APPENDICES

APPENDIX A LIST OF NATIONAL AND REGIONAL MEASURES

Pressure	Sector	National measures			
		Reference / Baseline	Reference/Baseline summary	Draft RBMP	Continued Improvement
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 and other relevant CAR requirements	
		Integrated Pollution Prevention and Control (IIPPC) Regime: **pig & poultry farming**			
		NVZ Action Programmes: **before 2007**			
		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 schemes: **revised PEPFAA guidance (2008)**			
		Campaign/awareness raising and promotion of best practice: **farm advice from NGOs**			
		Campaign/awareness raising and promotion of best practice: **rural services extension programme**	Education, advice & campaign awareness	SEPA catchment-related activities, CMPs and regional roll-out in areas at risk of not meeting WFD and protected area standards	Additional investment in catchment related activities and CMPs over successive planning cycles
		Campaign/awareness raising and promotion of best practice: **rural stewardship schemes**			
		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**			
		Economic Incentive: Scottish Rural Development Programmes: **2008-2014 (covers agriculture, forestry, land management)**			

Pressure	Sector	National measures			
		Reference / Baseline	Reference/Baseline summary	Draft RBMP	Continued Improvement
		Economic incentive: Scottish Rural Development Programmes: **before 2007 (covers agriculture, forestry, land management)**			
	Forestry (regulatory)	CAR 2005: 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**		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	Emission Trading Scheme??		
		Forests and Water Guidelines	Guidance		
	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**	GBRs to reduce urban diffuse pollution		
		CAR 2005: GBRs require SuDs for new surface water discharges - Charging schemes: **drainage charges (surface water draining to sewer)**			
	development (non-t	Campaign/awareness raising: **Scottish Water's technical manual - design requirements for SuDs 2007**	Campaign awareness & best practice to reduce diffuse pollution from urban		

Pressure	Sector	National measures			
		Reference / Baseline	Reference/Baseline summary	Draft RBMP	Continued Improvement
		Voluntary agreements: CFMPs where there are relevant actions within the plan	development		
		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)***	

Pressure	Sector	National measures			
		Reference / Baseline	Reference/Baseline summary	Draft RBMP	Continued Improvement
		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 impacts from point source pollution associated with domestic sewage disposal		
		Scottish Water Controls (Water Industry Scotland Act): **trade effluent discharges to sewer**			
		Scottish Government: **use of polluting substances in products**		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**		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 AMPs/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 NAG 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			

Pressure	Sector	National measures			
		Reference / Baseline	Reference/Baseline summary	Draft RBMP	Continued Improvement
	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)**	
		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**			
	activities	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**			

Pressure	Sector	National measures			
		Reference / Baseline	Reference/Baseline summary	Draft RBMP	Continued Improvement
		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**			
Abstraction and flow regulation	All sectors		Measures to improve efficiency of water use	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: **improve water efficiency (e.g. abstraction matches need) or reduce need**	
		CAR control abstraction: **reduce leakage**		CAR control abstraction: **reduce leakage**	
			CAR regulations to minimise impacts on fish migration	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 control abstraction: **provide for fish access between reservoir and tributaries**	

Pressure	Sector	National measures			
		Reference / Baseline	Reference/Baseline summary	Draft RBMP	Continued Improvement
				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 management of seasonal variation of water level changes behind the impoundment**	
				CAR control abstraction: **appropriate baseline flow regime downstream of impoundment**	
	Electricity generation (regulatory)		Planning regulations to control abstraction	CAR 2005: SEPA **controls on licensed hydropower schemes**	
				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 to reduce the impact of abstraction for the electricity generation sector		
		Campaign/awareness raising and promotion of best practice: **environmental best practice a criterion to be eligible for ROC**			
		Measures delivery plan/voluntary agreements: **voluntary agreements between hydropower companies and interest groups such as anglers**			
		Strategic planning: **map of constraints on hydropower development**			

Pressure	Sector	National measures			
		Reference / Baseline	**Reference/Baseline summary**	**Draft RBMP**	**Continued Improvement**
	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**	Campaign 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**
				Improve modified habitat: **removal of engineering structures**	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 channel/bed and/or banks/shoreline**

Pressure	Sector	National measures			
		Reference / Baseline	Reference/Baseline summary	Draft RBMP	Continued Improvement
				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**
				Improve modified habitat: **changes to sediment management maintenance regime**	Improve modified habitat: **changes to sediment management maintenance regime**
	Historical engineering activities & urban development (regulatory)		Regulations and development controls to reduce flood risk	CAR 2005: **CAR prevent new damage to the water environment from engineering works on rivers (including maintenance regimes)**	
		FEPA (Food and Environmental Protection Act)			
		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**			
					Restoration policy **for taking forward restoration work**
	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 **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**			

Pressure	Sector	National measures			
		Reference / Baseline	Reference/Baseline summary	Draft RBMP	Continued Improvement
		Campaign awareness raising: **SEARS**	Campaign/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/voluntary 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 awareness raising to reduce the impact of land reclamation on morphology		
		Restoration regulations: **develop funding mechanisms to promote managed realignment/retreat (as part of FRMPs)**			

Pressure	Sector	National measures			
		Reference / Baseline	Reference/Baseline summary	Draft RBMP	Continued Improvement
Invasive non-native species	All sectors			Control Invasive non-native species: contain to prevent spread	Possible policy mechanisms: Additional programme of work (prevention, control, surveillance
				Control Invasive non-native species: eradicate in situ	
				Control Invasive non-native species: capture & remove	
				Control Invasive non-native species: prevent introduction	
	sporting and cultural activities	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 awareness 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			
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)
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 regional assessment	Reason
Oil drums marked on sale - numbers tracked Discussions with MCA re waste audit trail. 3-4 boats been given absorbent 'socks' to test - if successful then fisherman's cooperative will be encouraged to sell/promote them. Removal of steel warps (has been successful).	Information only / not strategic
Sheep dip use and disposal controlled by CAR Regulation.	Equates to national level measure
Monitor farm research	Information only / not strategic
Previous project by FWAG/SAC/WLC to reduce agricultural diffuse pollution on the Mains Burn.	Local measure / not strategic
Cattie & Beltie Burn - Fencing	Local measure / not strategic
Cattie & Beltie Burn - Survey	Information only / not strategic
Cattie & Beltie Burn - Recreation of habitat	Local measure / not strategic
Dee - Management agreements with landowners to include fencing and buffer strip creation on Beltie, Cattie, Birse and Sheeoch burns. Agreements in place for 10 years. Approx 34 km to be created. Further round to be undertaken in 07 and locations to be supplied on GIS	Local measure / not strategic
Loch of Strathbeg - Additional work to complement RSPB restoration works at Strathbeg. Likely to involve SNH, SEPA, RSPB	Local measure / not strategic
Loch of Savoch - Catchment project to promote best practice and RDCs to agricultural community	Local measure / not strategic
River Dee - 3 Dee Vision rainfall questionnaire for awareness raising amongst land managers	Local measure / not strategic
River Dee - Forest Management plan in conjunction with Salmon LIFE project. Work has been ongoing over last few years to improve riparian zone. Felling won't be carried out on some steep slopes which had initially been earmarked for clearing as it would cause too much erosion. Also, areas of Norway Spruce close to bankside which won't be felled due to friable banks.	Local measure / not strategic
River Dee, Gormack - Forest management plans in place. Private (Dunecht estate) on west side, National Forest estate on east side, both sides working in collaboration. Riparian habitat improvement work has been carried out recently, mostly complete, just the planting up with broadleaves to be done now.	Local measure / not strategic
River Dee - Burn of Corrichie - Private forest (Dunecht estate), has forest plan which was approved this year. Top end of catchment has 80s spruce plantation which may be shading. Possibility of FC asking for some clearing under LMCs there if need be.	Local measure / not strategic
Q&S IIIb. CCT study - make sure no cross connections, problems. Will help with finding sewage. Question but nb cost effectiveness of this. New pipe system.	Equates to national level measure
SUDS	Equates to national level measure
First time sewerage to be installed in Drum	Local measure / not strategic
Improvements at Greendykes Ind Est SWO and Deans Ind Estate SWO through Q&SIII	Equates to national level measure
Water of Leith (Murray Burn confluence to Estuary) Water of Leith Flood Prevention Scheme will require CAR licence	Local measure / not strategic
Dee - Specific comments included in responses to new applications regarding drainage / effluent/ water quality issues	Not a measure
SUDS Retrofit on surface water outfalls from 3 industrial estates in Glenrothes. Part of Q&SIII.	Equates to national level measure
SUDS Retrofit on surface water discharges from 3 industrial estates in Glenrothes (Southfield, Eastfield and Nether Stenton) as part of Q&SIII	Equates to national level measure
Kinghorn to Leith Docks - International Agreements	Equates to national level measure
Aberdeen Harbour Board - Construction impacts - contract specifications and 1/2 day contractor training to reduce impacts of construction , particularly in relation to times spent piling	Local measure / not strategic
Fraserburgh Harbour - Education campaign with local boat owners, including raising awareness of harbour byelaws at Fraserburgh harbour	Local measure / not strategic
General no deterioration measure - Loch Etive Integrated Coastal Zone Management Plan	Information only / not strategic
Two projects, including replacement of screen and re-introduction of gravity overflow. This will improve outer part of harbour. - NOT ONLY SEWERAGE	Local measure / not strategic
New first time sewerage outfall has been put in at Cairndow	Local measure / not strategic

