts of climate change on biodiversity?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Encourage improved energy efficiency?			
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative effect for different sectors depending on measures taken		
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Positive short-term effect	pos.S	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Positive short-term effect	pos.S	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	Minor positive effects on soil quality through reduced pollutant loads. Secondary benefits of SUDS on erosion through flow attenuation.
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Generally, the effects of this measure will be positive for biodiversity, population & human health, water, soil, landscape and material assets, negative and positive for climate factors and not significant for the remainder of the SEA topics.					

Point Source Pollution

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Sewage disposal (regulatory)	Option 3: Closing the gap	Scottish Government: low P detergents	1

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effects	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	No significant effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?	Postive short-term effect		
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?	No significant effect		
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	neg./pos.	Mitigation may be required to assess the impacts of the measure on energy consumption, greenhouse gas emissions and possibly the disposal of waste streams
		Contribute to the mitigation of floods and droughts?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Contribute to reducing greenhouse gas emissions from water management activities?	Positive or negative short-term effect depending on the nature of treatment/measure		
		Contribute to reducing greenhouse gas emissions from water management activities?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Not relevant	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally this measure will have a positive short-term effect on biodiversity and water. Cultural heritage,landscape, material assets and soil where there will be no significant effect and on climate factors and population & human health where the impact will be either positive or negative depending on the nature of the measure applied and the handling of waste.

Changes to Morphology

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	Option 3: Closing the gap	Improve modified habitat: removal of barriers or provision of mechanisms to enable fish migration	1

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?		pos.S	
		Contribute to the mitigation of floods and droughts?	No significant effect		
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?	No significant effect		
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Negative short-term effect if measure reduces cultural heritage value of structure providing barrier	neg.S	Impact can be mitigated by appropriate choice and design of measure to overcome barrier
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Small positive short-term effect from certain measures (e.g. removal of weir and restoration of natural flow regime) but change to landscape may be considered a short-term negative effect by other groups	neg./pos.	Mitigation would require study of site specific impacts
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Negative short-term effect if barrier removal adversely effects water infrastructure (e.g. weir for water supply abstraction)	neg.S	Mitigation would require study of site specific impacts
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity, population & human health, water and climate factors, negative for cultural heritage and material assets, positive and negative for landscape and not significant for soils.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	Option 3: Closing the gap	Improve modified habitat: removal of engineering structures	2

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan obiectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Negative short-term effect on flood risk depending on the nature of the structure	neg./pos.	Impact can be mitigated by appropriate choice and design of measure
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?	No significant effect		
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?	No significant effect		
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Negative short-term effect if structure is of cultural heritage value	neg.S	Impact can be mitigated by appropriate choice and design of measure to overcome barrier
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Positive short-term effect from certain measures (e.g. removal of weir and restoration of natural flow regime) but change to landscape may be considered a short-term negative effect by other groups	neg./pos.	Mitigation would require study of site specific impacts
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Negative short-term effect of structure removal may adversely effects water infrastructure	neg.S	Mitigation would require study of site specific impacts
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity and water, negative for cultural heritage and material assets, positive and negative for population & human health, climate factors and landscape and not significant for soils.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	Option 3: Closing the gap	Improve modified habitat: improvements to condition of channel/bed and/or banks/shoreline	3

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Postive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Increase commercial activities that are directly water-dependent			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Prevent the deterioration of water bodies from point source and diffuse pollution?	No significant effect	pos.S	
		Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect		
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	Minor positive effects for flooding, but this will depend on the design of the measure
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Positive short-term effect	pos.S	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	Measure should not impact on existing infrastructure
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTW's & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?	No significant effect		

Summary: Generally the effects of this measure are positive for all measures but climate factors, cultural heritage and material assets where no significant effect is expected.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	Option 3: Closing the gap	Improve modified habitat: improvements to condition of riparian zone and/or wetland habitats	4

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive short-term effect	pos.S	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Positive short-term effect	pos.S	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Positive short-term effect	pos.S	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?	No significant effect		

Summary: Generally the effects of this measure are positive for all SEA topics other than cultural heritage and material assets where no significant effects are expected.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	Option 3: Closing the gap	Improve modified habitat: changes to sediment management maintenance regime	5

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effects	pos.S	This assumes that change to sediment management regime is designed to improve morphological conditions. Disposal of sediment (if required) will need to be in accordance with best practice
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effects for water body where maintenance regime is managed, potentially negative short term effect because of disposal of dredged material	neg./pos.	Mitigation would include appropriate disposal of removed sediment, including contaminated sediments
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?			
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	May be minor positive effects on flooding, but as these activities likely to be in a harbour, effects are not regarded as significant. May be minor negative effects on energy and greenhouse gas emissions from the energy required to undertake the maintenan
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Positive short-term effect	pos.S	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect		
		Improve degraded sites?	Negative short-term effect if disposal of sediment/contaminated sediment is not in accordance with best practice	neg.S	Mitigation would include appropriate disposal of removed sediment, including contaminated sediments
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiverity, water and material assets, positive and negative for population & human health, negative for soils and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Historical engineering activities & urban development (regulatory)	Option 3: Closing the gap	Restoration policy for taking forward restoration work	6

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Asssessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	?	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	?	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	?	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	?	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	?	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	?	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	?	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	?	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Insufficient information to make a judgement.					

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Agriculture (regulatory)	Option 3: Closing the gap	Restoration investment to remove abandoned structures such as old embankments	7

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent with the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	Mitigation required to deal with waste and removal damage
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan obiectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?	No significant effect		
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	Negative effects can be identified in the IA
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Positive short-term effect	pos.S	
		Prevent the deterioration of water bodies from point source and diffuse pollution?	No significant effect		
		Prevent the physical deterioration of water bodies ?	Positive short-term effect		
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Positive or negative effect on flood risk depending on the structure	neg./pos.	Impact can be mitigated by local study of the effects
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?	Positive short-term effect		
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?	No significant effect		
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	Removal of engineering structure may produce local positive or negative impacts on landscape value depending on nature of structure, but not considered significant
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: Generally the effects of this measure are positive for biodiversity,population and human and water, positive and negative for climate factors and not significant for the remainder of the SEA topics.

Invasive non-native species

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	Option 3: Closing the gap	Possible policy mechanisms: additional programme of work (prevention, control, surveillance)	1
SEA topic	**A. SEA Objective - to what extent will the RBMP...**	**B. Asssessment Criteria - to what extent will the RBMP...**	**C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)**	**D. Significance of the effect?**	**E. Evidence, mitigation, uncertainty**
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Insufficient information to make a judgement	?	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Insufficient information to make a judgement	?	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?			
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	?	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	Insufficient information to make a judgement	?	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	Insufficient information to make a judgement	?	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	Insufficient information to make a judgement	?	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	Insufficient information to make a judgement	?	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	Insufficient information to make a judgement	?	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			
Summary: Insufficient information to make a judgement.					

	Pressure	Sector	Option	Measure	Measure No.
	Alien species	All sectors	Option 3: Closing the gap	Marine Protected Areas (MPA) national commitment to achieving a coherent network of MPAs to preserve biodiversity and socio-economic uses	2

SEA topic	A. SEA Objective - to what extent will the RBMP....	B. Asssessment Criteria - to what extent will the RBMP....	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Short-term positive effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Short-term positive effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect bathing and shellfish protected waters?	No significant effect		
		Protect drinking water protected areas and water abstraction?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate.	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	Insufficient information to make a judgement	-	
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
		Prevent the physical deterioration of water bodies ?			
		Promote efficient and sustainable use of water?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTW's & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: The effects of this measures are likely to be positive for biodiversity & population and human health and no significant for the remainder of the SEA topics

	Pressure	Sector	Option	Measure	Measure No.
	Alien species	All sectors	Option 2: RBMP measures	Alien species regulations to control non-native fish in aquaculture	6

SEA topic	A. SEA Objective - to what extent will the RBMP...	B. Assessment Criteria - to what extent will the RBMP...	C. Nature of the effect (including positive or negative short-, medium-, or long-term effect, permanency of effect, scale of effect and cross-cutting where known)	D. Significance of the effect?	E. Evidence, mitigation, uncertainty
Biodiversity, flora & fauna	1. Protect and, where appropriate, enhance biodiversity, particularly protected areas and protected species	Provide effective protection of 'protected areas' (e.g. SACs, SPAs, SSSIs) defined under the WFD?	Positive short-term effect	pos.S	
		Provide effective protection of designated sites?			
		Contribute to UK Biodiversity Action Plan objectives?			
		Support delivery of biodiversity strategies?			
		Reduce impacts by alien species?			
Population & human health	2. Protect human health in undertaking water management activities	Maintain and enhance access to and use of the water environment?	Positive short-term effect	pos.S	
		Increase tourism and/or improve National Parks			
		Protect drinking water protected areas and water abstraction?	No significant effect		
		Protect bathing and shellfish protected waters?			
Water	3. Prevent deterioration of the status of water bodies. Enhance, water body status (including groundwater) to good status, as appropriate	Reduce the impacts on the ecological condition of water bodies from for example, point source pollution, diffuse source pollution, abstraction and flow regulation, and morphological interventions?	No significant effect	NS	
		Promote efficient and sustainable use of water?			
		Prevent the physical deterioration of water bodies ?			
		Prevent the deterioration of water bodies from point source and diffuse pollution?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management?	No significant effect	NS	
		Contribute to the mitigation of floods and droughts?			
		Reduce vulnerability of communities and the environment to the effects of climate change?			
		Address the potential impacts of climate change on biodiversity?			
		Address the potential impacts of climate change on human use of water (e.g. water yields, abstraction, recreational uses)?			
		Contribute to reducing greenhouse gas emissions from water management activities?			
		Encourage improved energy efficiency?			
Cultural heritage	5. Protect and, where appropriate, enhance the character, diversity and special qualities of cultural heritage in the RBD	Protect and, where appropriate, enhance or restore historic environment features?	No significant effect	NS	
Landscape	6. Protect and, where appropriate, enhance the character, diversity and special qualities of all landscapes in the RBD	Protect and, where appropriate, enhance national designated landscape areas?	No significant effect	NS	
		Protect and, where appropriate, enhance or restore landscape character and quality?			
		Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?			
Material Assets	7. Protect and make most effective use of water management infrastructure	Make most efficient use of water management infrastructure?	No significant effect	NS	
		Protect existing economic infrastructure (e.g. flood defences, ports & harbours, WWTWs & drainage)?			
Soil	8. Protect and, where appropriate, enhance the function and quality of the soil resource in the RBD	Reduce erosion?	No significant effect	NS	
		Improve degraded sites?			
		Protect agricultural land?			
		Safeguard soil quality, quantity and function?			
		Contribute to reducing levels of brownfield, derelict and contaminated land in plan area?			

Summary: The effects of this measure are positive for biodiversity, population & human health, water, landscape, and soils, and not significant on the other SEA topics.

Summaries

Reference/Baseline

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Diffuse pollution	All sectors	Reference/Baseline	1	Reduce diffuse pollution inputs	pos.S	pos.S	pos.S	neg./pos.	NS	neg.S	NS	pos.S	Summary: Generally this measure will have a positive effect on biodiversity, water, soil, and population & human health and a positive and negative effect on climate factors, a negative for landscape and no significant effect on the other SEA topics.
	Agriculture (regulatory)		2	Regulations, guidelines and standards to reduce pollutant loads to water bodies	pos.S	pos.S	pos.S	pos.S	NS	NS	NS	pos.S	Summary: Generally, this measure is positive for biodiversity, water, climate, soils and population and human health and not significant for the other SEA topics.
	Agriculture (non-regulatory)		3	Education, advice & campaign awareness	+	+	+	+	+	+	+	+	Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targeting of awareness raising.
	Agriculture (non-regulatory)		4	Economic incentives for agriculture to reduce diffuse pollution	pos.S	pos.s	pos.S	pos.S	NS	NS	NS	pos.S	Summary: Generally, the effects of this measure will be positive for biodiversity, water, climate, soil and population & human health and not significant for the remainder of the SEA topics.
	Forestry (regulatory)		5	Regulations to reduce diffuse pollution	pos.S	pos.S	pos.S	NS	NS	NS	NS	pos.S	Summary: Generally, this measure is positive for biodiversity, water, soil and population and human health and not significant for the other SEA topics.
	Forestry (non-regulatory)		6	Economic incentives for forestry to reduce diffuse pollution	pos.S	pos.S	pos.S	pos.S	NS	NS	NS	pos.S	Summary: Generally, the effects of this measure will be positive for biodiversity, water, climate, soil and population and human health and not significant for the remainder of the SEA topics.
	Forestry (non-regulatory)		7	Education, advice and campaign awareness	+	+	+	+	+	+	+	+	Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targeting of awareness raising.
	Acidification (regulatory)		8	Controls to reduce the effects of air pollution									Summary: Not assessed.
	Acidification (regulatory)		9	Regulations to reduce the effects of acidification	pos.S	pos.S	pos.S	NS	NS	NS	NS	pos.S	Summary: Generally, this measure is positive for biodiversity, water, soils and population and human health and not significant for the other SEA topics.
	Agriculture (non-regulatory)		10	Emissions Trading Scheme	?	?	?	pos.S	NS	?	NS	NS	Summary: There is insufficient information to make a judgement on the effects of the ETS on biodiversity, population and human health, water and landscape. No significant effect would be expected on cultural heritage, material assets and soil, while it is likely that this measure will have positive effects on climate factors.
	Acidification (non-regulatory)		11	Forests and Water Guidance	+	+	+	+	+	+	+	+	Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targeting of awareness raising.
	Urban development (regulatory)		12	GBRs to reduce urban diffuse pollution	pos.S	pos.S	pos.S	pos.S	NS	NS	NS	pos.S	Summary: Generally this measures will have positive effects for biodiversity, water, climate, soil and population and human health and no significant effect on cultural heritage, material assets and landscape.
	Urban development (non-regulatory)		13	Campaign awareness and best practice to reduce diffuse pollution from urban development	+	+	+	+	+	+	+	+	Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targetting of awareness raising.
	Sea and Coastal transport (not a SWMI issue)		14	Reduce diffuse pollution from sea and coastal transport	+	+	+	+	+	+	+	+	Summary: Not assessed for the Solway Tweed as not a SWMI issue.