Measures excluded from regional assessment	Reason
Parsons Mill on Coal Authority priority list (medium risk - 2015-2021), New Carden (not on Coal Authority list), Cluny - Coal Authority not aware of - LISTED AS DIFFUSE POLLUTION IN REGIONAL LIST	Equates to national level measure
Rowan Tree and Carmuirs are on the Coal Authority Priority list as both medium risk (2015-2021) - LISTED AS DIFFUSE POLLUTION IN REGIONAL LIST	Equates to national level measure
On Coal Authority Priority list as Low risk (2021 - 2027). Possible SEPA EIAP to investigate ferruginous discharges. - LISTED AS DIFFUSE POLLUTION IN REGIONAL LIST	Equates to national level measure
On Coal Authority Priority list as a Low risk (2021 - 2027) - LISTED AS DIFFUSE POLLUTION IN REGIONAL LIST	Equates to national level measure
Treatment ponds at Capithall Bing	Local measure / not strategic
Killendean Burn/ Harwood Water - On Coal Authority Priority list as a Low risk (2021 - 2027) - LISTED AS DIFFUSE POLLUTION IN REGIONAL LIST	Equates to national level measure
How Burn - CAR Licence currently held by operator. Promote best mining/quarry practice and treatment where appropriate	Equates to national level measure
Ensure requirement of WFD are included in regeneration work at Inverclyde	Local measure / not strategic
Ensure requirement of WFD are included in regeneration work at Helensburgh regeneration.	Local measure / not strategic
Re water of meander at Dalqurran	Local measure / not strategic
Fish pass and weir restoration on River Ayr	Grouped under single fish pass measure
Best practice SUDS on the Pow Burn	Local measure / not strategic
National Protocol to identify areas of managed woodland and areas of unmanaged woodland	Information only / not strategic
Currently work being undertaken to improve culvert under road in Glamis. More information required. Fish passage being added by Perth and Kinross Council	Grouped under single fish pass measure
Fish pass installed in 2007	Grouped under single fish pass measure
Existing Management Group (Charitable) for areas to the N & E of the reservoir. Current Forest Design Plan to Forest and Water Guidelines	Local measure / not strategic
Water of Leith (Murray Burn confluence to Estuary) Water of Leith Flood Prevention Scheme will require CAR licence - PRESSURE IS FLOODING	Local measure / not strategic
Kinghorn to Leith Docks - Dredging under FEPA - MINING AND QUARRYING	Equates to national level measure
Middle Forth Estuary - Dredging under FEPA -	Equates to national level measure
Middle Forth Estuary - Dredging under FEPA -	Equates to national level measure
Dee - Survey of bank structure and geomorph features for main stem. - NO SECTOR	Information only / not strategic
River Dee - Installation of cobbles / boulders on stream bed at various locations - NO SECTOR	Local measure / not strategic
River Deveron - Irish ford modified to allow fish passage. Electro fishing since has confirmed fish presence above ford`	Grouped under single fish pass measure
River Deveron - Modification of weir at Knock distillery, now passable by fish	Local measure / not strategic
River Deveron, Bogie etc Weir for Glen Keith distillery, upstream of Keith, fish ladder installed`	Grouped under single fish pass measure
River Deveron - Weir modification at Strathisla distillery. Only electro fished once since	Local measure / not strategic
Lag Burn - 2 Irish fords modified to allow fish passage	Grouped under single fish pass measure
Garral Burn - Bridge apron - fish ladder installed	Grouped under single fish pass measure
Check fish passage at Mill weir	Not a measure
River Tyne (Birns Water confluence to estuary) Fish pass installed in 2007	Grouped under single fish pass measure
River Dee - Removal of 7 obstructions to fish passage - grid refs to be supplied	Grouped under single fish pass measure
River Deveron - Removal of dam, subsequent electro fishing to assess damage from dredging and diesel spill	Local application of National measure
Loch Fyne - Maintenance programme for weirs	Local measure / not strategic
Den Burn - Flood study relating to capacity of watercourse - NON REGULATORY	Information only / not strategic
River Dee - Flood study relating to capacity of watercourse - NON REG	Information only / not strategic
Burn of Savoch - Restoration of canalised section through HLF funded project	Local application of national

Measures excluded from regional assessment	Reason
	measure??
Kinglas Estate Management Plan addressing improvements in native planting and regeneration set back from river bank.	Local measure / not strategic
Coppicing of riparian woodland to 60-70% canopy cover on 21km river banks - locations to be supplied on GIS	Local measure / not strategic
Loch glashan Forest restructuring - at least 50% will be restructured by 2015. FC will consider whether further intervention is possible. Replanting with broad leaves for access and amenity.	Local application of national measure
Loch Glashan - Forest restructuring. Some areas already done, others have felling date of 2040. Would consider early felling to 20m buffer strip.	Local application of national measure
Island of Mull Coastal - Conifers to be felled	Local measure / not strategic
Loch Etive - Conifers to be felled	Local measure / not strategic
Argyll multiple locations - Forest restructuring	Multiple instances of local measure
Continual assessment of site - through site condition monitoring Biosecurity Plan	Monitoring only
Spraying of hogweed	Equates to national level measure
Survey has been carried out. Planned spraying carried out annually within DCC area. A new development planned at Baldovie House. Planning conditions could be used to mitigate problem at source.	Local measure / not strategic
Watching brief through photographic records. RSPB & SNH - further discussion of eradication. Salmon in the class room project could include litter issues	Information only / not strategic
National Protocol to identify areas of managed woodland and areas of unmanaged woodland relating to 1a and 1b water bodies. Thus identifying non managed woodland in at risk water bodies which require a management regime.	Information only / not strategic
3 Lochs Project - action plans	Local measure / not strategic
Forest Design Plans	Equates to national level measure
SUDS pond installed upstream of culvert	Local measure / not strategic
Woodland planting scheme at Burnfoot by Woodland Trust	Local measure / not strategic
Water of Leith (Harperrig Reservoir to Poet's Burn confluence) Water of Leith Flood Prevention Scheme will require CAR licence	Local measure / not strategic
Dee - Baseline survey along whole of main stem with sampling points every 100metres (visual inspection of 5 x 1metre plot). More detailed survey in areas of presence. Intermittent presence between Aberdeen and Banchory. Scarce upstream of Banchory	Information only / not strategic
Dee - Site condition monitoring survey for pearl mussel - indicates unfavourable conditions for pearl mussel in terms of population structure and juvenile recruitment. Links to Phosphate levels. Also developer surveys required for most planning applies	Information only / not strategic
Dee - Research project looking at potential impacts of abstraction on Dee protected area status. Work being undertaken by Macaulay.	Information only / not strategic
River Dee - Survey work - redd counts - changing process to get more intensive counts for smaller areas, also assessing penetration to catchment. Check for substantial blockages prior to autumn run`	Information only / not strategic
River Dee - Removal of Whittley fish counter	Local measure / not strategic
Deveron, Bogie and Isla - Annual electro fishing survey work	Information only / not strategic
River Deveron - Scottish Forestry Grant Scheme applications in Fogie area, opposite Aberchirder STW	Not a measure
River Isla - Willow spilling work to support eroded banks	Local measure / not strategic
River Bogie - Willow spilling work to support eroded banks	Local measure / not strategic
River Dee - Biodiversity project at North esplanade and Footdee	Local measure / not strategic

APPENDIX B ENVIRONMENTAL BASELINE

Environmental Baseline

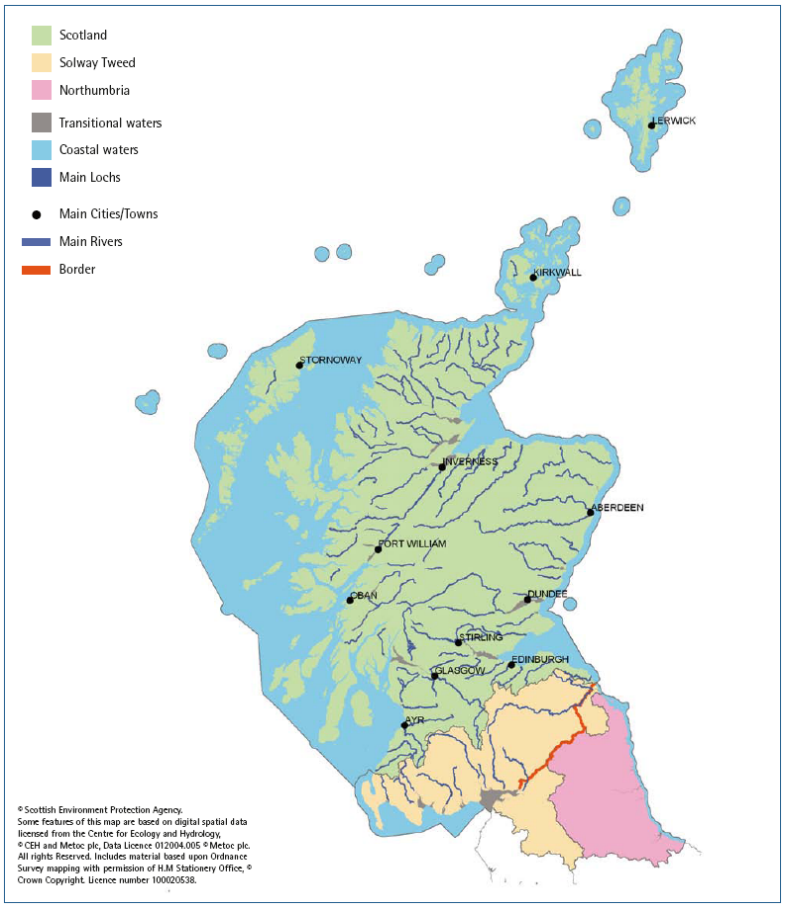
SECTION 1 - INTRODUCTION

1.1 In order to be able to understand the significant environmental effects of the Scotland RBMP it is necessary to set out some basic information about the current environment in the River Basin District (RBD). Given the wide geographic coverage of the Scotland RBD and the range of water related issues the RBMP will touch upon it is not possible to provide this information to a very detailed level. The environmental baseline information presented in this Appendix is to provide an indication as to the breadth and level of assessment contained in the Environmental Report. The information in this appendix has been updated with some additional information since the production of the Scoping Report.

1.2 Further more detailed information, particularly about the water environment and water dependant biodiversity is available in the Significant Water Management Issues (SWMI) Report which was published for consultation on 9 October 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 available in the draft RBMP when published.

1.3 The Scotland RBD covers an area of around 113,920 km^2, from Shetland in the north to Glasgow, Ayr and Edinburgh in the south. The area takes in all the river catchments in Scotland except those feeding into the Solway Firth and Tweed Estuary in the south. Around 4.8 million people live in the RBD, most 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.

Map 1 – Scotland River Basin District



1.4 Overall, the RBD has fewer environmental problems than most others in the UK, although there are specific environmental problems in parts of the RBD, in particular around the larger population centres. 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 RBD is largely agricultural which can give rise to diffuse pollution problems.

1.5 The Scotland RBD has a relatively high rainfall in relation to the rest of the UK, particularly in the west. About 90% of water supplies come from surface waters, the remainder from groundwater. It is the largely clean environment of the RBD that attracts many tourists and supports particular industrial sectors. There are many excellent salmon rivers in the RBD and the generally clean water supports sectors such as fish farming and whisky manufacturers. The RBD supports a significant number of important habitats and wildlife, including 235 water-dependent Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)[1].

[1] Refer to footnotes on page 32 for definitions

SECTION 2 - BIODIVERSITY, FLORA AND FAUNA[2]

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. Scottish 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. Iconic bird species such as ospreys and sea eagles make a multi million pound contribution to the Scottish economy each year.

2.2 Scotland'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 Scotland's ecosystems means that there has been little time for new species to evolve from existing ones. The fauna and flora of Scotland are, therefore, generally characterised by species that have good dispersal abilities or which have arrived from neighbouring geographical areas.

2.3 Scotland's environment supports some 90,000 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 less than 2% of the total. These species inhabit a wide range of habitats; Scotland's climate, geology and physical landscape combining to provide a tremendous variety of natural habitats which have subsequently been altered and modified by human activity. Habitats in the Scottish 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 – of the 159 conservation priority habitats listed in the European Habitats Directive, Scotland has 65. In terms of protected sites, the importance of these areas in a European context is recognised in the designation of 240 SACs[3]. Habitats of international importance include:

- heather moorland;
- upland blanket bogs and lowland raised bogs;
- Atlantic oak woods;
- machair grasslands;
- freshwater and seawater lochs.

2.5 SACs have also been designated to protect a number of key species including the freshwater pearl mussel (Scotland holds 50% of the world population), the otter and the great crested newt.

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[2] *Much of this section is derived from SEPA (2006) Change Tomorrow Today: State of Scotland's Environment. For further details visit: http://www.sepa.org.uk/publications/state_of/2006/main/d_biodiversity.html*

[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.

2.6 Scotland's location and extensive coastline and wetlands make it very important, for migrating wildfowl and for breeding populations of seabirds. Over 140 SPAs[4] have been established in Scotland under the EU Birds Directive to protect the breeding, feeding and roosting habitats of migrating bird species.

2.7 In addition to these European designations, Scotland also has a network of over 1450 Sites of Special Scientific Interest (SSSIs)[5], covering some 13% of Scotland.

2.8 At a UK level, Scotland has 41 of the 45 habitats and 261 of the 391 species identified as priorities for action in the UK Biodiversity Action Plan. In 2005 a list of species and habitats was published (www.biodiversityscotland.gov.uk) identifying those considered by Scotland's Ministers as important for biodiversity conservation in Scotland. It includes 177 terrestrial and freshwater habitats, 197 marine species and habitats, and 1806 terrestrial and freshwater species (including 61 endemic to Scotland).

2.9 A breakdown of all protected sites in the Scotland RBD is provided in table 1 below:

Area Advisory Group	*SSSI*	*SAC*	*SPA*	*NNR*[6]	*Ramsar*[7]
Argyll	***144***	***44***	***21***	***13***	***8***
Clyde	***211***	***20***	***9***	***5***	***2***
Forth	***160***	***13***	***9***	***5***	***5***
North East	***115***	***29***	***22***	***10***	***7***
North Highland	***227***	***46***	***27***	***5***	***9***
Orkney & Shetland	***117***	***18***	***25***	***3***	***2***
Tay	***193***	***25***	***13***	***7***	***8***
West Highland	***168***	***45***	***26***	***12***	***5***
Total	*1335*	*240*	*152*	*60*	*46*

2.9 The Scotland RBMP will play an important role in protecting and enhancing Scotland'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 and estuaries;

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.

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.

- 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 can affect river ecology – e.g. destruction of river habitat;

- 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) and smaller areas of the Cairngorms and the western and central Highlands. Some rivers and lochs across Scotland are showing signs of recovery, but acidification is still causing others to be devoid of acid-sensitive plants, invertebrates and fish.

- Introduction of Alien species which can compete with native flora and fauna and result in a loss of biodiversity.

2.10 Many of Scotland's rivers are designated under the European Directive (78/659/EEC) as freshwater fish protected areas. 14,427km are designated in the Scotland RBD 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.