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Point source pollution	All sectors	Reference/Baseline	1	Measures to reduce pollution load and increase treatment	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have short-term positive effects on biodiversity, population & human health and water and negative and positive effects on population & human health and climate factors and no significant effect on the other SEA topics.
	All sectors		2	Remediation of sediment and water	neg./pos.	pos.S	neg./pos.	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have positive short-term effects on water and population & human health, positive and negative effects for biodiversity and climate change, but will have no significant effects on the remainder of the SEA topics.
	All sectors		3	Measures to regulate flow to 'naturalise' the flow regime	neg./pos.	pos.S	neg./pos.	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have positive short-term effects on water and population & human health, positive and negative effects for biodiversity and climate change, but will have no significant effects on the remainder of the SEA topics.
	Sewage disposal (regulatory)		4	Measures to reduce impacts from point pollution associated with domestic sewage and industrial effluent	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have short-term positive effects on biodiversity, population & human health and water and negative and positive effects on population & human health and climate factors and no significant effect on the other SEA topics.
	Sewage disposal (non-regulatory)		5	Campaign awareness and best practice to reduce diffuse pollution from sewage disposal	+	+	+	+	+	+	+	+	Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targeting of awareness raising.
	Aquaculture/fish farming (regulatory)		6	CAR aimed at regulating the effects of aquaculture	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have short-term positive effects on biodiversity, population & human health and water and negative and positive effects on population & human health and climate factors and no significant effect on the other SEA topics.
	Aquaculture/fish farming (non-regulatory)		7	Strategic planning and other measures to reduce point source pollution from aquaculture	+	+	+	+	+	+	+	+	Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targeting of awareness raising.
	Manufacturing (regulatory)		8	Regulations and standards to reduce point source pollution from manufacturing	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have short-term positive effects on biodiversity, population & human health and water and negative and positive effects on population & human health and climate factors and no significant effect on the other SEA topics.
	Manufacturing (non-regulatory)		9	Campaign awareness raising to reduce point source pollution from manufacturing	+	+	+	+	+	+	+	+	Summary: It is unlikely that there will be direct effects of the campaign, although there may be significant secondary effects depending on the scale and targeting of awareness raising.
	Refuse disposal activities (regulatory)		10	Measures to reduce point source pollution from landfills	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have short-term positive effects on biodiversity, population & human health and water and negative and positive effects on population & human health and climate factors and no significant effect on the other SEA topics.
	Mining and quarrying (regulatory)		11	Measures to reduce point source pollution from mining and quarrying	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have short-term positive effects on biodiversity, population & human health and water and negative and positive effects on population & human health and climate factors and no significant effect on the other SEA topics.

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Abstraction and flow regulation	All sectors	Reference/Baseline	1	Measures to improve efficiency of water use	pos.S	pos.S	pos.S	pos.S	NS	NS	pos.S	NS	Summary: Generally the effects of this measure are positive for all measures other than cultural heritage, landscape and soils where no significant effect is expected.
	All sectors		2	CAR regulations to minimise impacts on fish migration	pos.S	pos.S	NS	NS	NS	NS	NS	NS	Summary: Generally the effects of this measure are positive for biodiversity and population & human health and not significant for the other SEA topics
	Electricity generation (regulatory)		3	Planning regulations to control abstraction	pos.S	pos.S	pos.S	pos.S	NS	NS	NS	NS	Summary: Generally the effects of this measure will be positive for biodiversity, population & human health, climate factors and water, and not significant for all other SEA topics
	Electricity generation (non-regulatory)		4	Campaign awareness to reduce the impact of abstraction for the electricity generation sector	+	+	+	+	+	+	+	+	Summary: Insufficient information to make a judgement.
	Water supply activities (regulatory)		5	CAR to manage levels of abstraction and use of water	pos.S	pos.S	pos.S	pos.S	NS	NS	NS	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level
	Water supply activities (non-regulatory)		6	Economic incentive to encourage efficient use of water by industry	pos.S	pos.S	pos.S	pos.S	NS	NS	pos.S	NS	Summary: Generally the effects of this measure will be positive for biodiversity population & human health, water, climate factors and material assets, not significant for cultural heritage, landscape and soil.
	Water supply activities (non-regulatory)		7	Campaign awareness to improve efficiency of domestic water use	+	+	+	+	+	+	+	+	Summary: Insufficient information to make a judgement.
	Agriculture irrigation (non-regulatory)		8	Economic incentive to encourage efficient use of water by irrigation	pos.S	pos.S	pos.S	pos.S	NS	NS	pos.S	NS	Summary: Generally the effects of this measure will be positive for biodiversity, population & human health, water, climate factors and material assets, not significant for cultural heritage, landscape and soil.
	Agriculture irrigation (non-regulatory)		9	Campaign awareness to promote efficient water use	+	+	+	+	+	+	+	+	Summary: Insufficient information to make a judgement.

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human health	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Changes to morphology	Historical engineering activities & urban development (regulatory)	Reference/Baseline	1	Planning and development controls to reduce flood risk	pos.S	pos.S	pos.S	pos.S	NS	NS	NS	NS	Summary: Generally the effects of this measure are positive for biodiversity, water, population & human health and climate factors, and have no significant effects on cultural heritage, landscape, material assets and soil.
	Agriculture (regulatory)		2	Planning regulations to reduce the morphological impacts of the agricultural sector	pos.S	pos.S	pos.S	pos.S	NS	NS	NS	NS	Summary: Generally the effects of this measure are positive for biodiversity, water, population & human health and climate factors, and have no significant effects on cultural heritage, landscape, material assets and soil.
	Agriculture (non-regulatory)		3	Economic incentives to reduce morphological impacts of agricultural sector	pos.S	pos.S	pos.S	pos.S	NS	NS	NS	NS	Summary: Generally the effects of this measure are positive for biodiversity, water, population & human health and climate factors, and have no significant effects on cultural heritage, landscape, material assets and soil.
	Agriculture (non-regulatory)		4	Campaign/awareness to reduce morphological impacts	+	+	+	+	+	+	+	+	Summary: Insufficient information to make a judgement.
	Forestry (regulatory)		5	Regulations to reduce the impacts of Forestry on morphology	pos.S	pos.S	pos.S	pos.S	NS	NS	NS	NS	Summary: Generally the effects of this measure are positive for biodiversity, water, population & human health and climate factors, and have no significant effects on cultural heritage, landscape, material assets and soil.
	Forestry (non-regulatory)		6	Economic incentives to reduce the impacts of Forestry on morphology	pos.S	pos.S	pos.S	pos.S	NS	NS	NS	NS	Summary: Generally the effects of this measure are positive for biodiversity, water, population & human health and climate factors, and have no significant effects on cultural heritage, landscape, material assets and soil.
	Forestry (non-regulatory)		7	Campaign awareness/voluntary measures to reduce the impact of Forestry on morphology	+	+	+	+	+	+	+	+	Summary: Insufficient information to make a judgement.
	Land reclamation (regulatory)		8	Planning regulations to reduce the morphological impacts of land reclamation	pos.S	pos.S	pos.S	pos.S	NS	NS	NS	NS	Summary: Generally the effects of this measure are positive for biodiversity, water, population & human health and climate factors, and have no significant effects on cultural heritage, landscape, material assets and soil.
	Land reclamation (non-regulatory)		9	Campaign awareness/voluntary measures to reduce the impact of land reclamation on morphology	+	+	+	+	+	+	+	+	Summary: Insufficient information to make a judgement.

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human health	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Invasive non-native species	Recreation, sporting and cultural activities (regulatory)	Reference/Baseline	1	Planning regulations to reduce the impacts of invasive non-native species	neg./pos.	pos.S	neg./pos.	neg./pos.	NS	pos.S	NS	pos.S	Summary: The effects of this measure are positive for population & human health,landscape and soil, not significant for cultural heritage and material assets and positive and negative for biodiversity, climate factors and water
	Recreation, sporting and cultural activities (non-regulatory)		2	Campaign awareness to reduce the impact of invasive non-native species	+	+	+	+	+	+	+	+	Summary: Insufficient information to make a judgement.
	All sectors		3	Measures to control the exploitation of salmon and sea trout	pos.S	NS	NS	NS	NS	NS	NS	NS	Summary: The effect of this measure is positive for biodiversity and not significant for all other SEA topics

Draft RBMP

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human health	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Diffuse pollution	All sectors	Draft RBMP	1	Reduce diffuse source inputs: non-urban land management issues	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	pos.S	Summary: The effects of this measure are positive for biodiversity, water, soil and population & human health, positive and negative for climate factors and not significant for the other SEA topics.
	All sectors		2	Reduce diffuse source inputs: provide first time sewerage	pos.S	pos.S	pos.S	neg./pos.	NS	neg.S	NS	NS	Summary: Generally the effects of this measure are positive for biodiversity and water, negative and positive for climate factors, not significant for cultural heritage, material assests and soils and negative for landscape.
	All sectors		3	Reduce diffuse source inputs: reduce sources from built environment	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	pos.S	Summary: The effects of this measure are positive for biodiversity, water, soil and population & human health, positive and negative for climate factors and not significant for the other SEA topics.
	All sectors		4	Reduce diffuse source inputs: retrofit/improve existing SuDs	pos.S	pos.S	pos.S	pos.S	NS	NS	pos.S	pos.S	Summary: The effects of this measure are positive for biodiversity, water, soil, climate factors, material assets, population & human health and climate factors and not significant for the other SEA topics.
	Agriculture (regulatory)		6	Silage, Slurry and Fuel Oil (SSAFO) Regulation (SSAFO amendments)	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	pos.S	Summary: The effects of this measure are positive for biodiversity, water, soil and population & human health, positive and negative for climate factors and not significant for the other SEA topics.
	Forestry (non-regulatory)		9	Economic incentive: Scottish Rural Development Programmes: 2008-2014 (covers agriculture, forestry, land management)	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	pos.S	Summary: The effects of this measure are positive for biodiversity, water, soil and population & human health, positive and negative for climate factors and not significant for the other SEA topics.
			10	CAR 2005: GBRs require SuDs for new surface water discharges - G&S investment programme, G&S retrofitting of SuDs to industrial areas	pos.S	pos.S	pos.S	neg./pos.	NS	NS	pos.S	pos.S	Summary: The effects of this measure are positive for biodiversity, water, soil, material assets and population & human health, positive and negative for climate factors and not significant for the other SEA topics.
	Agriculture (regulatory)		11	CAR 2005: GBR - diffuse pollution other relevant CAR requirements	pos.S	pos.S	pos.S	neg./pos.	NS	NS	pos.S	pos.S	Summary: Generally, the effects of this measure will be positive for biodiversity, population & human health, water, soil and material assets, negative and positive for climate factors and not significant for the remainder of the SEA topics.
	Agriculture (non-regulatory)		12	SEPA catchment-related activities, CMPs and regional roll-out in areas at risk of not meeting WFD and protected area standards	pos.S	pos.S	pos.S	neg./pos.	NS	pos.S	pos.S	pos.S	Summary: Generally, the effects of this measure will be positive for biodiversity, population & human health, water, soil, landscape and material assets, negative and positive for climate factors and not significant for the remainder of the SEA topics.

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human health	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Point source pollution	All sectors	Draft R BMP	1	IPPC/CAR: reduce at source (where new standards)	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have a positive short-term effect on biodiversity, water and population & human health, positive and negative effects on climate factors and no significant effect on the remaining SEA topics.
	All sectors		2	IPPC/CAR: increase treatment (where new standards)	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have a positive short-term effect on biodiversity, water and population & human health, positive and negative effects on climate factors and no significant effect on the remaining SEA topics.
	All sectors		3	IPPC/CAR: transfer all or part of discharge (where new standards)	neg./pos.	neg./pos.	neg./pos.	neg./pos.	NS	NS	NS	NS	Summary: Generally the effects of this measure positive and negative for biodiversity, flora & fauna, population & human health, water and climate factors and not significant for the remainder of the SEA topics.
	All sectors		4	IPPC/CAR: remediation of sediments and/or water (either by removal or by treating in situ) (where new standards)	neg./pos.	pos.S	neg./pos.	neg./pos.	NS	NS	NS	NS	Summary: Generally the effects of this measure positive and negative for biodiversity, flora & fauna, water and climate factors, positive for population & human health and not significant for the remainder of the SEA topics.
	All sectors		5	IPPC/CAR: change timing or frequency of discharge (where new standards)	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have a positive short-term effect on biodiversity, water and population & human health, positive and negative effects on climate factors and no significant effect on the remaining SEA topics.
	Sewage disposal (regulatory)		6	CAR 2005: waste water discharge to rivers, lochs etc.	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have a positive short-term effect on biodiversity, water and population & human health, positive and negative effects on climate factors and no significant effect on the remaining SEA topics.
	Sewage disposal (regulatory)		9	Scottish Water Charging schemes: provides incentives for industry to reduce the amount of trade effluent they discharge to sewer	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have a positive short-term effect on biodiversity, water and population & human health, positive and negative effects on climate factors and no significant effect on the remaining SEA topics.
	Sewage disposal (regulatory)		10	Habitats Directive review of consents	pos.S	pos.S	pos.S	pos.S	NS	NS	NS	NS	Summary: Generally the effects of this measure will be positive for biodiversity, water and climate factors, positive and negative for population & human health and not significant for all the other SEA topics.
	Sewage disposal (regulatory)		11	Water company AMPs/Quality & Standards	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have a positive short-term effect on biodiversity, water and population & human health and climate factors and no significant effect on the remaining SEA topics.
	Sewage disposal (regulatory)		12	CAR: First time rural sewerage programmes	pos.S	pos.S	pos.S	neg./pos.	NS	neg.S	NS	NS	Summary: Generally the effects of this measure are positive for biodiversity and water, negative and positive for climate factors, not significant for cultural heritage, material assets and soils and negative for landscape.
	Aquaculture/fish farming (regulatory)		13	CAR 2005: rate or scale of discharges arising from fish farms	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have a positive short-term effect on biodiversity, water and population & human health, positive and negative effects on climate factors and no significant effect on the remaining SEA topics.
	Manufacturing (regulatory)		14	CAR 2005: Priority substances (2008)	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have a positive short-term effect on biodiversity, water and population & human health, positive and negative effects on climate factors and no significant effect on the remaining SEA topics.

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Abstraction and flow regulation	All sectors	Draft RBMP	1	CAR control abstraction: use alternative source/relocate abstraction	neg./pos.	neg./pos.	neg./pos.	neg./pos.	NS	NS	neg.S	NS	Summary: Generally the effects of this measure are negative on material assets, not significant on cultural heritage, landscape and soils, but potentially positive or negative on all other SEA topics depending on whether the water body benefits from the measure (current) or is the receiving water body.
	All sectors		2	CAR control abstraction: improve water efficiency (e.g. abstraction matches need) or reduce need	pos.S	pos.S	pos.S	pos.S	NS	NS	pos.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water, climate factors and material assets, and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
	All sectors		3	CAR control abstraction: reduce leakage	pos.S	pos.S	pos.S	pos.S	NS	NS	pos.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water,climate factors and material assets,and not significant on the remainder of the SEA topics.
	All sectors		4	CAR control abstraction: control pattern/timing of abstraction (hands-off flow/utilisation of storage)(new/existing))	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, climate factors and water, negative on material assets. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
	All sectors		5	CAR control abstraction: reduce risk of fish mortality in intakes or screens	pos.S	NS	NS	NS	NS	NS	NS	NS	Summary: Generally the effects of this measure will be positive on biodiversity, but not significant on the remainder of the SEA topics.
	All sectors		6	CAR control abstraction: provide appropriate baseline flow regime downstream of impoundment	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
	All sectors		7	CAR control abstraction: provide higher flows as appropriate to enable fish migration downstream of impoundment	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
	All sectors		8	CAR control abstraction: provide higher flows as appropriate to maintain/improve habitat downstream of impoundment	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
	All sectors		9	CAR control abstraction: provide for fish access between reservoir and tributaries	pos.S	pos.S	NS	NS	NS	NS	NS	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health and not significant on the remainder of the SEA topics
	All sectors		10	CAR control abstraction: reduce impact on DO levels downstream of impoundment	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
	All sectors		11	CAR control abstraction: reduce impact on temperature conditions downstream of impoundment	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
	All sectors		12	CAR control abstraction: appropriate management of rate and range of artificial drawdown	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
	All sectors		13	CAR control abstraction: appropriate management of seasonal variation of water level changes behind the impoundment	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
	All sectors		14	CAR control abstraction: appropriate baseline flow regime downstream of impoundment	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors,negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
	Electricity generation (regulatory)		15	CAR 2005: SEPA controls on licensed hydropower schemes	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that controls can be undertaken without impacting on the current supply/demand balance, existing entitlements to use water and good ecological status/potential. This will need to be checked at the local level.
	Electricity generation (regulatory)		16	CAR 2005: Fishery (Electricity) Committee advice - fisheries protection via SEPA licences	pos.S	pos.S	NS	NS	NS	NS	NS	NS	Summary: Generally the effects of this measure will be positive on biodiversity and population & human health, and not significant on the remainder of the SEA topics.
	Water supply activities (regulatory)		17	CAR 2005: levels of abstraction, management of dams and efficient use of water	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, water and climate factors, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
	All sectors		19	CAR 2005: SEPA imposes controls on volume of water that can be abstracted and the time over which it can be abstracted, through CAR	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, climate factors and water, negative on material assets and not significant on the remainder of the SEA topics. However, it is important to note that the positive effects are based on the assumption that the CAR controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked at the local level.
	All sectors		20	Revision of Catchment Abstraction Management Strategies	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, climate factors and water, negative on material assets and not significant on the remainder of the SEA topics. It is important to note that the positive effects are based on the assumption that controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked
	Agriculture irrigation (regulatory)		21	Restoring Sustainable Abstraction Programme	pos.S	pos.S	pos.S	pos.S	NS	NS	neg.S	NS	Summary: Generally the effects of this measure will be positive on biodiversity, population & human health, climate factors and water, negative on material assets and not significant on the remainder of the SEA topics. It is important to note that the positive effects are based on the assumption that controls on abstraction can be undertaken without impacting on the current supply/demand balance and existing entitlements to use water. This will need to be checked

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human health	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Changes to morphology	All sectors	Draft RBMP	1	Improve modified habitat: removal of barriers or provision of mechanisms to enable fish migration	pos.S	pos.S	pos.S	pos.S	neg.S	neg./pos.	neg.S	NS	Summary: Generally the effects of this measure are positive for biodiversity, population & human health, water and climate factors, negative for cultural heritage and material assets, positive and negative for landscape and not significant for soils.
	All sectors		2	Improve modified habitat: removal of engineering structures	pos.S	pos.S	pos.S	neg./pos.	neg.S	neg./pos.	neg.S	NS	Summary: Generally the effects of this measure are positive for biodiversity, population & human health and water, negative for cultural heritage and material assets, positive and negative for climate factors and landscape and not significant for soils.
	All sectors		3	Improve modified habitat: improvements to condition of channelbed and/or banks/shoreline	pos.S	pos.S	pos.S	NS	NS	pos.S	NS	pos.S	Summary: Generally the effects of this measure are positive for all measures but climate factors, cultural heritage and material assets where no significant effect is expected.
	All sectors		4	Improve modified habitat: improvements to condition of riparian zone and/or wetland habitats	pos.S	pos.S	pos.S	pos.S	NS	pos.S	NS	pos.S	Summary: Generally the effects of this measure are positive for all SEA topics other than cultural heritage and material assets where no significant effects are expected.
	All sectors		5	Improve modified habitat: changes to sediment management maintenance regime	pos.S	neg./pos.	pos.S	NS	NS	NS	pos.S	neg.S	Summary: Generally the effects of this measure are positive for biodiversity, water and material assets, positive and negative for population & human health, negative for soils and not significant for the remainder of the SEA topics.
	Historical engineering activities & urban development (regulatory)		6	CAR 2005: CAR prevent new damage to the water environment from engineering works on rivers (including maintenance regimes)	pos.S	pos.S	pos.S	NS	NS	NS	NS	NS	Summary: The effects of this measure are positive for biodiversity, population & human health and water and not significant for the remainder of the SEA topics.
	Agriculture (regulatory)		9	CAR 2005: CAR prevent new damage to the water environment by engineering works on rivers	pos.S	pos.S	pos.S	NS	NS	NS	NS	NS	Summary: The effects of this measure are positive for biodiversity, population & human health and water and not significant for the remainder of the SEA topics.
	Forestry (regulatory)		10	CAR 2005: CAR prevent new damage to the water environment from engineering works on rivers (including maintenance regimes)	pos.S	pos.S	pos.S	NS	NS	NS	NS	NS	Summary: The effects of this measure are positive for biodiversity, population & human health and water and not significant for the remainder of the SEA topics.

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human health	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Invasive non-native species	All sectors	Draft RBMP	1	Control invasive non-native species: contain to prevent spread	pos.S	pos.S	pos.S	NS	NS	pos.S	NS	pos.S	Summary: The effects of this measure are positive for biodiversity, population & human health, water, landscape, and soils, and not significant on the other SEA topics.
	All sectors		2	Control invasive non-native species: eradicate in situ	neg./pos.	pos.S	neg./pos.	NS	NS	pos.S	NS	pos.S	Summary: The effects of this measure are positive for population & human health, landscape and soils, negative and positive for biodiversity and water, and not significant on the other SEA topics.
	All sectors		3	Control invasive non-native species: capture & remove	neg./pos.	pos.S	neg./pos.	NS	NS	pos.S	NS	pos.S	Summary: The effects of this measure are positive for population & human health, landscape and soils, negative and positive for biodiversity and water, and not significant on the other SEA topics.
	All sectors		4	Control invasive non-native species: prevent introduction	pos.S	pos.S	pos.S	NS	NS	pos.S	NS	pos.S	Summary: The effects of this measure are positive for biodiversity, population & human health, water, landscape, and soils, and not significant on the other SEA topics.
	All sectors		5	Fish Health Directive - limit fish disease & non-native species introductions, audit high risk movements, enforce against illegal activity	pos.S	pos.S	NS	NS	NS	NS	NS	NS	Summary: The effects of this measure are positive for biodiversity and population & human health and not significant on the other SEA topics.
	All sectors		6	Fish Health Directive - limit fish disease & non-native species introductions, audit high risk movements, enforce against illegal activity	pos.S	pos.S	NS	NS	NS	NS	NS	NS	Summary: The effects of this measure are positive for biodiversity and population & human health and not significant on the other SEA topics.

Closing the Gap

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human health	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Diffuse Pollution	Agriculture (non-regulatory)	Closing the Gap	1	Additional investment in catchment related activities and CMPs over successive planning cycles	pos.S	pos.S	pos.S	neg./pos.	NS	pos.S	pos.S	pos.S	Summary: Generally, the effects of this measure will be positive for biodiversity, population & human health, water, soil, landscape and material assets, negative and positive for climate factors and not significant for the remainder of the SEA topics.

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Point source pollution	Sewage disposal (regulatory)	Closing the gap	1	Scottish Government: low P detergents	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally this measure will have a positive short-term effect on biodiversity, population & human health and water, a negative and positive effect on climate factors and no significant effect on the remainder of the SEA topics.

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Changes to morphology	All sectors	Closing the gap	1	Improve modified habitat: removal of barriers or provision of mechanisms to enable fish migration	pos.S	pos.S	pos.S	pos.S	neg.S	neg./pos.	neg.S	NS	Summary: Generally the effects of this measure are positive for biodiversity, population & human health, water and climate factors, negative for cultural heritage and material assets, positive and negative for landscape and not significant for soils.
	All sectors		2	Improve modified habitat: removal of engineering structures	pos.S	pos.S	pos.S	neg./pos.	neg.S	neg./pos.	neg.S	NS	Summary: Generally the effects of this measure are positive for biodiversity, population & human health and water, negative for cultural heritage and material assets, positive and negative for climate factors and landscape and not significant for soils.
	All sectors		3	Improve modified habitat: improvements to condition of channelised and/or banks/shoreline	pos.S	pos.S	pos.S	NS	NS	pos.S	NS	pos.S	Summary: Generally the effects of this measure are positive for all measures but climate factors, cultural heritage and material assets where no significant effect is expected.
	All sectors		4	Improve modified habitat: improvements to condition of riparian zone and/or wetland habitats	pos.S	pos.S	pos.S	pos.S	NS	pos.S	NS	pos.S	Summary: Generally the effects of this measure are positive for all SEA topics other than cultural heritage and material assets where no significant effects are expected.
	All sectors		5	Improve modified habitat: changes to sediment management maintenance regime	pos.S	neg./pos.	pos.S	NS	NS	NS	pos.S	neg.S	Summary: Generally the effects of this measure are positive for biodiversity, water and material assets, positive and negative for population & human health, negative for soils and not significant for the remainder of the SEA topics.
	Historical engineering activities & urban development (regulatory)		6	Restoration policy for taking forward restoration work	+	+	+	+	+	+	+	+	Summary: Insufficient information to make a judgement.
	Agriculture (regulatory)		7	Restoration investment to remove abandoned structures such as old embankments	pos.S	pos.S	pos.S	neg./pos.	NS	NS	NS	NS	Summary: Generally the effects of this measure are positive for biodiversity,population and human and water, positive and negative for climate factors and not significant for the remainder of the SEA topics.