SECTION 3 - POPULATION

3.1 *Demographic trends*

Approximately 4.8 million people live in the Scotland RBD, with many of these in the central belt in and around Edinburgh and Glasgow. Since the mid 1970's, Scotland's population has generally been decreasing and getting older, caused in the main by a declining birth rate. Net out migration from rural areas is also a significant contributory factor, with the majority of those moving out in the 15 to 34 age bracket. The majority of in-migration, by contrast, is in those 45 and over. Total Scottish population is projected to rise very slightly from its current estimate of 5.10 million to 5.12 by 2024, due mainly to "natural decrease" (deaths exceeding births) being offset by in-migration. By contrast, the number of households is projected to increase by almost 300,000 between 2005 (2.26m) and 2024 (2.54m). This will contribute significantly to the demand for new housing which will in turn have effects on the environment.

3.2 *Settlement patterns and land use*

The Scotland RBD is predominantly rural, with the central belt accommodating much of the urban population. The central belt is characterised by large cities and smaller towns and cities within close proximity to one another. Outwith the central belt, Scotland's land use is predominantly rural and large parts of the north and west are very sparsely populated.

Urban areas cover around 2.2% of the land surface. Glasgow is the largest settlement, with a population of 1.09 million (21% of the country's total population. The most sparsely populated parts are the Western Isles, Shetland, Highland and Argyll and Bute.

Map 2 overleaf shows the distribution of urban and rural areas in Scotland

3.3 **Tourism**

Scotland is a significant tourist destination. In 2002, tourists made over 20 million trips to Scotland, spending £4,494 million (www.visitscotland.org.uk). Of these visitors, 18.5 million were from the UK, although the average length of stay and expenditure was much higher from those from further afield. For both UK and overseas visitors, Edinburgh and the Glasgow were the most visited locations. The high quality environment offered by the Highlands makes this the third most visited destination in the country. This, together with the importance of outdoor leisure activities such as walking and hiking, swimming, nature study, fishing, visiting theme and activity parks, suggests that the quality of the natural environment is a significant and positive element of Scottish tourism. In a survey of French, Spanish and German visitors, 47% of those surveyed stated that landscape, countryside and scenery were the main influence on their choice to holiday in Scotland, with 10% specifically mentioning lochs and rivers (Visit Scotland and SNH, 2002).

3.4 **Human Pressures on Water**

There are a wide range of human pressures on water which can have an impact on water quality. These include diffuse pollution, point source pollution, abstraction, morphological impacts on water bodies and the introduction of alien species. These are detailed in section 5 (water).

3.5 Economic use of water

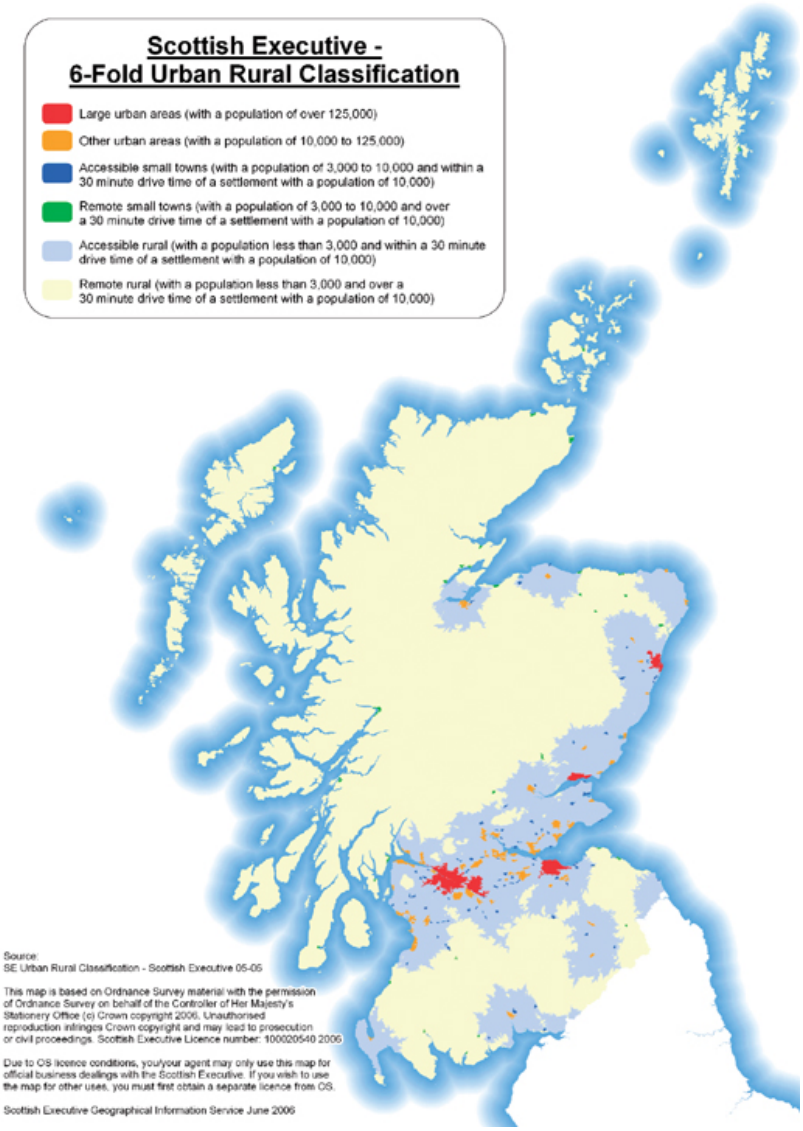
"An economic analysis of water use in the Scotland River Basin District", which is available at: www.sepa.org.uk/pdf/publications/wfd/Article_5_Scotland_River_Basin_economic.pdf, was published by SEPA in 2005 and sets out the key economic activities dependent upon water in the Scotland RBD. These are summarised in section 11 (material assets) but for full details please refer to the report.

3.4 Recreational use of water

There is a wide range of recreational activities that rely on water in the District, including activities 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.

Map 2 – Urban Rural Classification in Scotland



SECTION 4 - HUMAN HEALTH

4.1 Across the Scotland RBD the generally good environmental conditions mean that there are few human health issues attributable to the quality of the environment. There are, however, several aspects of human health which are relevant to the quality of the water environment.

4.2 Bathing Water Quality and Recreational Use of Water

4.2.1 The protection of water contact activities, such as bathing, and recreational water use, such as surfing, are currently controlled by a designation process. Bathing Waters are formally designated under the EU Bathing Water Directive (76/160/EEC), which will remain in force independently of the WFD. Other water use activities along the shores of lochs, coastal or transitional waters are protected by SEPA under the Environment Act (1995) designation as recreational waters. Both designations primarily result in controls over sewage related discharges and SEPA will be developing a work method on the control of microbiological discharges under The Water Environment (Controlled Activities) (Scotland) Regulations 2005.

4.2.2 In 2007, 54 of the 61 identified bathing waters in Scotland met the EU mandatory standards. Of these, 29 waters (28%) also met the guideline standard.

4.2.3 The results for 2007 were not as good as the previous year (2006) when full mandatory compliance was achieved, but this must be considered in the context of the extraordinarily wet weather record through much of Scotland during the bathing season.

4.2.4 Despite the heavy rainfall in 2007, 29 of the 61 bathing waters achieved the highest 'excellent' water quality status. This compares with 34 of 63 beaches making this guideline in 2006 (Note: following applications to the Bathing Water Review Panel made after the 2006 bathing water season three sites were de-designated and one existing bathing water was split into two. This reduced the number of official bathing waters to 61 for 2007).

4.2.5 The full set of microbiological monitoring data from the 61 identified bathing waters in Scotland is summarised below;

Of the 61 identified bathing waters:

- 29 met the guideline quality standards of the Directive and are of 'excellent' quality (48%);
- 25 met the mandatory coliform quality standards of the Directive and are of 'good' quality (41%);
- 7 failed the mandatory coliform quality standards of the Directive and are of 'poor' quality (11%)

4.2.6 The full Scottish Bathing Waters 2007 report can be viewed at http://www.sepa.org.uk/pdf/publications/bathingwaters/2007/bathing_waters_2007.pdf.

4.2.6 The Bathing Water Review Panel has subsequently designated a further 20 sites to be designated for the 2008 bathing water season.