Pressure	Sector	Option	Measure No.	Measure	Biodiversity, flora & fauna	Population & human	Water	Climate factors	Cultural heritage	Landscape	Material Assets	Soil	Summary
Invasive non-native species	All sectors	Closing the gap	1	Possible policy mechanisms: additional programme of work (prevention, control, surveillance)	+	+	+	+	+	+	+	+	Summary: Insufficient information to make a judgement.
	All sectors		2	Marine Protected Areas (MPA) national commitment to achieving a coherent network of MPAs to	pos.S	pos.S	NS	NS	NS	NS	NS	NS	Summary: The effects of this measures are likely to be positive for biodiversity & population and human health and no significant for the remainder of the SEA topics
	All sectors		3	Eel Limitation Orders to control legal exploitation of eels/elver	+	+	+	+	+	+	+	+	Summary: Insufficient information to make a judgement.

APPENDIX E HABITATS DIRECTIVE ASSESSMENT

HABITATS REGULATIONS ASSESSMENT
Screening Assessment

Scotland and Solway Tweed River Basin Management Plans National Measures

October 2008

enfusion

HABITATS REGULATIONS ASSESSMENT
Screening Assessment

Scotland and Solway Tweed River Basin Management Plans
National Measures

date:	14 October 2008	
prepared for:	Scottish Environment Protection Agency (SEPA) and the Environment Agency (EA)	
prepared by:	Toney Hallahan (Enfusion) Ruth Thomas (Enfusion)	
Review & quality assurance:	Barbara Carroll (Enfusion) James Wishart (MWH)	

enfusion
environmental planning and management for sustainability

Treenwood House
Rowden Lane
Bradford on Avon
BA15 2AU
t: 01225 867112
www.enfusion.co.uk

CONTENTS:

1. INTRODUCTION

1.1 This report has been prepared by Enfusion for SEPA/EA to inform the preparation of the Scotland and Solway Tweed (ST) River Basin Management Plans (RBMPs), and to assist in meeting the requirements of the European Habitats Directive and Habitats Regulations (England and Wales) and Habitats Regulations (Scotland). This Habitats Regulations Assessment (HRA) Screening report addresses the likely significant effect on designated European Sites of implementing the policies and proposals of the National measures contained in the RBMPs.

1.2 The purpose of the RBMPs is to set the framework for protecting and enhancing the water environment from 2009 to 2015, with the aim of achieving 'good status' for surface and ground water bodies by 2015, in accordance with the European Water Framework Directive. Specific overarching objectives of the RBMPs are to:

- prevent deterioration and enhance the condition (status) of aquatic ecosystems, including wetlands and groundwater;
- promote sustainable water use;
- reduce pollution;
- contribute to the mitigation of floods and droughts.

1.3 National, regional and local measures are being prepared for the Scotland and Solway Tweed River Basins. This report provides a high level screening assessment of the national Draft RBMP and Closing the Gap measures contained in the two RBMPs, highlighting where further work may be required. This will help to guide the HRA screening of more specific regional and local measures, when further detailed information is available as to the application of those measures.

1.4 Habitats Regulations Assessment is also commonly referred to as Appropriate Assessment (AA) although any requirement for AA is first determined by an initial 'screening' stage.

Requirement for HRA:

1.5 The European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna (the Habitats Directive) protects habitats and species of European nature conservation importance. The Habitats Directive establishes a network of internationally important sites designated for their ecological status. These are referred to as Natura 2000 sites or European Sites, and comprise Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) [which are classified under the Council Directive 79/409/EEC on the conservation of wild birds, the 'Birds Directive'].

1.6 Article 6 (3) of the Habitats Directive require AA to be undertaken on proposed plans or projects which are not directly connected with or necessary for the management of the site but which are likely to have

a significant effect on one or more Natura 2000 sites either individually, or in combination with other plans and projects.[11] This requirement is transposed into law through Regulation 48 of the Habitats Regulations (The Conservation (Natural Habitats, & c.) (England and Wales) Regulations 2004) (as amended) and Regulation 48 of the Conservation (Natural Habitats, & c.) (Scotland) Regulations 1994 (as amended). Government guidance requires that Ramsar sites (which support internationally important wetland habitats) and are listed under the Convention on Wetlands of International Importance (Ramsar Convention 1971) are included within HRA/AA. The regulations require that candidate European sites also be considered.

1.7 In accordance with Article 6 (3) the competent national authorities must agree to the plan or project only after having ascertained that it will not adversely affect the integrity of European sites. The RBMPs for Scotland and the Solway Tweed must therefore be subject to a screening process in order to determine if the plans are likely to have a significant effect on one or more European sites.

1.8 The purpose of HRA/AA is to assess the impacts of a plan or project, in combination with the effects of other plans and projects, against the conservation objectives of a European Site to see if it can be ascertained that it would not adversely affect the integrity[12] of that site. Where this can not be ascertained, alternative options or mitigation measures should be examined to avoid any potential damaging effects. The scope of the HRA/AA is dependent on the location, size and significance of the proposed plan or project and the sensitivities and nature of the interest features of the European sites under consideration.

1.9 The purpose of this report is to determine whether an Appropriate Assessment is required and to guide further assessment of regional and local measures. Broader environmental/ habitats issues that are related to but are not directly implicated in HRA requirements, are referred to in the Strategic Environmental Assessment reports produced alongside the River Basin Management Plans. Where possible, the findings of the SEAs have been considered in undertaking this screening report. [Even if, at the River Basin management stage it can be ascertained that the plan will not adversely affect the integrity of the site further consideration under regulation 48 will be required at each step of the process.]

Deleted: the

[11] Determining whether an effect is 'significant' is undertaken in relation to the designated interest features and conservation objectives of the Natura 2000 sites. If an impact on any conservation objective is assessed as being adverse then it should be treated as significant. Where information is limited the precautionary principle applies and significant effects should be assumed until evidence exists to the contrary. [This reflects the SG guidance – Assessing Development plans …2006 – which states at paragraph 12 "As a guide, any element of a plan which has the potential to affect the interests of the site should initially be considered significant and an appropriate assessment undertaken."]

[12] In England, Integrity is described as the sites' coherence, ecological structure and function across the whole area that enables it to sustain the habitat, complex of habitats and/or levels of populations of species for which it was classified, (ODPM, 2005).

2. SCOTLAND AND SOLWAY TWEED RBDS & EUROPEAN SITES

2.1 With a total of 483 European sites in the two Districts, and given the strategic nature of this exercise, it is not practicable to provide detailed information about individual sites; a summary is provided below and further detailed information is available at the Scottish Natural Heritage website: www.snh.org.uk.

Scotland:	**Solway Tweed:**
240 SACs	27 SACs
152 SPAs	10 SPAs
46 Ramsar sites	8 Ramsar sites

2.2 Following is a description of the 2 River Basin Districts, including general information about the European sites within the RBDs.

Scotland RBD

2.3 The Scotland RBD covers around 113,920 km2 of land and water from Shetland in the north to Glasgow, Ayr and Edinburgh in the south. Around 4.8 million people live in the District, mostly in the central belt between Glasgow and Edinburgh. The landscape is varied – from the mountainous Highlands and the extensive coastline to the urban and industrial areas around Glasgow and Edinburgh. The Highlands are mountain ranges of sandstone and granite, rising to Britain's highest mountain, Ben Nevis. Much of the Scottish uplands are characterised by large tracts of blanket bog which are more extensive in Scotland and Ireland than elsewhere in Europe. The oceanic climate and varied topography of the western Highlands and Islands give rise to a diverse and rich botany. The district supports important habitats and wildlife including 235 water dependent Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).[13]

2.4 Overall, the District has fewer environmental problems than the rest of the UK. However, there are significant environmental problems in parts of the District – in particular around the larger population centres of Glasgow and Edinburgh. Although many large rivers and estuaries, such as the Clyde in the west and the Forth in the east have seen marked improvements over the last 20 years, water quality problems remain. Land use in the north eastern part of the District is largely agricultural, which can give rise to a range of environmental problems including diffuse pollution. The Scotland RBD has a relatively high rainfall in relation to the rest of the UK, particularly in the west. About 90% of drinking water supplies come from surface waters, the remainder from groundwater.

[13] MWH/, Sistech, Enfusion for SEPA/EA (July 2008) Scotland River Basin Management Plan Environmental Report

Solway Tweed RBD

2.5 The Solway Tweed RBD crosses the border between Scotland and England. It covers an area of around 17,500 km2 (3,800 km2 of which falls in England) and has approximately 450,000 people living within its borders. The landscape varies from rolling hills in the Southern Uplands to rocky shorelines and sandy beaches along the west coast. The Southern Uplands are drained by rivers in the west (the Nith, Annan and Esk) which discharge to the Solway Firth estuary. The River Eden rises in the northern Pennines and eastern Lake District fells and flows north to the Solway estuary. The River Tweed drains the eastern part of the District into the Tweed estuary. Land use in the district is mainly agriculture, forestry and woodlands. The rural nature of the District means that it supports important habitats and wildlife, including 36 water-dependent Special Areas of Conservation (SAC) and Special Protection Areas (SPA), notably the River Eden and tributaries and the Solway estuary. The District has a moderately high rainfall relative to the rest of the UK, with rainfall being higher in the west than in the east. Around 90% of the water supply for the District comes from surface waters, the remainder from groundwater.[14]

2.6 HRA requires consideration of all European sites that have the potential to be impacted by the plan, it is not confined to those sites lying within the plan boundary. When undertaking the screening, consideration has been given to whether there are further impact pathways that may result in impacts outside of the plan boundaries. It was considered that this was unlikely, particularly given that plan boundaries are based on river catchments- any downstream impacts would be captured within consideration of the plan.

[14] MWH, Sistech, Enfusion for SEPA/EA (July 2008) Solway Tweed River Basin Management Plan Environmental Report

3. METHOD

Introduction

3.1 The undertaking of HRA of River Basin Management Plans is a new process, and there is no precedent available to inform this work. Likewise, there are few examples of HRA being carried out on high-level strategic plans of this nature. Therefore the development of a method has required an iterative process, informed by the continued development of the RBMPs themselves and discussion with the project team and with SEPAs Conservation Policy team. Experience in undertaking HRA of land use plans across England and Wales, and in undertaking the SEA of the RBMPS in England has helped to inform the process, as have discussions with the Scottish Executive Team undertaking HRA of the Scotland National Planning Framework. Alongside good practice, we have referred to a range of guidance throughout the process; however it was considered that a bespoke method would be required. A list of documents consulted is provided in the reference list at the end of this document.

3.2 Habitats Regulations require the plan making/competent authority to consult the appropriate nature conservation statutory body. Scottish Natural Heritage (SNH) has been informed through contact with the SEPA/ EA Project team and has provided comment on this report. SNH will be consulted on the scope of any additional work required.

Scoping/ initial consideration of potential effects

3.3 In developing the method, an initial stage involved considering the likely effects of a plan of this nature. The main intention of the measures in the RBMPs is to prevent deterioration and enhance the condition of aquatic ecosystems, in line with the Water Framework Directive, whose objectives are closely aligned with the Habitats Directive. Due to these synergies, it was considered that the overall effect of the national RBMP measures on European sites would be positive.

3.4 However, it was considered that there may be instances whereby the measures, or a combination of measures (either alone or in-combination with other plans and programmes) could have potentially significant effects at sites as an unintended consequence of the plan. For example in allowing the natural retreat of a coastline, the result could be inundation or saline flooding of an estuarine site which could adversely affect the conservation objectives of the site. Likewise, physical modifications may lead to changes in water flow which can impact on sites that are sensitive to water-levels. These effects may not only be confined to water-sensitive sites. For example, the fencing of areas and removal of cattle may affect grassland sites dependent on particular grazing regimes.

3.5 This is consistent with the findings of the Strategic Environmental Assessment of the RBMPs, which found that there were likely to be positive and negative effects on biodiversity:

> 'There are a number of measures that have both positive and negative effects on biodiversity, flora & fauna. They include the remediation of water and sediment, regulating the flow regime and reducing the impacts of invasive non-native species. These measures provide benefits in a targeted water body, but could have negative effects in another. For example, while the remediation of sediment and water is generally positive for the water body undergoing remediation (e.g. improves biodiversity, amenity value, ecological condition), there are potential negative effects associated with the disposal of contaminated sediment, while the disturbance of contaminated sediment may release toxic metals into the water body to be carried downstream. Further, while measures to regulate flow in a water body are generally positive for the water body concerned (e.g. improves biodiversity, amenity value and ecological condition), it may require the identification of new sources of supply or an alternative supply source to meet the current demand. The effect of the measure may be to simply shift the locus of the problem to a new area/water body. The negative effects of both of these measures can be largely mitigated by finding an appropriate local/regional solution that considers the entire water cycle such as a Water Cycle Strategy (WCS). '
>
> The national regulatory measures to deal with invasive non-native species in the Solway Tweed RBD are the GB Framework Strategy and Implementation Plans to reduce the impacts of invasive non-native species. The environmental effects of this measure are positive for biodiversity, flora & fauna where the invasive non-native species infestation is being controlled. However, there are risks that areas of new infestation may be created in transporting the invasive non-native species to disposal points, while the use of herbicides to eradicate invasive non-native species may also eradicate native plants if used injudiciously(although this is subject to regulation to avoid such impacts).'[15]

3.6 It was therefore considered that it wasn't possible to state uniformly that all effects of RBMP measures will be positive for all European sites. It was considered that the HRA should instead focus on identifying those measures that have the potential to cause unintended effects and cumulative effects.