4.3 Drinking water

4.3.1 Water bodies used for the abstraction of drinking water are now included within a new category of protected area under the Water Environment and Water Services (Scotland) Act (2003). Each protected area is an identified surface water body or groundwater body which provides drinking water. Locations of drinking water

protected areas within the Scotland RBD can be seen on the SEPA website at http://www.sepa.org.uk/wfd/register/index.htm.

4.3.2 In many rural areas of Scotland drinking water is supplied from a private abstraction, usually installed and maintained by the householder. Water quality in these abstractions can be variable and may be directly affected by groundwater quality in the area. Contamination of groundwater, in particular by high levels of nitrates, may have an adverse effect on human health through these private abstractions. Numbers of private abstractions vary across the RBD. The total numbers of private abstractions are available per Local Authority area on http://www.scotland.gov.uk/Publications/2006/07/31092205/6 .

4.3.3 A summary of drinking water quality across Scotland is also available at - http://www.scotland.gov.uk/Publications/2006/07/31092205/4

4.4 Shellfish Waters

4.4.1 In Scotland 104 coastal waters are designated 'shellfish growing waters' under the EC Shellfish Waters Directive (79/923/EEC). These waters require protection to ensure the quality and productivity of shellfish, such as mussels and periwinkles and must meet the minimum environmental quality standards, as laid out in the Directive. Map 3 shows the locations of the designated shellfish waters

4.4.2 Discharges of sewage effluent to designated shellfish waters require additional treatment to meet bacteriological standards to ensure that the quality of edible shellfish does not pose a threat to human health. The Food Standards Agency classification results for 2003 shows that over 30% of designated shellfish harvesting waters currently provide Class A products. This is the highest quality standards with only shellfish harvested from Class A waters permitted to go straight on to the market.

Map 3 – Location of designated shellfish waters

4.4.3 In 2002 almost 90% of Scotland's shellfish growing waters complied with the minimum environmental quality standards. However, member states must also work towards achieving guideline quality standards which are more stringent than the minimum standards. In Scotland less than 60% of these waters met the guideline standards in 2002.

4.4.4 In response to the requirements of the Shellfish Waters Directive SEPA has developed a pollution reduction programme for each designated Shellfish Waters in Scotland. The programmes are available on SEPA's website and define a series of actions specific to each designated shellfish growing water, which will be undertaken to ensure protection and compliance with the Directive. The individual pollution reduction programmes for each designated growing water can be found here: www.sepa.org.uk/data/shellfish/sites.asp .

SECTION 5 - WATER

5.1 Overall, water quality across the Scotland RBD is generally good. However the Characterisation Report (2005) and the Significant Water Management Issues Report (2007) identify a number of pressures upon water bodies which may result in some not achieving good status. These pressures are described below with data and information principally drawn from the Significant Water Management Issues report, which is available at: www.sepa.org.uk/consultation/index.htm .

Table 2 Summary of significant water management issues in the Scotland river basin district

Pressure type	Key sectors
Diffuse source pollution	Agriculture Forestry Urban development Sea and coastal water transport
Point source pollution	Collection and treatment of sewage Aquaculture Manufacturing Refuse disposal Mining and quarrying
Abstraction and flow regulation	Electricity generation Public water supplies Agriculture
Changes to morphology	Historical engineering Agriculture Electricity generation Urban development Land claim
Invasive alien species	All sectors

5.2 Pollution (Diffuse and Point Source)

5.2.1 Perhaps the most well-known issue affecting the water environment is pollution. Pollution can threaten the quality of all categories of water and during all parts of the water cycle. 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 plant growth, or even silt that can smother fish spawning beds.

5.2.2 Pollution comes from one of two types of sources:

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

5.3 Diffuse pollution

5.3.1 There are four types of diffuse pollution identified as significant water management issues. Table 3 lists the lengths or areas of water bodies affected by each issue. The number of water bodies is given in brackets.

Table 3 Significant diffuse source pollution issues in the Scotland river basin district

Pressure type	Key sector	Rivers	Lochs	Transitional	Coastal	Groundwater
Diffuse source pollution	Agriculture	4,025 km (313)	143 km^2 (27)	177 km^2 (10)	973 km^2 (16)	16,946 km^2 (129)
	Forestry	652 km (53)	170 km^2 (21)	–	10 km^2 (1)	–
	Urban development	1,044km (88)	1 km^2 (2)	77 km^2 (4)	98 km^2 (2)	–
	Sea and coastal water transport	–	–	129 km^2 (7)	1,031 km^2 (17)	–
	Total	**5,339 km (446)**	**286 km^2 (48)**	**299 km^2 (16)**	**2,052 km^2 (34)**	**16,946 km^2 (129)**

5.3.2 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 release of potential pollutants which individually may not have an impact but together, at the scale of a river catchment, can impact on water quality.

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 and coastal waters, plankton reduces light penetration and affects oxygen levels.
- Organic matter from animal manures, slurries and effluent from livestock feeds (e.g. silage) depletes oxygen levels in rivers. This, together with toxic components such as ammonia, reduces the number of animals and plants that can thrive in our rivers.
- Soil erosion can have a direct physical impact by smothering gravels in rivers and lochs, 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 pose a risk to human health.
- Losses of pesticides and veterinary medicines (including sheep dip) during handling, use and washdown can cause severe impacts on plants and animals in rivers and can affect the quality of drinking water.

Diffuse pollution from agriculture is a significant issue for groundwater, rivers, lochs, transitional and coastal waters (Table 4). It is estimated that nearly half of those water bodies at risk of failing to meet the WFD's environmental objectives by 2015 are affected by diffuse pollution from agriculture. In rivers, diffuse agricultural pollution is now the single most important pollution pressure.

Table 4 Extent of the effect of agricultural diffuse pollution in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of 'at risk' water bodies	Length/area impacted	Number of water bodies
Rivers	✓	4,025 km	313
Lochs	✓	143 km^2	27
Transitional	✓	177 km^2	10
Coastal	✓	9,73 km^2	16
Groundwater	✓	16,946 km^2	129

5.3.3 Diffuse pollution: forestry

Environmental impacts from forestry are generally much lower than those from other land uses such as intensive agriculture or urban development. This is partly a result of much lower levels of fertiliser and pesticide inputs, less intensive cultivation practices and the infrequent and smaller scale nature of management interventions associated with forestry.

In addition, the effective application of codes of good practice has transformed forestry practice over the past 20 years.

The potential risks to water associated with forestry are:

- phosphate input to highly sensitive upland lochs;
- greater scavenging of atmospheric pollutants, which can be significant in extensive, mature forests in upland areas with acid sensitive catchments;
- sediment delivery due to soil disturbance associated with roading, planting and clear felling made worse during heavy rainfall events;
- potential pollution incidents associated with spillages of fuel or chemicals;
- damage to wetlands following drainage of land for forestry;
- damage to the physical structure of rivers due to historic planting too close to them, or poorly sited roads and drainage systems.

Characterisation data show diffuse pollution from forestry to be a significant issue on lochs (Table 5). These data indicate that over a quarter of the lochs at risk of failing to meet the WFD's environmental objectives by 2015 are affected by forestry related activities. These lochs are upland lochs, which are considered to have high ecological status and are very vulnerable to increased nutrient inputs associated with inappropriate afforestation or felling practices. Typically this type of loch is very rare across Europe and they therefore have considerable biodiversity value.

Table 5 Extent of the impact of diffuse pollution from forestry in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✗	652 km	53
Loch	✓	170 km^2	21
Transitional	✗	–	–
Coastal	✗	10 km^2	1
Groundwater	✗	–	–

5.3.4 Diffuse pollution: urban development

Diffuse pollution from urban areas includes the following.

- The main pollutants are toxic metals, oil and other hydrocarbons such as polyaromatic hydrocarbons (PAHs) which are associated with hydrocarbon spills

and especially with the combustion of hydrocarbons. These coat river beds with a toxic film which kills invertebrates and fish.

- Herbicides used to control weeds along roadsides and pavements, and spillages of domestic pesticides kill plants in rivers.
- Pollution can also occur when foul drainage is mistakenly and/or illegally connected to the surface water drainage pipe instead of the foul drain, and therefore is conveyed directly to the nearest watercourse without treatment. This is compounded by waste washed from the streets. The result is bacterial contamination and low oxygen levels caused by the breakdown of organic matter.