3.7 Given the strategic and non-location specific nature of the national measures, it was not considered possible to assess the impact of the measures on specific European sites at this stage. Rather, professional judgement, alongside the findings of the SEA of the measures was used in the assessment to **rule out measures that could not have a possible effect on any European sites** across both the RBDs, regardless of the site's location. The process adopted is described below.

Initial Screening exercise

3.8 A number of the proposed measures are subject to separate licensing activities, for example under CAR (Controlled Activities Regulations). These measures were all screened-in to the assessment. Where such

[15] MWH, Sistech, Enfusion for SEPA/EA (July 2008) Solway Tweed River Basin Management Plan Environmental Report

activities are subject to individual plan or project level HRA this was noted in the final column of the assessment table in Appendix 1.

3.9 The national measures were subject to an initial screen. The aim of this exercise was to identify those measures that will not have an effect on European Sites, leaving a reduced list of measures that may require further assessment. This approach was informed by emerging practice in the AA/HRA of land use plans in the UK.[16] Measures were screened out of the process if they were considered to meet the following criteria:

Criteria A: No-effect measures

3.10 Measures that are considered to have no likely effect, as they will not lead directly to action. These measures may relate to:

- Campaign/awareness raising
- Partnerships/publicity/forums
- Monitoring
- 'Review and assess' measures

Criteria B: Positive measures

3.11 Measures that will lead to an improvement of European sites, with no predicted adverse effects. A range of activities were identified that would result in improved water quality, and would be highly unlikely to yield unintended negative effects. Often these measures related to a reduction of pollutants or sediments at-source. These measures included:

- Measures to reduce point-source or diffuse pollution through controls on supply/use of polluting substances
- Measures that promote sustainable drainage systems
- Measures to reduce sedimentation and other pollution from development/construction impacts
- Measures to reduce pollution from aquaculture
- Measures to reduce source pollution from mining
- Measures that reduce stress on the water environment

3.12 The findings of the Screening for both River Basin Districts are recorded in matrices, listed by sector. A column records whether each measure requires further consideration for HRA, and a further column records a justification for the screening. Where the impacts are unknown, this is also recorded.

[16] The Assessment of Regional Spatial Strategies and Sub-regional strategies under the Provisions of the Habitats Regulations: Draft (David Tyldesley Associate, for English Nature, 2006).

Option 2: RBMP measures	Option 3: Closing the gap	HRA Screen in? Yes , no, or ?	Reason	Is measure already subject to HRA (screened-in measures)?
CAR 2005: **CAR prevent new damage to the water environment from engineering works on rivers (including maintenance regimes)**		**YES**	Licensing activity	Yes-Project level HRA required
FEPA (Food and Environmental Protection Act)		**?**	unclear measure	
Floods Directive: **Development of FRMPs**		**YES**	FRMPs may affect European sites, however these would be subject to HRA	Yes-Plan level HRA required of FRMPs
	Restoration regulations: **new funding frameworks for taking forward restoration work**	**NO**	Funding only- no direct effect	
CAR 2005: **CAR prevent new damage to the water environment by engineering works on rivers**		**YES**	Licensing activity	Yes-Project level HRA required

KEY:	
NO	Screened-out- no further screening or assessment required
YES	Screened-in- further screening or assessment may be required
?	Uncertain- dependent on further detail re: application of measure

Table 1: Excerpt from HRA Screening Assessment Table

Plans and Programs- in-combination effects

3.14 It is a requirement of Article 6(3) of the Habitats Directive that HRA examines the potential for plans and projects to have a significant effect either individually or 'in combination' with other plans, programmes & projects (PPPs). A pragmatic approach to this task is required given the extensive range of PPPs that may affect the European sites within the plan areas. At this screening stage, the key types of plans/projects that have the potential for in-combination

effects have been considered and are listed below. Generally HRA is required of these plans, and the results of available HRAs would help to inform the Appropriate Assessment.
The types of PPPs to be considered in the Appropriate Assessment may include:

Plan, programme or project	**Is HRA required?**
▪ National Planning Framework (Scotland)	Yes, currently underway
▪ Regional Spatial Strategies (England) (North East RSS and North West RSS)	Yes, completed
▪ Energy strategies and projects, for example wind farm proposals	Yes, including project-level HRA
▪ Transport, Minerals and Waste Local Development Frameworks.	Yes
▪ Local Development Frameworks (England) ▪ Regional Structure Plans(Scotland) ▪ Local plans (Scotland)	Yes
▪ Catchment Abstraction Management Plans ▪ Shoreline Management Plans	Yes

4. KEY FINDINGS

4.1 On the whole, the effects of the two River Basin Management Plans on European sites would be overwhelmingly positive, resulting in improved conditions for aquatic ecosystems. The majority of measures for both RBMPs met either Criteria A (would have no effect) or B (were likely to have a positive effect only), therefore no further HRA assessment of these measures is considered necessary. These are listed below:

National RBMP Measures: Screened-out of assessment process.

National Measures assessed as having no potential effects/ no further assessment required:

- Reduce diffuse source inputs: non-urban land management issues
- Reduce diffuse source inputs: reduce sources from built environment
- Reduce diffuse source inputs: retrofit/improve existing SuDs
- CAR 2005: GBR - diffuse pollution
- CAR 2005: GBRs for diffuse pollution
- CAR 2005: GBRs require SuDs for new surface water discharges - Q&S investment programme, Q&S retrofitting of SuDs to industrial areas
- PPC/CAR: reduce at source (where new standards)
- Scottish Water Controls (Water Industry Scotland Act): trade effluent discharges to sewer
- Scottish Government: use of polluting substances in products
- Scottish Government: low P detergents
- Scottish Water Charging schemes: provides incentives for industry to reduce the amount of trade effluent they discharge to sewer
- Habitats Directive review of consents
- Water company AMPs/Quality & Standards
- CAR 2005: rate or scale of discharges arising from fish farms
- CAR 2005: Priority substances (2008)
- Campaign awareness raising and promotion of best practice: HAZREFD - reduce use of hazardous raw materials
- Campaign awareness raising and promotion of best practice: SEPA minimising water pollution
- Non-coal Restoration Regulations: The SG is considering restoration regulations to give SEPA powers to intervene to treat discharge from non-coal mines
- Economic incentive: additional funding for coal authority to treat polluting discharges from coal mines
- Investment programmes: additional funding for SEPA to initiate work to provide treatment for polluting non-coal mines
- CAR control abstraction: reduce leakage
- CAR control abstraction: reduce risk of fish mortality in intakes or screens
- CAR control abstraction: provide higher flows as appropriate to enable fish migration downstream of impoundment
- CAR control abstraction: provide higher flows as appropriate to maintain/improve habitat downstream of impoundment
- CAR control abstraction: reduce impact on DO levels downstream of

impoundment
- CAR control abstraction: reduce impact on temperature conditions downstream of impoundment
- CAR control abstraction: appropriate management of rate and range of artificial drawdown
- CAR control abstraction: appropriate baseline flow regime downstream of impoundment
- CAR 2005 Charging schemes: incentives for efficient water use by industry
- CAR 2005: SEPA imposes controls on volume of water that can be abstracted and the time over which it can be abstracted, through CAR
- Restoration regulations: new funding frameworks for taking forward restoration work
- EIA
- Control alien species: capture & remove
- Control alien species: prevent introduction

Additional national measures applied to Solway Tweed

- CAR 2005: GBR - diffuse pollution, other relevant CAR requirements
- Fish Health Directive - limit fish disease & non-native species introductions, audit high risk movements, enforce against illegal activity
- Alien Species Regulations to control non-native fish in aquaculture
- Promote / encourage uptake of agri-environment schemes in catchments most at risk
- Co-ordination of partnerships and regulatory activities that give advice to / inspect the agricultural sector to ensure activities it is targeted at WFD priority areas
- Review and improve Environmental Flow Indicators
- Investigations to determine cost effective measures to manage abstraction to support Good Ecological Status
- Investigations to determine cost effective measures to manage abstraction to support Good Quantitative Status
- Investigations to determine cost effective measures to manage abstraction to support Good Ecological Status
- Investigations to determine cost effective measures to manage abstraction to support Good Quantitative Status
- Investigations to determine cost effective measures to support Good Ecological Potential
- Revoke unused licences on the Caldew and Lower Eden.
- Retro fitting of rainwater harvesting systems in homes.
- Retro fitting of grey water recycling systems in homes.
- Measures to prevent unacceptable impact on local water environment caused by licenced abstraction
- Modification of abstraction licences to support Good Status (groundwater or surface water)
- Marine Protected Areas (MPAs) (exclusion of specific activities) National commitment to achieving a coherent network of MPAs.
- Eel Limitation Orders will be a means of controlling the legal

exploitation of eel / elver exploitation.
- Removal byelaws for coarse fish create the ability to set minimum and maximum sizes for fish that can be removed. The marine bill includes a proposal to allow maximum sizes of fish to be taken to be set by byelaws.
- Increase in sites requiring fish screening (fish farm intakes & discharge points)
- Increase awareness / education on fish stocking hazards & regulations (IFM Accreditation scheme; fund training etc)
- Audit high risk movements and enforce against illegal activity. From 2010, under new Marine Bill powers Defra plans to introduce a new scheme to regulate fish movements to and from the wild
- Removal of undesirable fish species in partnership with owners/tenants, for example topmouth gudgeon
- Re-stock elvers to catchments – subject to stock status assessment / recommendations in Eel Management Plan

Deleted: removed.The

4.2 For some measures, potential negative effects on European sites were identified, or could not be ruled out (often due to uncertainty in the application of the measure). These are listed in the following table:

National RBMP Measures: Screened-in to assessment process.

Measures having potential effects:
- Reduce diffuse source inputs: provide first time sewerage
- Silage, Slurry and Fuel Oil (SSAFO) Regulation (SSAFO amendments)
- PPC/CAR: increase treatment (where new standards)
- PPC/CAR: transfer all or part of discharge (where new standards)
- PPC/CAR: remediation of sediments and/or water (either by removal

or by treating in situ) (where new standards)
- PPC/CAR: change timing or frequency of discharge (where new standards)
- CAR 2005: waste water discharge to rivers, lochs etc.
- CAR: First time rural sewerage programmes
- CAR control abstraction: use alternative source/relocate abstraction
- CAR control abstraction: improve water efficiency (e.g. abstraction matches need) or reduce need
- CAR control abstraction: control pattern/timing of abstraction (hands off flow/utilisation of storage (new/existing))
- CAR control abstraction: provide appropriate baseline flow regime downstream of impoundment
- CAR control abstraction: provide for fish access between reservoir and tributaries
- CAR control abstraction: appropriate management of seasonal variation of water level changes behind the impoundment
- Improve modified habitat: removal of barriers or provision of mechanisms to enable fish migration

- Improve modified habitat: removal of engineering structures
- Improve modified habitat: improvements to condition of channel/bed and/or banks/shoreline
- Improve modified habitat: improvements to condition of riparian zone and/or wetland habitats
- Improve modified habitat: changes to sediment management maintenance regime
- CAR 2005: CAR prevent new damage to the water environment from engineering works on rivers (including maintenance regimes)
- Floods Directive: Development of FRMPs
- CAR 2005: CAR prevent new damage to the water environment by engineering works on rivers
- CAR 2005: CAR prevent new damage to the water environment by engineering works on rivers

Additional national measures applied to Solway Tweed

- SEPA catchment-related activities: CMPs and regional roll-out in areas at risk of not meeting WFD and protected areas standards
- Additional investment in catchment-related activities and CMPs over successive planning cycles
- Revision of Catchment Abstraction Management Strategies Restoring Sustainable Abstraction Programme
- Future Catchment Sensitive Farming measures includes fencing of buffer strips in capital grants scheme
- Water Protection Zones - unlikely
- Improved flow estimates for surface water bodies and water balances for groundwater bodies
- Removing or adapting barriers to fish passage/migration which fall outside the Restoring Sustainable Abstraction programme

Measures that could not be screened-out due to uncertainty:

- Economic Incentive: Scottish Rural Development Programmes: 2008-2014 (covers agriculture, forestry, land management)
- Economic incentive: SRDP 2008 to 2014
- CAR 2005: SEPA controls on licensed hydropower schemes
- CAR 2005: Fishery (Electricity) Committee advice - fisheries protection via SEPA licences
- CAR 2005: levels of abstraction, management of dams and efficient use of water
- FEPA (Food and Environmental Protection Act)
- Restoration regulations: new restoration regulations would allow investment to remove abandoned structures such as old embankments
- Control alien species: contain to prevent spread
- Control alien species: eradicate in situ

4.2 The detailed screening findings for each measure are provided in Annex 1; a precautionary approach has been adopted, and the list may be refined prior to undertaking further Appropriate Assessment, and once further details are available on some of the measures.