The impacts of urban run-off on groundwater are not well understood as there is no groundwater monitoring sites under urban areas. It is currently thought that most pollutants from urban areas adhere rapidly to particles and will therefore be held within the soil.

Diffuse pollution from urban development has been identified as a significant issue on rivers and coastal water bodies (Table 6).

Table 6 Extent of the impact of urban diffuse pollution in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✓	1,044 km	88
Loch	✗	1 km^2	2
Transitional	✗	77 km^2	4
Coastal	✓	98 km^2	2
Groundwater	✗	–	–

There are other impacts of urban run-off which are not associated with pollution. These result from the rapid run-off of rain straight into drains and to rivers. In cities, where water cannot infiltrate because of the extent of impermeable surfaces such as roads and paved areas, the rapid overland run-off causes rivers to rise quickly increasing the risk of flooding. This is a major problem in low-lying urban areas. The speed of the run-off may also have a physical impact on rivers.

5.3.5 Diffuse pollution: sea and coastal water transport

Like many forms of transport, shipping traffic can cause diffuse pollution of our waters. The main impacts caused by shipping are as follows:

- Chemical contamination resulting from the release of antifouling compounds can be toxic or have sub-lethal effects on marine invertebrates. Tributyl tin (TBT) is the main anti-foulant of concern. It is a powerful endocrine disrupter and has been shown to make dog whelks infertile at concentrations below the analytical limit of detection and affect oyster flesh production.
- Oil released from ships can have a toxic or smothering effect on marine invertebrates and plants. Larger vessels such as a container ships or oil tankers take on ballast water when unloading cargo. The process involves pumping seawater into compartments in the hull to maintain the ship's stability. Before the vessels are loaded they discharge the seawater from these compartments. Problems can arise where the ballast water being discharged contains invasive alien species, oils or other chemical contaminants.
- Oil pollution can result from accidents such as the grounding of vessels and from historic ship wrecks.
- Litter from vessels makes a significant contribution to the debris washed on our shores.

Characterisation data indicate that approximately a third of transitional and coastal water bodies at risk of failing to meet the environmental objectives of the WFD are affected by diffuse pollution from sea and coastal water transport (Table 7).

Table 7 Impact of diffuse pollution from sea and coastal water transport in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✗	–	–
Loch	✗	–	–
Transitional	✓	129 km^2	7
Coastal	✓	1,031 km^2	17
Groundwater	✗	–	–

5.4 Point source pollution

This section describes five types of point source pollution identified as significant water management issues. Table 8 lists the lengths or areas of water bodies affected by each issue. The number of water bodies is given in brackets.

Table 8 Significant point source pollution issues in the Scotland river basin district

Pressure type	Key sector	Rivers	Lochs	Transitional	Coastal	Groundwater
Point source pollution	Collection and treatment of sewage	3,015 km (230)	88 km^2 (15)	369 km^2 (14)	2,417 km^2 (34)	–
	Aquaculture	145 km (15)	134 km^2 (23)	–	37 km^2 (3)	–
	Manufacturing	342 km (32)	14 km^2 (1)	190 km^2 (8)	1,279 km^2 (14)	2,460 km^2 (7)
	Refuse disposal	147 km (16)	–	123 km^2 (3)	230 km^2 (2)	4,510km^2 (14)
	Mining and quarrying	363 km (36)	–	–	–	6,428km^2 (14)
	Total	**3,488 km (287)**	**196 km^2 (34)**	**421 km^2 (16)**	**2,250 km^2 (42)**	**9,697 km^2 (29)**

5.4.1 Point source pollution: collection and treatment of sewage

Sewage disposal is a long-standing source of pollution which has progressively improved over the past hundred years. The most serious problems are now associated with the sewers, which often date back to Victorian times. During heavy rain these sewers overflow into rivers causing pollution. During prolonged periods of heavy rain, some sewers back up and contribute to flooding.

Treatment at Sewage Treatment Works (STWs) is designed to remove pollutants. Some of the pollutants are broken down by bacteria to harmless constituents. However, persistent hazardous substances cannot be broken down and either pass through the STW or are removed from the wastewater into the sludge left after the biological treatment. These contaminants then create problems for the reuse of the sludge.

Public sewage treatment works serve 96.3% of the 4.8 million people in the Scotland RBD. The public sewerage system causes most of the impacts associated with wastewater discharge. There are also localised environmental problems in rural areas caused by sewage from scattered houses, small hotels and industry which are typically treated by septic tanks or small treatment works.

Untreated wastewater is polluting.

- The organic matter present removes oxygen from the water killing fish and other aquatic wildlife.
- The nutrients present encourage 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 road run-off in the sewage do not degrade and accumulate within fish and marine mammals.
- Sewage-related debris can affect the amenity value of rivers and beaches. It can also cause damage at treatment works.
- Bacteria and viruses in the sewage can cause health problems with water contact sports such as swimming, canoeing or fishing.

Pollution caused by inadequately treated sewage is the second most important source of river pollution and the most important for transitional and coastal waters. Of Scotland's river, transitional and coastal water bodies at risk of failing to meet the Water Framework Directive's environmental objectives, over a third are affected by point source pollution from the collection and treatment of sewage activities. Table 9 shows the extent of this issue within the RBD.

Table 9 Extent of the impact of point source pollution from collection and treatment of sewage activities in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✓	3,015 km	230
Loch	✗	88 km^2	15
Transitional	✓	369 km^2	14
Coastal	✓	2,417 km^2	34
Groundwater	✗	–	–

5.4.2 Point source pollution: aquaculture

Fish farms have a range of environmental impacts which vary depending on:

- whether the farm is sited in coastal or inland waters;
- whether the fish are produced in cages or within hatchery or tank-based premises.

Licensed discharges from hatcheries are generally treated before release to the river, thus reducing their impact. Waste and effluent from cage fish farms are discharged without treatment. However, hatcheries may affect river flows as a result of the abstraction of water from the river into their premises.

The main impacts of the effluent from fish farm premises are as follows.

- Natural processes break down organic material present (waste food and faeces), reducing oxygen concentrations in the water.
- The organic matter deposited on the seabed leads to significant changes in the animal and plant populations in the vicinity of the fish farm.
- Dissolved nutrients from the food and faeces may result in increased aquatic plant and algal growth. As a result, lochs turn green and face greater risk of algal blooms.
- Chemicals used to treat disease and parasites may have a toxic impact on wildlife in the vicinity of fish farms.

- Diseases, parasites and escapes from fish farms could have an adverse impact on native fish populations.
- Litter and redundant equipment from fish farms contribute to the debris found on Scottish beaches.

The significant water management issue associated with freshwater aquaculture is the input of nutrients into lochs. One fifth of the area of those freshwater loch water bodies at risk of failing to meet the WFD environmental objectives within the Scotland RBD are impacted by point source pollution from fish farms and fish hatcheries (Table 10). These nutrients may cause changes in loch ecology, for example, increased algal production leading to an increased risk of algal blooms. Algal production and algal blooms can be natural seasonal features of water bodies; the important issue is the degree of primary productivity appropriate for specific water bodies. Many upland lochs are considered to have high ecological status and are very vulnerable to increased nutrient inputs. This type of loch is very rare across Europe and they therefore have considerable biodiversity value.

Table 10 Extent of the impact of point source pollution from aquaculture in the Scotland river basin district

Category	Impacts more than 15% length/20% area of at risk water bodies	Length/area impacted	Number of water bodies
River*	✗	145 km	15
Loch	✓	134 km^2	23
Transitional	✗	–	–
Coastal	✗	37 km^2	3
Groundwater	✗	–	–

* *The scale of the effect of fish parasites on migratory salmonids has not been defined and is not included.*

5.4.3 Point source pollution: manufacturing

Inadequately treated industrial discharges can result in the following impacts:

- The high levels of organic matter in the discharges consume oxygen as they degrade, reducing the levels of oxygen in the receiving waters.
- The levels of dissolved metals and hazardous organic chemicals present can have a direct toxic effect on animals and plants.
- Metals and hazardous/persistent organic chemicals can accumulate within the food chain and result in high levels of contaminants in top predators.
- Significant levels of metals and hazardous/persistent organic chemicals contaminate the sediment.