4.3 Whilst many of the measures were screened-out, 30 of the national measures were considered likely to have potential effects, and a further 9 could not be ruled out due to uncertainty. Many of the measures that could not be screened out related to abstraction and flow regulation or changes to morphology. However it is noted that any such measures, when applied on the ground, would require further detailed environmental assessment and likely project-level HRA to address the effects.

4.4 The types of possible effects identified included:

- Potential construction impacts (e.g. for sewerage schemes)- dependent on location/proximity to European sites
- Changes to water levels may negatively affect water-dependent sites
- Potential increase in spread of alien species
- Potential release of sediment into water bodies to be carried downstream with effects on water-dependent sites
- Potential disturbances to habitat structure
- Disturbances of contaminated sediment may release toxic metals into the water body to be carried downstream
- Flood risk measures may affect European sites

5. CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER WORK

5.1 At this strategic level it is not possible to predict or assess with any degree of certainty (particularly where no geographic location is specified) the impacts of the national measures. It has been possible to screen-out measures where there was a high level of certainty that they would have no likely significant effect, either because they would not lead directly to action/s or that any likely significant effects on European sites would certainly be positive. This has allowed the removal of a large number of national measures from further assessment.

5.2 On the whole, the likely effects of the two River Basin Management Plans on European sites were found to be overwhelmingly positive, resulting in improved conditions for aquatic ecosystems. In undertaking the screening assessment of National RBMP measures, 23 measures were considered to have the potential for negative effects, and a further 9 could not be ruled out due to uncertainty. Many of the measures that could not be screened out related to abstraction and flow regulation or changes to morphology. However it is noted that any such measures, when applied on the ground, would require further detailed environmental assessment and likely project-level HRA to address the effects.

5.3 Full AA is only really effective when specific geographic locations are known and the nature of the impact can be tied down in relation to a European site. At higher/ strategic levels the emphasis must be on appropriate [policy] mitigation that avoids the likelihood of effects arising from implementation. Following consultation on the results of this screening report, it is recommended the following further work be undertaken.

National measures

5.4 An Appropriate Assessment of the screened –in National Measures should be undertaken. However due to the strategic and non-location specific nature of the national measures, and the dependency of a number of measures on lower-tier plans and development approval processes, this work may be focused on the provision of mitigation measures and specific recommendations for further HRA work. In particular:

- recommendations to be incorporated when undertaking HRA of lower tier plans, for example Catchment Abstraction Management Plans, Flood Risk Management Plans.

- Recommendations to be incorporated when undertaking project level HRA (for example when implementing measures to improve modified habitat, such as the removal of engineering structures)

5.5 The Appropriate Assessment should use the information contained in the screening table as a starting point for considering potential impacts in further detail.

Regional/local measures

5.6 An HRA screening assessment of the regional and local measures will be required to determine if Appropriate Assessment is required of those measures. However to undertake this work, further detail regarding the application and geographical location and scale of these measures is required.

REFERENCES/ BIBLIOGRAPHY

- David Tyldesley Associates, for English Nature (2006). *The Assessment of Regional Spatial Strategies and Sub-regional strategies under the Provisions of the Habitats Regulations: Draft*
- Department for Communities and Local Government (DCLG, August 2006) (formerly ODPM). *Draft guidance 'Planning for the Protection of European Sites: Appropriate Assessment'.*
- Dodd AM, Cleary BE, Dawkins JS, Byron HJ, Palframan LJ & Williams GM (2007). *The Appropriate Assessment of Spatial plans: a guide to why, when and how to do it.* RSPB, Sandy.
- European Commission (2000). *Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC.*
- Joint Nature Conservation Committee. www.jncc.gov.uk
- Scottish Natural Heritage. www.snh.org.uk
- Scottish Executive (May 2006). *Assessing Development Plans in terms of the need for Appropriate Assessment- Interim Guidance.*
- Scottish Natural Heritage (2006). *Guidance for Competent Authorities when dealing with proposals affecting SAC freshwater sites.*
- Scott Wilson, Levett-Therivel Sustainability Consultants, Treweek Environmental Consultants and Land Use Consultants (August, 2006). *Appropriate Assessment of Plans.*

Annex 1: HRA Screening of National RBMP Measures (Scotland & Solway Tweed)

Pressure	Sector	National measures		HRA		Is measure already subject to HRA (screened-in measures)?
		Option 2: RBMP measures	Option 3: Closing the gap	Screen-in? Yes or no? or ?	Reason	
Diffuse pollution	All sectors	Reduce diffuse source inputs: **non-urban land management issues**		**NO**	Positive measure-reduces pollution at source	
		Reduce diffuse source inputs: **provide first time sewerage**		**YES**	May have construction impacts-dependent on location/proximity to European sites. Potential increase of nutrients/pollutants at discharge points.	Yes, for CAR and Town and Country Planning Regimes
		Reduce diffuse source inputs: **reduce sources from built environment**		**NO**	Positive measure-reduces pollution at source	
		Reduce diffuse source inputs: **retrofit/improve existing SuDs**		**NO**	Positive measure-reduces pollution at source	
	Agriculture (regulatory)	CAR 2005: **GBR - diffuse pollution**		**NO**	Positive measure- reduces pollution at source. GBRs are low level activity with regards environmental impact.	
		Silage, Slurry and Fuel Oil (SSAFO) Regulation (SSAFO amendments)		**YES**	Licensing activity	
	Forestry (regulatory)	CAR 2005: GBRs for diffuse pollution		**NO**	Positive measure- reduces pollution at source. GBRs are low level activity with regards environmental impact.	

	Urban development (regulatory)	CAR 2005: **GBRs require SuDs for new surface water discharges - Q&S investment programme, Q&S retrofitting of SuDs to industrial areas**		**NO**	No effect measure- provided actions are undertaken in accordance with the terms of the GBR. GBRs are low level activity with regards environmental impact.	
Point source pollution	All sectors	PPC/CAR: **reduce at source (*where new standards*)**		**NO**	Positive measure- reduces pollution at source (harm reduction measure).	
		PPC/CAR: **increase treatment *(where new standards)***		**YES**	Licensing activity	Yes- may require project-level HRA
		PPC/CAR: **transfer all or part of discharge *(where new standards)***		**YES**	May impact on water-dependent sites	
		PPC/CAR: **remediation of sediments and/or water (either by removal or by treating *in situ*) (*where new standards)***		**YES**	May impact on water-dependent sites	
		PPC/CAR: **change timing or frequency of discharge *(where new standards)***		**YES**	Licensing activity	?
	Sewage disposal (regulatory)	CAR 2005: **waste water discharge to rivers, lochs etc.**		**YES**	Licensing activity	Yes- requires project-level HRA
		Scottish Water Controls (Water Industry Scotland Act): **trade effluent discharges to sewer**		**NO**	Positive measures-reduces pollution at source	No, although subsequent discharge from treatment works may require HRA
		Scottish Government: **use of polluting substances in products**		**NO**	Positive measure-reduces pollution at source	
			Scottish Government: **low P detergents**	**NO**	Positive measure-reduces pollution at source	

		Scottish Water Charging schemes: **provides incentives for industry to reduce the amount of trade effluent they discharge to sewer**		**NO**	Positive measure-reduces pollution at source	
		Habitats Directive review of consents		**NO**	Positive measure- review of existing consents to ensure compliance	
		Water company AMPs/Quality & Standards		**NO**	Positive measure-will improve water quality	
		CAR: **First time rural sewerage programmes**		**YES**	May have construction impacts-dependent on location/proximity to European sites. Potential increase of nutrients /pollutants at discharge points.	Yes-requires project-level HRA
	Aquaculture/fish farming (regulatory)	CAR 2005: **rate or scale of discharges arising from fish farms**		**NO**	Positive measure-reduces pollution at source	
	Manufacturing (regulatory)	CAR 2005: **Priority substances (2008)**		**NO**	Positive measure-reduces pollution at source	
	Manufacturing (non-regulatory)	Campaign awareness raising and promotion of best practice: **HAZREFD - reduce use of hazardous raw materials**		**NO**	No-effect measure-(campaign/awareness raising)	
		Campaign awareness raising and promotion of best practice: **SEPA minimising water pollution**		**NO**	No effect measure-(campaign/awareness raising)	
	Mining and quarrying (regulatory)		Non-coal Restoration Regulations: T**he SG is considering restoration regulations to give SEPA powers to intervene to treat discharge from non-coal mines**	**NO**	Positive measure-reduces pollution at source	

	Mining and quarrying (non-regulatory)		Economic incentive: **additional funding for coal authority to treat polluting discharges from coal mines**	**NO**	Positive measure-reduces pollution at source	
			Investment programmes: **additional funding for SEPA to initiate work to provide treatment for polluting non-coal mines**	**NO**	Positive measure-reduces pollution at source	
Abstraction and flow regulation	All sectors	CAR control abstraction: **use alternative source/relocate abstraction**		**YES**	Licensing activity	?
		CAR control abstraction: **improve water efficiency (e.g. abstraction matches need) or reduce need**		**YES**	Licensing activity	?
		CAR control abstraction: **reduce leakage**		**NO**	Positive measure-will reduce stress on the water environment	
		CAR control abstraction: **control pattern/timing of abstraction (hands off flow/utilisation of storage (new/existing))**		**YES**	Licensing activity	?
		CAR control abstraction: **reduce risk of fish mortality in intakes or screens**		**NO**	Positive measure-reducing fish mortality	
		CAR control abstraction: **provide appropriate baseline flow regime downstream of impoundment**		**YES**	Licensing activity	
		CAR control abstraction: **provide higher flows as appropriate to enable fish migration downstream of impoundment**		**NO**	Positive measure-will reduce stress on the water environment	
		CAR control abstraction: **provide higher flows as appropriate to maintain/improve habitat downstream of impoundment**		**NO**	Positive measure-will reduce stress on the water environment	

		CAR control abstraction: **provide for fish access between reservoir and tributaries**		**YES**	Yes- may involve physical works with potential consequences for European sites	Yes
		CAR control abstraction: **reduce impact on DO levels downsteam of impoundment**		**NO**	Positive measure-will reduce stress on the water environment	
		CAR control abstraction: **reduce impact on temperature conditions downstream of impoundment**		**NO**	Positive measure-will reduce stress on the water environment	
		CAR control abstraction: **appropriate management of rate and range of artificial drawdown**		**NO**	Positive measure-will reduce stress on the water environment	
		CAR control abstraction: **appropriate management of seasonal variation of water level changes behind the impoundment**		**YES**	May have some implications for European sites, eg. on nesting water birds	
		CAR control abstraction: **appropriate baseline flow regime downstream of impoundment**		**NO**	Positive measure-will reduce stress on the water environment	
	Electricity generation (regulatory)	CAR 2005: SEPA **controls on licensed hydropower schemes**		**?**	Dependent on further detail	
		CAR 2005: **Fishery (Electricity) Committee advice - fisheries protection via SEPA licences**		**?**	Dependent on further detail	
	Water supply activities (regulatory)	CAR 2005: **levels of abstraction, management of dams and efficient use of water**		**?**	Dependent on further detail	
		CAR 2005 Charging schemes: **incentives for efficient water use by industry**		**NO**	Positive measure-will reduce stress on the water environment	

	Agriculture irrigation (regulatory)	CAR 2005: **SEPA imposes controls on volume of water that can be abstracted and the time over which it can be abstracted, through CAR**		**NO**	Positive measure-will reduce stress on the water environment	
Changes to morphology	All sectors	Improve modified habitat: **removal of barriers or provision of mechanisms to enable fish migration**		**YES**	May increase spread of alien species; potential impacts from associated engineering	Yes
		Improve modified habitat: **removal of engineering structures**		**YES**	Potential impacts from associated engineering	Yes
		Improve modified habitat: **improvements to condition of channel/bed and/or banks/shoreline**		**YES**	Improvements to condition of channel/bed may release sediment into the water body to be carried downstream with potential effects on water-dependent sites	?
		Improve modified habitat: **improvements to condition of riparian zone and/or wetland habitats**		**YES**	May result in disturbance to habitat structure- potential for unintended effects	?
		Improve modified habitat: **changes to sediment management maintenance regime**		**YES**	Disturbance of contaminated sediment may release toxic metals into the water body to be carried downstream	?
	Historical engineering activities & urban development (regulatory)	CAR 2005: **CAR prevent new damage to the water environment from engineering works on rivers (including maintenance regimes)**		**YES**	Licensing activity	Yes-Project level HRA required
		FEPA (Food and Environmental Protection Act)		**?**	unclear measure	
		Floods Directive: **Development of FRMPs**		**YES**	FRMPs may affect European sites, however these would be subject to HRA	Yes-Plan level HRA required of FRMPs
			Restoration regulations: **new funding frameworks for taking forward restoration work**	**NO**	Funding only- no direct effect	
	Agriculture (regulatory)	CAR 2005: **CAR prevent new damage to the water environment by engineering works on rivers**		**YES**	Licensing activity	Yes-Project level HRA required
			Restoration regulations: **new restoration regulations would allow investment to remove abandoned structures such as old embankments**	**?**	Dependent on further detail	