Point source pollution from manufacturing is a significant issue on transitional and coastal water bodies but rivers, lochs and groundwater are also impacted (Table 11). Data indicate that approximately 40% of Scotland's transitional and coastal water bodies at risk of failing to meet the environmental objectives of the Water Framework Directive are affected by point source pollution from manufacturing.

Table 11 Extent of the impact of point source pollution from manufacturing in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✗	342 km	32
Loch	✗	14 km^2	1
Transitional	✓	190 km^2	8
Coastal	✓	1,279 km^2	14
Groundwater	✗	2,460 km^2	7

5.4.5 Point source pollution: refuse disposal

The potentially harmful properties of landfill leachates result from the presence of:

- high levels of ammonia and suspended solids;
- dissolved solids;
- toxic compounds;
- immiscible organic chemicals;
- high chemical/biochemical oxygen demand (COD/BOD);
- high levels of nutrients;
- microbiological contaminants.

Some components of leachates are List I or List II substances under the Groundwater Directive on the basis of their toxicity, bioaccumulation and persistence.

Refuse disposal pressures do not affect groundwater bodies as a whole, but can present localised impacts which are significant where they relate to private drinking water supplies and rivers in close proximity to the site.

Point source pollution from refuse disposal activities is identified as a significant issue for transitional and groundwater bodies in the Scotland RBD. Almost a third of transitional water bodies and just over a fifth of groundwater bodies at risk of failing to meet the WFD environmental objectives (Table 12) are affected by point source pollution from refuse disposal.

Table 12 Extent of the impact of point source pollution from refuse disposal activities in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✘	147 km	16
Loch	✘	–	–
Transitional	✓	123 km^2	3
Coastal	✘	230 km^2	2
Groundwater	✓	4,510 km^2	14

5.4.6 Point source pollution: mining and quarrying

Acid mine drainage (AMD) is a consequence of mining where the excavation of minerals (both metal-bearing and coal) below the natural groundwater table exposes sulphur-containing compounds to oxygen and water. As groundwater flows through the mine after its abandonment, sulphate salts dissolve and this acidic metal-containing mixture forms AMD. The generation of acid mine drainage (AMD) and its discharge to the environment can have serious impacts on the water environment.

As mining in Scotland largely comprised coal and oil shale extraction, the main metal of concern is iron from pyrites (ferrous sulphide) within coal seams and mudstones in coal measures.

With the closure of many coal mines from the 1950s to the 1990s, the discharge of ferruginous waters from disused mines became an environmental problem. As deep mines closed, groundwater pumping stopped or was reduced resulting in the rebound of groundwater within the abandoned workings. Eventually, rising water levels lead to discharges of iron-contaminated water from mine entries, outcrop zones and discharge pipes. Once the mine water reaches the surface and comes into contact with air, a chemical reaction causes the formation of an iron pigment more commonly known as ochre.

The main impacts associated with mining are listed below.

- Existing groundwater that has been polluted by mining activities can no longer be used for drinking water supply or for most industrial purposes.
- Rising iron-rich groundwater can contaminate overlying or adjacent aquifers preventing their use as a source of drinking water or water for industrial processes.
- Rivers may be polluted by mine water flowing from adits and shafts within abandoned mines and through the migration of iron-containing groundwater to surface water as baseflow. These outbreaks can kill most animal life and turn the river bed red, affecting its amenity and recreational value. Due to the location of abandoned mines, it is often rivers in deprived urban areas which are affected.

Approximately 30% of Scotland's groundwater bodies are at risk of failing to meet the environmental objectives of the Water Framework Directive due to pollution from mining and quarrying. Point source pollution from mining and quarrying also impacts 363 km of rivers (Table 13).

Table 13 Extent of the impact of point source pollution from mining and quarrying in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✗	363 km	36
Loch	✗	–	–
Transitional	✗	–	–
Coastal	✗	–	–
Groundwater	✓	6,428 km^2	14

5.5 Abstraction and flow regulation

5.5.1 Abstraction of too much water can be a problem for both groundwater and surface waters. If we remove too much water for drinking or commercial processes, 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 Dams or weirs, which modify or regulate flow regimes, are often built to support the water abstraction itself; they too can cause problems to waters downstream. In some cases, compensation flows are not provided below dams and the river runs dry. In addition, fish migration over dams may be restricted.

5.5.3 The significant issues relating to abstraction and flow regulation pressures on the water environment in the Scotland RBD are listed in Table 14

Table 14 Significant water resource issues in the Scotland river basin district

Pressure type	Key sector	Rivers	Lochs	Transitional	Coastal	Groundwater
Abstraction and flow regulation	Electricity generation	1,451 km (130)	279 km^2 (45)	48 km^2 (2)**	–	–
	Water supply	1,112 km (89)	192 km^2 (42)	–	–	–
	Agricultural irrigation	833 km (116)*	2 km^2 (1)*	–	–	2,068 km^2 (17)
	Total	**3,971 km (359)***	**362 km^2 (85)***	**48 km^2 (2)****	**–**	**2,068 km^2 (17)**

** Data from new licences provide more up-to-date information than Water Framework Directive characterisation data.*
*** This is cooling water abstraction at coastal power stations which affects transitional waters.*

5.5.5 Abstraction, flow regulation and morphological change: electricity generation

Hydropower has positive impacts on the environment, representing an important source of renewable energy in Scotland generating 8.5% of Scotland's energy generation

As part of Scotland's contribution to combating climate change, ministers have set targets to increase electricity generation from renewable energy sources to 18% by 2010 and a further 22% by 2020. Part of this additional renewable energy contribution will be delivered by hydropower

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

- low flows in rivers, which may be virtually dry except during periods of heavy rain;
- 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 turbines;
- interruption of the flow of sediment downstream of dams, which depletes gravels needed by salmon and trout to spawn;
- compaction of silt and the loss of some habitats in some cases from steady compensation flows.

These impacts affect ecology via the effects of changing river flows and loch levels as well as changes to the morphology of rivers and lochs.

Abstraction and flow regulation from electricity generation is a significant issue on rivers and lochs (Table 15). The abstraction of water for use as cooling water at power stations also impacts transitional water bodies. Approximately 10% of water bodies in Scotland at risk of failing to meet the WFD environmental objectives are affected by abstraction and flow regulation for electricity generation.

Table 15 Impact of abstraction and flow regulation from electricity generation in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✓	1,451 km	130
Loch	✓	279 km^2	45
Transitional	✗	48 km^2	2
Coastal	✗	–	–
Groundwater	✗	–	–

Morphological impacts from electricity generation are another significant issue on lochs (Table 16).

Table 16 Impact of morphology from electricity generation in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✗	904 km	86
Loch	✓	298 km^2	53
Transitional	✗	–	–
Coastal	✗	–	–
Groundwater	✗	–	–

Some hydropower reservoirs and rivers affected by hydro schemes can provide conditions that have lead 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 at new hydropower sites.

5.5.6 Abstraction and flow regulation: public water supplies

The potential for environmental impact from water supply arises from abstraction of water and the storage of water in reservoirs to support abstractions. Changes in water levels are natural as the amount of water in rivers and lochs varies according to the season and between years. Environmental impacts result when the changes in water levels and flow exceed the levels of change to which ecology can adapt. In the most extreme cases, rivers may be dry during certain times of the year – a feature that can be further exacerbated by abstraction activities.

The environmental impacts associated with water supply include:

- exacerbation of low levels of water in rivers (particularly during the summer) by direct abstractions with the potential to damage 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 during periods of low rainfall;
- variation in water levels in lochs 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;
- reduction in the groundwater resource, resulting in a reduction in baseflow to surface water and wetlands.

These impacts affect ecology via the effects of changing river flows and loch levels as well as changing the morphology of rivers and lochs.

Approximately 10% of water bodies in Scotland at risk of failing to meet the environmental objectives of the Water Framework Directive are affected by abstraction and flow regulation for public water supplies. The extent of the impact of abstraction for public water supply is given in Table 17.

Table 17 Extent of the impact of abstraction for public water supply in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✗	1,112 km	89
Loch	✓	192 km^2	42
Transitional	✗	–	–
Coastal	✗	–	–
Groundwater	✗	–	–

5.5.7 Abstraction and flow regulation: agriculture

Irrigation is typically required during dry weather when rivers are low. As a consequence, abstraction for irrigation exacerbates naturally occurring low flows. In addition, the distribution of crops means that farmers frequently have to rely on groundwater or on small burns and tributaries. During periods of low flows these may

not have sufficient flow to support the abstraction without causing an environmental impact.