Deleted: Improvmeents

	Forestry (regulatory)	CAR 2005: **CAR prevent new damage to the water environment by engineering works on rivers**		**YES**	Licensing activity	Yes-Project level HRA required
			EIA	**NO**	Application of existing process.	
Alien species	All sectors	Control alien species: **contain to prevent spread**		**?**	Dependent on containment measures	
		Control alien species: **eradicate in situ**		**?**	Dependent on eradication measure adopted	
		Control alien species: **capture & remove**		**NO**	Positive measure- control of alien species (through physical means)	
		Control alien species: **prevent introduction**		**NO**	Positive measure- Controlling alien species at source	

	Additional national measures applied to Solway Tweed					
Pressure	**Sector**	**Option 2: RBMP measures**	**Option 3: Closing the gap**	**Screen-in? Yes or no? or ?**	**Reason**	**Is measure already subject to HRA (screened-in measures)?**
		CAR 2005: GBR - diffuse pollution, other relevant CAR requirements		**NO**	Positive measure- reduced pollution at source	
		SEPA catchment-related activities: CMPs and regional roll-out in areas at risk of not meeting WFD and protected areas standards	Additional investment in catchment-related activities and CMPs over successive planning cycles	**YES**	Potential unintended/indirect impacts from range of catchment management activities	Yes, CMPS subject to HRA
		Revision of Catchment Abstraction Management Strategies Restoring Sustainable Abstraction Programme		**YES**	Potential unintended/indirect impacts on water-related sites through changes to flow regimes	Yes, CAMS subject to HRA
		Fish Health Directive - limit fish disease & non-native species introductions, audit high risk movements, enforce against illegal activity		**NO**	Positive measure- will reduce pressure on water environment	
		Alien Species Regulations to control non-native fish in aquaculture		**NO**	Positive measure- will reduce pressure on water environment	
	Till- National measures		Future Catchment Sensitive Farming measures includes fencing of buffer strips in capital grants scheme	**YES**	May impacts on sites dependent on grazing regimes	

			Promote / encourage uptake of agri-environment schemes in catchments most at risk	NO	Positive measure- will reduce stress on water environment	
			Water Protection Zones - unlikely	YES	May have unintended impacts on sites dependent on grazing regimes	
			Co-ordination of partnerships and regulatory activities that give advice to / inspect the agricultural sector to ensure activities it is targeted at WFD priority areas	NO	No-effect measure (coordination/partnerships)	
	Water resources measures	Improved flow estimates for surface water bodies and water balances for groundwater bodies		YES	May have unintended effects	
		Review and improve Environmental Flow Indicators		NO	No-effect measure (unlikely to lead to physical works)	
		Investigations to determine cost effective measures to manage abstraction to support Good Ecological Status		NO	No-effect measure (unlikely to lead to physical works)	
		Investigations to determine cost effective measures to manage abstraction to support Good Quantitative Status		NO	No-effect measure (unlikely to lead to physical works)	
		Investigations to determine cost effective measures to support Good Ecological Potential		NO	No-effect measure (unlikely to lead to physical works)	
		Revoke unused licences on the Caldew and Lower Eden.		NO	Positive measure- will reduce stress on water environment	
			Retro fitting of rainwater harvesting systems in homes.	NO	Positive measure- will reduce stress on water environment	
			Retro fitting of grey water recycling systems in homes.	NO	Positive measure- will reduce stress on water environment	
			Measures to prevent unacceptable impact on local water environment caused by licenced abstraction	NO	Positive measure- will reduce stress on water environment	
			Modification of abstraction licences to support Good Status (groundwater or surface water)	NO	Positive measure- will reduce stress on water environment	

	Fisheries POMs		Marine Protected Areas (MPAs) (exclusion of specific activities) National commitment to achieving a coherent network of MPAs.	NO	Positive measure- will reduce stress on water environment	
			Eel Limitation Orders will be a means of controlling the legal exploitation of eel / elver exploitation..	NO	Positive measure- will reduce stress on water environment	
			Removal byelaws for coarse fish create the ability to set minimum and maximum sizes for fish that can be removed. The marine bill includes a proposal to allow maximum sizes of fish to be taken to be set by byelaws.	NO	Positive measure- will reduce stress on water environment	
		Increase in sites requiring fish screening (fish farm intakes & discharge points)		NO	Positive measure- will reduce stress on water environment	
		Increase awareness / education on fish stocking hazards & regulations (IFM Accreditation scheme; fund training etc)		NO	No effect measure- (campaign/awareness raising)	
		Audit high risk movements and enforce against illegal activity. From 2010, under new Marine Bill powers Defra plans to introduce a new scheme to regulate fish movements to and from the wild		NO	Positive measure- will reduce stress on water environment	
			Removal of undesirable fish species in partnership with owners/tenants, for example topmouth gudgeon	NO	Positive measure- will reduce stress on water environment	
			Re-stock elvers to catchments – subject to stock status assessment / recommendations in Eel Management Plan	NO	Positive measure- will reduce stress on water environment	

Deleted: removed.The

			Removing or adapting barriers to fish passage/migration which fall outside the Restoring Sustainable Abstraction programme	YES	Potential for construction impacts and unintended impacts through increase passage of invasive species	

KEY:	
NO	Screened-out- no further screening or assessment required
YES	Screened-in- further screening or assessment may be required
?	Uncertain- dependent on further detail on measure.

Colour code			
RBMP mechanisms:	Related policy/mechanism:		
Contribute to the 1st RBMP delivery and have been introduced to support meeting WFD objectives (M)	Required under another driver/government policy other than the WFD and viewed as providing significant benefits of co-delivery (note - also likely to be considered as a part of the future baseline) (FB)		
Potentially contributes to RBMP delivery, if approved by government. This has been identified by which cycle it may influence (i.e. RBMP 1, 2, 3) - RBMP GAP (AM)			

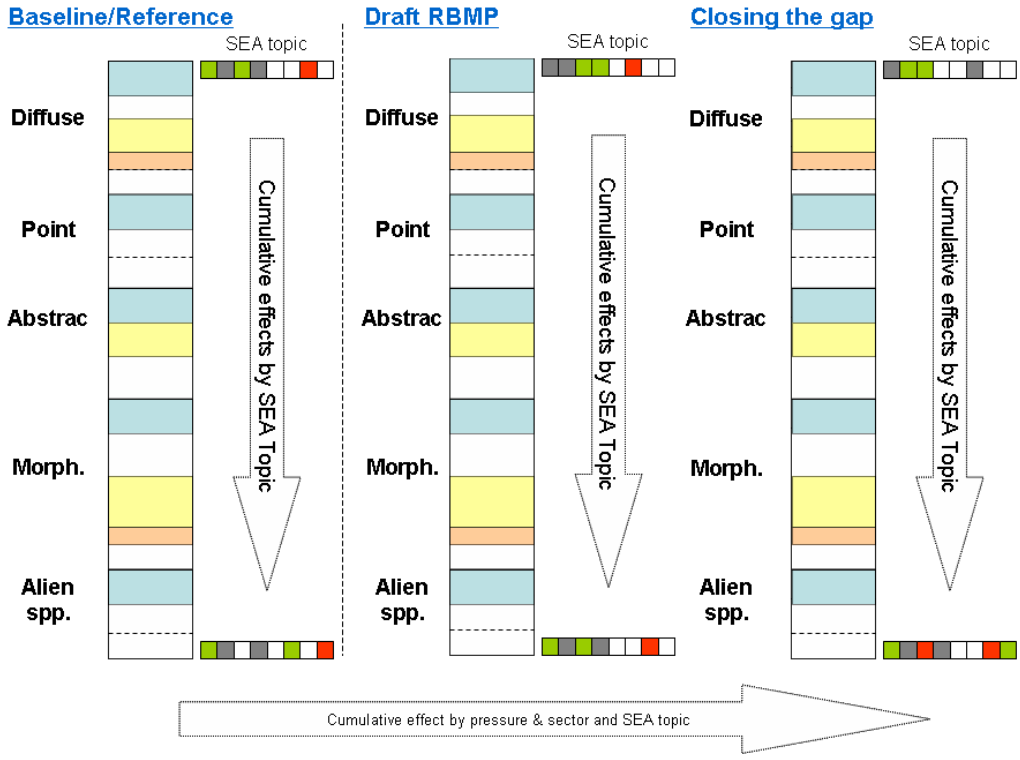
APPENDIX F MEASURES ASSESSMENT BY PRESSURE AND BY SECTOR

1.1. Description of significant environmental effects of measures within the draft RBMP set out by Option and then by pressure and sector

The structure of the draft RBMP (addressing issues through describing pressures and sectors) combined with the SEA framework (considering a range of environmental topics) allows for a number of approaches to interpreting environmental effects.

The assessment by SEA topic is described within Section 5 of the main report. This section, however, is intended to consider the assessment based on how the Plan, and the resulting environmental effects, can be considered within the framework of pressures and sectors which form the framework of the Plan. This is intended to assist plan makers in identifying and responding to issues which may affect a particular sector or geographical area disproportionately.

The figure below shows a conceptual illustration of the ways these considerations can be made.



The vertical arrows illustrate the assessment based on SEA topic. This examines the cumulative effect on each SEA topic (biodiversity, population, cultural heritage etc.) of all the measures within the Baseline/Reference, draft RBMP and Closing the Gap options, and is summarised in Section 5.

It is also possible to consider the cumulative effects on a particular pressure (e.g. point source pollution) when aggregated across the three options (i.e. illustrated by reading horizontally across the figure on page F-1).

Additionally it is possible to consider those measures which are aimed at particular sectors. For example, there are measures aimed at the forestry sector dealing with both morphology and diffuse pollution. It is of use to examine the cumulative effects of all measures which are relevant to forestry (and likewise on other sectors).

The following sections describe the results of the assessment of the national measures for the two options set out by pressure and, where appropriate, by sector. Particular attention is paid to those measures that have a significant negative effect, or have (both) a significant positive *and* negative effect. Positive effects are also identified and summarised where appropriate. The description of the effects is made with reference to the environmental issues outlined in Section 5 and other plans, programmes, strategies and environmental objectives (Appendix C) that they may influence or be influenced by the measure(s). The assessment matrices for Reference/Baseline are presented in Appendix A.

1.1.1. Reference/Baseline

Diffuse pollution

Existing national measures that tackle diffuse pollution from agriculture, forestry, acidification and urban development are key measures for Scotland. Regulations, standards, guidelines and GBR designed to reduce diffuse pollutant inputs (i.e. at source) continue to have a significant positive effect on the District's water body status and biodiversity. Reduced inputs of pollution help control eutrophication in rivers, lakes and estuaries and ameliorate water quality problems during droughts. Riparian fencing and the construction of wetland filtration schemes will contribute to this (positive) effect. The measures also have a significant positive effect on the District's soils by reducing contamination and safeguarding soil quality and function for agriculture and biodiversity. The application and retrofitting of Sustainable Urban Drainage Systems (SuDs) which is a requirement currently in place in Scotland under the WEWS Act[17] helps to reduce runoff and soil erosion has significant benefits for the status of water bodies, and limits long term water infrastructure operating costs.

Non-regulatory measures such as campaigns to improve awareness and to provide guidance and advice on best practice to reduce diffuse pollution inputs also benefit the water environment. However, the effects are likely to be secondary as there is uncertainty as to how these translate into behavioural changes to reduce pollutant inputs. The effects of these non-regulatory measures have been assessed as uncertain and are not considered further in this assessment. The non-regulatory economic incentive measures for the agricultural and forestry sectors to reduce their pollution inputs are likely to have a significant positive effect on the water environment given that there is an incentive to change behaviour. However, the extent of uptake is uncertain and can only be considered retrospectively. The Emissions Trading Scheme which is designed to

[17] http://www.opsi.gov.uk/legislation/scotland/acts2003/asp_20030003_en_1

reduce emissions will contribute to mitigating the effects of climate change; it therefore has a positive significant effect.

The measures to reduce diffuse pollution across sectors are also likely to benefit and protect human health through reducing pollutant loads to protected waters (e.g. drinking water areas, water abstraction areas, bathing and shellfish protected waters), thereby improving biodiversity, increasing amenity value, and improving human access to the water environment. These measures are also likely to contribute to adaptation to climate change based on the assumption that the water environment will be best able to deal with the effects of climate change when pollutant loads are low.

The provision of first time sewerage may, however, have a significant negative on landscapes if the design is not sympathetic to landscape aesthetics, and may also require additional energy consumption and therefore contribute to increased greenhouse gas (GHG) emissions.

Point source pollution

Existing national and regional measures to tackle point source pollution from sewage disposal, aquaculture/fish farming, manufacturing, refuse disposal activities and mining and quarrying are likely to continue the trend in the Scotland RBD of reducing nutrient, chemical and organic material loads entering water bodies from urban and non-urban sources. This has a significant positive effect on biodiversity and the ecological condition of water bodies by limiting eutrophication of rivers, lochs and estuaries, ameliorating water quality problems during droughts, limiting the incidence of metal poisoning of fish, reducing the acidification of sensitive upland water bodies (e.g. wetlands), and mitigating against pollutant transfer and light penetration issues.

The measures to reduce point source pollution across sectors are also likely to benefit and protect human health through reducing pollutant loads to protected waters (e.g. drinking water areas, water abstraction areas, bathing and shellfish protected waters), thereby improving biodiversity, increasing their amenity value, and improving human access to the water environment. These measures are also likely to contribute to the adaptation to climate change based on the assumption that the water environment will be best able to deal with the effects of climate change when pollutant loads are low.

The measures to tackle point source pollution may also have a significant negative effect on climate change through increased GHG emissions (e.g. new sewage treatment works, through treatment processes required to deal with domestic sewage, industrial effluent, manufacturing effluent, mining and quarrying spoil and effluent). The measures may also increase energy consumption; the provision of first time rural sewerage will, for example, require energy for pumping and treatment.

There are two measures that have a range of positive and negative effects in tacking point source pollution. These are the measures to remediate sediment and water, and to regulate flow and ‘naturalise’ the flow regime. Both sets of measures are positive for water bodies they are targeted at. However, they may have potentially negative effects elsewhere. For example, while the remediation of sediment and water is generally positive for the water body undergoing remediation (e.g. improves biodiversity, amenity value, ecological condition), there are potential negative effects associated with the

disposal of contaminated sediment, while the disturbance of contaminated sediment may release toxic metals into the water body to be carried downstream. Further, while measures to regulate flow in a water body are generally positive for the water body concerned (e.g. improves biodiversity, amenity value, ecological condition), it may require the identification of new sources of supply or an alternative supply source to meet the current demand. The effect of the measure may be to simply shift the locus of the problem to a new area/water body. The negative effects of both of these measures can be largely mitigated by finding an appropriate local/regional solution that considers the entire water cycle such as a Water Cycle Strategy (WCS).

Abstraction and flow regulation

Existing national measures to deal with abstraction and flow regulation pressures in the Scotland RBD focus on the electricity generation, water supply and agricultural irrigation sectors. The economic incentive non-regulatory measures targeted at the water supply and agricultural irrigation sectors are focus on improving water use efficiency. These measures have significant positive effects as less water is required for abstraction which means lower pumping and energy costs (and hence contributes to reducing the impact on climate change), while more water is available for aquatic ecosystems. This has significant positive effects for biodiversity, water quality (through dilution), water body status, amenity value, protected water bodies, tourism and so on. The measures are also positive for water supply infrastructure as efficiency savings may delay the requirement for new infrastructure. Existing regulatory measures to control and manage the levels of abstraction and use of water (CAR and planning regulations defined in licences) generally have a positive effect on aquatic ecosystems, water bodies and water quality for the reasons mentioned earlier. However, this assessment is based on the assumption that the controls on abstraction can be undertaken without impacting the supply/demand balance (SDB) and existing entitlements to use water. Where this occurs, water supplies will need to be sourced from elsewhere (or savings made through efficiencies or leakage reductions) which may create negative environmental effects in the new source area.

Changes to morphology

The existing national measures to tackle morphological pressures from historical engineering activities, agriculture, forestry and land reclamation are likely to have similar environmental effects. The regulatory instruments are planning and regulation controls to reduce morphological impacts. While these regulations are likely to have positive effects on morphology, and while it is assumed that these morphological improvements will contribute to improved biodiversity, the links between morphological improvements and enhanced aquatic ecosystem functioning are difficult to prove conclusively. It is likely, however, that morphological improvements will contribute to improving the status of water bodies and, in certain cases, reduce flood risk.

The non-regulatory economic incentive measures for the agricultural and forestry sectors to reduce their morphological impacts are also likely to have significant positive effects on the water environment given that there is an incentive to change behaviour, however the extent of uptake is uncertain.

Invasive non-native species

The national regulatory measures to deal with invasive non-native species in the Scotland RBD is the GB Framework Strategy and Implementation Plans to reduce the impacts of invasive non-native species. The environmental effects of this measure are positive for biodiversity, riparian zones, landscapes and water body status where the invasive non-native species infestation is being controlled. However, there are risks that areas of new infestation may be created in transporting the invasive non-native species to disposal points, while the use of herbicides to eradicate invasive non-native species may also eradicate native plants if used injudiciously. The effects of the non-regulatory awareness campaigns to reduce the impact of invasive non-native species are probably positive, but have been categorised as uncertain for the reasons described earlier.

1.1.2. Draft RBMP

Diffuse pollution

The draft RBMP national and regional measures to tackle diffuse pollution focus on the agriculture, forestry[18] and urban development sectors. The All sector measures to reduce diffuse pollution such as providing first time rural sewerage and retrofitting or improving existing SuDs[19] are all expected to have significant positive effects for aquatic ecosystems, water body status and soils for the reasons mentioned earlier. The continued provision of first time rural sewerage does, however, have a potential negative effect on landscapes if the design of treatment works is not sympathetic to landscape aesthetics. The continued effects of regulatory measures targeting agriculture, forestry and urban development such as GBRs and SSAFO regulations and the fencing of buffer strips in capital grant schemes will have a similar positive effect. Those measures that include the retrofitting and improvement of SuDs have the additional positive benefits of reducing flood risk and potentially extending the design life of other water supply infrastructure.

While the aforementioned measures are expected to benefit and protect human health for the reasons mentioned earlier, they may also have a significant negative effect because of the increased energy use associated with improved treatment and the construction of new treatment works. This is likely to contribute to increased GHG emissions and consequently climate change.

The non-regulatory economic incentive measures (Scottish Rural Development Programmes – SRDP) are likely to have a significant positive effect on the water environment given that there is an incentive to change behaviour. However, there is no way of predicting how it will be taken up, and hence there is uncertainty in this assessment.

Point source pollution

The draft RBMP national regulatory measures to tackle point source pollution from sewage disposal, aquaculture/fish farming and manufacturing are essentially the same

[18] The UK Forestry Guidelines are already in place.
[19] The WEWS Act requires Scottish Water to deliver SuDs as part of its investment programme.

as the Reference/Baseline point source measures, except that new (WFD) standards[20] will be applied. This means that the while the environmental effects of the measures will be similar, or greater (there will be an additional benefit to the water environment and biodiversity because of the tighter standards) additional energy will be required, more GHG will be emitted and potentially more concentrated waste streams generated. It is worth noting that the measure to transfer all or part of a discharge to improve the status of a water body has significant benefits for the said water body, but may have the effect of creating a problem(s) in a different water body (i.e. shift the problem). For this reason the effects of this measure has been categorised as both positive and negative for aquatic ecosystems, water body status and the water environment; positive for the water body from which the problem has been moved, potentially negative for the (new) receiving water body. Further, this measure may make existing water supply infrastructure redundant, and in that sense, have a negative effect.

Abstraction and flow regulation

The national regulatory draft RBMP measures are targeted at the electricity generation, water supply and agricultural irrigation sectors. These draft RBMP measures are designed to control abstraction in the District, manage the releases of water from reservoirs and hydropower schemes and to create efficiency savings. For rivers and estuaries, the measures are designed to increase the volume of water available for aquatic ecosystems, but also to ensure that the provision is at appropriate times during the year. The underlying assumption is that as the flows in rivers move towards a more 'naturalised' state, there will be biodiversity, water quality and amenity benefits which will also contribute to climate change adaptation. Measures that reduce leakage and result in water use efficiency savings will add to this benefit, potentially delaying the requirement for new infrastructure. The effects of these national regulatory measures are therefore mainly positive for aquatic ecosystems, human health, the water environment and climate.

It is important to note, however, that this assessment is based on the assumption that the measures can be undertaken without impacting on the current SDB or hydro generating capacity and existing entitlements to use water. Where the effects of these regulations impinge on existing supply or generating capacity additional sources will need to be found (with the associated environmental risks and additional costs).

It is possible, however, that these measures may have a significant negative effect on existing water supply infrastructure. For example, measures to control the pattern and timing of flows and provide downstream flows for a particular function (e.g. migration, habitat improvement, temperature) may require new reservoir operating rules, potentially reduce the deployable output from reservoirs, reduce power supply and limit downstream abstractions. These may have unintended social and economic consequences. Similarly, measures to manage the rate and range of artificial drawdown and manage the seasonal variation of water levels in impoundments have significant positive effects for lentic (still water) ecosystems, but may have negative effects on deployable output if an appropriate operating solution cannot be found.

[20] Priority Substances and Specific Pollutants. There are no new sediment standards for the WFD.

The measure to use an alternate source or relocate an abstraction point has a variety of positive and negative environmental effects. As with moving an abstraction point to deal with pollution, using an alternate source or relocating the abstraction point to improve the status of a water body has significant benefits for the said water body, but may have the effect of creating a problem in a different water body (i.e. shift the problem). For this reason the effects of this measure has been categorised as both positive and negative for aquatic ecosystems and water bodies; positive for the water body from which the problem has been moved, but potentially negative for the (new) receiving water body. Further, while the measure may contribute to climate change adaptation in one water body, it may exacerbate the effects of climate change in another. There are also potential negative effects if in relocating the abstraction additional infrastructure costs are incurred, energy consumption is increased (e.g. increased pumping and operational requirements) and GHG emissions are greater than before. Further, this measure may make existing water supply infrastructure redundant.

Changes to morphology

The national and regional regulatory draft RBMP measures designed to tackle morphological pressures do not overlap with the Reference/Baseline measures. The first set of measures are to improve modified habitat through the removal of barriers to fish migration (or providing appropriate passages), the removal of engineering structures, improving the condition of the river channel and its riparian strip, and managing the transfer and storage of sediment within channels. It is assumed that in improving the channel boundary conditions there will be concomitant improvements in biodiversity. It can therefore be reasonably assumed that these measures will produce biodiversity benefits, improve the condition of water bodies, soils and the broader landscape, and in so doing increase amenity value, help with climate change adaptation and increase access to the water environment. There are, however, potential negative effects in managing contaminated sediment as mentioned previously; mitigation measures will need to be put in place to manage these effects.

The measures to remove barriers or engineering structures may also have significant negative effects. For example, the removal of barriers may result in the loss of historic water-related features such as weirs, mills, fish traps, artificial ponds, dams and canals, or even potential wetland archaeological sites. This may be perceived by some as a loss to the broader landscape, while others may consider this a benefit that will enhance landscape quality and character, and in so doing improve nationally designated landscape areas. The loss of engineering structures may also negatively impact existing water supply infrastructure, and in some cases increase flood risk. Where the structures provide amenity benefits through creating recreational opportunities for boating or angling, the effects of removing these barriers may be negative for some sectors of the local economy.

Other than the measure that seeks to block moorland grips, the regional Draft RBMP measures are focussed on identifying opportunities to improve morphology, and to establish prevention measures, partnerships and targets for morphological improvement. Again, while these measures are likely to produce environmental benefits, the effects will be secondary and hence the effects have been assessed as uncertain.

Invasive non-native species

The national draft RBMP measures to deal with invasive non-native species in the Scotland RBD are all targeted at controlling invasive non-native species by preventing their spread, eradicating them *in situ*, capture and removal and preventing their introduction. Consequently the environmental effects of these measures are similar to the effects of the regulatory measures in Reference/Baseline.

1.1.3. Closing the Gap

Diffuse pollution

There are no national or regional measures to tackle diffuse pollution for Closing the Gap.

Point source pollution

There is one national regulatory measure to tackle point source pollution for Closing the Gap; a regulatory measure requiring low concentrations of Phosphorus (P) in detergents in Scotland. This measure is in the early stages of development, and hence while it has been assessed as providing significant environmental benefits for biodiversity and water bodies, there is some uncertainty as to its effects. The measure may, however, require additional treatment which may increase energy consumption and GHG emissions.

Abstraction and flow regulation

There are no national or regional measures to tackle abstraction and flow regulation pressures for Closing the Gap.

Changes to morphology

There are a number of national and regional regulatory Closing the Gap measures that are targeted at improving morphological conditions in the Scotland RBD. One set of these measures (aimed at improving modified habitat) are a repeat of Draft RBMP regional measures for morphology, and hence the significant environmental effects will be the same. Similarly, the measure to block moorland grips is a repeat of a Draft RBMP measure, and again, the effects will be the same. There are, however, two additional national regulatory measures. One of them, restoration policy for taking forward restoration work, is likely to have a positive environmental effect, but as this will depend on the measures applied as a result of the funding, the direct strategic effects of this measure have been categorised as uncertain. However, where the regulations provide funding to remove abandoned structures such as old embankments, the effects are likely to be positive for water bodies and biodiversity. However, it may be advisable to assess whether removal of the abandoned structures may increase flood risk.

Invasive non-native species

There is only one Closing the Gap measure for invasive non-native species. The measure is an investment programme that will target key species that may downgrade water body status at 2015. Although it is anticipated that this measure will be targeted at reducing the impact of invasive non-native species in the Scotland RDB, the effects of the measure are uncertain.