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 approximately 6,000 people. Across Scotland, SEPA has issued 796 licences for irrigation, including a number for multiple abstractions. Assuming each represents the daily use of only one pump, then irrigation could abstract in total the equivalent of the daily water use of 4.8 million people (i.e. the population of the Scotland RBD).

Irrigation typically occurs between May and August. It 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 to high temperatures in pools isolated by low flows.
- It exacerbates the effects of pollution with very limited dilution for discharges, resulting in low oxygen conditions.
- Small dams across rivers are sometimes constructed 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 along the east coast.
- In productive fissured aquifers, the effects of groundwater abstraction can affect receptors very quickly. In these areas, irrigation abstraction from groundwater can further reduce summer low flows in rivers.
- Groundwater abstraction can impact on wetlands and can damage aquifers by inducing the inland intrusion of seawater.

Approximately 10% of water bodies that are at risk of failing to meet the environmental objectives of the Water Framework Directive are affected by abstraction and flow regulation for agriculture. Table 18 shows the area/length of water bodies impacted by abstraction for irrigation in the RBD.

Table 18 Extent of the impact of abstraction for irrigation in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✘	833 km	116
Loch	✘	2 km^2	1
Transitional	✘	–	–
Coastal	✘	–	–
Groundwater	✘	2,068 km^2	17

* Data from new SEPA licences provides more up-to-date information than WFD characterisation data.

5.6 Changes to morphology

5.6.1 Aquatic habitats are often modified physically to allow people to make use of waters or land. These modifications, often associated with engineering works, can directly remove habitat or indirectly change the natural flow or sediments of our waters. Examples include:

- drainage of land for development, agriculture or forestry;
- construction of flood defences or weirs to control river water levels;
- damming of lochs or loch 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 morphology pressures on the water environment in the Scotland RBD are listed in Table 19.

Table 19 Significant morphology issues in the Scotland river basin district

Pressure type	Key sector	Rivers	Lochs	Transitional	Coastal	Groundwater
Morphology	Historical engineering	2,182 km (185)	49 km^2 (17)	123 km^2 (7)	404 km^2 (5)	–
	Urban development	644 km (60)	–	0.2 km^2 (1)	–	–
	Agriculture	1,851 km (162)	1 km^2 (1)	–	–	–
	Electricity generation	904 km (86)	298 km^2 (53)	–	–	–
	Land claim	–	–	204 km^2 (12)	229 km^2 (5)	–
	Total	**5,063 km (462)**	**339 km^2 (65)**	**213 km^2 (14)**	**525 km^2 (8)**	**–**

5.6.3 Impact on morphology: historical engineering and urban development

Many of Scotland's freshwaters display a history of engineering interventions. Examples include:

- diverting and canalising rivers to utilise floodplains;
- culverting to improve drainage or enable development;
- building embankments to prevent flooding;
- bridging waterways for transportation.
-
- Urban development and historical engineering activities can result in:
-
- the loss of floodplain wetlands and associated biodiversity from the construction of embankments;
- the loss of in-channel habitats due to increased erosion during floods affecting fish, invertebrates and aquatic plants.
- the loss of bankside vegetation, often with increased risk of bank erosion downstream and resultant loss of in-channel habitat supporting fish, invertebrates and aquatic plants;
- structures (associated with culverts, dams and small weirs) that impede the migration of fish and other organisms and which may also affect erosion and deposition rates, and result in a loss of sediment supply downstream;
- loss of in-channel habitats and significant changes to erosion and sediment deposition in the surrounding channel as a result of channel straightening;
- loss of habitat for fish spawning, invertebrates and aquatic plants due to gravel removal;
- increased inputs of fine sediments, increased risk of bank erosion, loss of bankside habitats and elevated water temperatures as a result of removal of bankside vegetation;
- potential increase in the risk of flooding due to the construction of embankments, culverts and other engineering activities.

The permanency of engineering structures means that many of these impacts are likely to be cumulative and long lasting. More than 30% of river water bodies that are at risk

of failing to meet the environmental objectives of the Water Framework Directive are impacted by morphological change from urban development or historical engineering. The extent of the morphological impacts caused by historical engineering and urban development is given in Tables 20 and 21 respectively.

Table 20 Extent of morphological impacts caused by historical engineering in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✓	2,182 km	185
Loch	✗	49 km^2	17
Transitional	✓	123 km^2	7
Coastal	✗	404 km^2	5
Groundwater	✗	–	–

Table 21 Extent of morphological impacts caused by urban development in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✓	644 km	60
Loch	✗	–	–
Transitional	✗	0.2 km^2	1
Coastal	✗	–	–
Groundwater	✗	–	–

5.6.4 Impact on morphology: agriculture

Some common pressures associated with agriculture that can affect river morphology include:

- loss of natural bankside vegetation due to ploughing up to the edge of rivers or allowing grazing of river banks;
- construction of flood embankments reducing the area of the floodplain;
- construction of hard bank protection to control bank erosion;
- straightening and realignment of rivers to create straight boundaries to allow farm machinery to operate close to the river, or to lower water levels to drain land;
- increased inputs of fine sediments due to farm run-off or loss of bankside vegetation;
- land drains and culverts.

These pressures can have a variety of direct or indirect impacts on river morphology and ecological health. Channel straightening, dredging, erosion control and flood embankments can lead to a loss of natural morphological features. This can lead to channel destabilisation (erosion or aggradation) and loss of important habitats on which animals and plants depend. The loss of natural bankside vegetation can remove an important natural buffer between agricultural land and the river. This can exacerbate the impacts from other pressures, including engineering and diffuse pollution. In extreme situations, the result is a ditch-like river with limited biodiversity values and which has lost its resilience to pollution and flooding.

Approximately 20% of river water bodies at risk of failing to meet the environmental objectives of the Water Framework Directive are affected by morphological changes resulting from agricultural activities. Morphological impacts caused by agriculture mainly affect river water bodies although one loch is recorded to be affected (Table 22).

Table 22 Extent of the impact of morphological impacts caused by agriculture in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✓	1,851 km	162
Loch	✗	1 km^2	1
Transitional	✗	–	–
Coastal	✗	–	–
Groundwater	✗	–	–

5.6.5 Impact on morphology: land claim

Land claim is the enclosure of intertidal or sub-tidal areas within impermeable banks followed by infilling for use by agriculture, housing, port or industry. Physical impacts associated with land claim can include:

- changes in the nature and extent of coastal features, e.g. salt marsh and sand spits;
- substratum loss (removal/direct damage to substrate) and changes to the natural size of sediment;
- increased deposition/smothering due to changes in suspended sediment concentrations – potential short-term effects are during 'infill' operations though, in the longer term, the effects depend on estuary-wide morphological change such as increased erosion;
- changes in longitudinal and lateral sediment transport pathways – land claim development rules out natural erosion of the coastline and can interrupt sediment transport pathways;
- changes in currents – effects are site-specific but impacts can extend beyond the immediate vicinity of the development footprint;
- changes in flushing, stratification and mixing characteristics – land claim results in changes to the planform and cross-section of an estuary affecting the tidal prism;
- changes in wave exposure.

These changes to the hydromorphology can affect the ecology which it supports. Changes in intertidal habitat extent and species composition can have an indirect consequence on food availability for birds and fish, and the composition, density and abundance of phytoplankton leading to reduced overall ecological productivity.

Transitional waters are important nursery and over-wintering habitats for many fish species. The intertidal area is also a source of food for a range of higher trophic levels leading ultimately to birds, seals and dolphins. At low tide, bird populations benefit from the abundant food supply whereas fish feed on the intertidal area at high tide. Fish and birds in particular are therefore susceptible to the loss of intertidal habitat.

The loss of habitat reduces the refuge zones and habitat patches necessary for ecosystem functioning. In the Forth Estuary land claim has removed 24% of the natural fish habitats, which equates to a 40% reduction in their food supply.

In the Scotland RBD just over half of all at risk transitional water bodies are impacted by land claim (Table 23).

Table 23 Extent of the impact of morphological impacts from land claim in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✗	–	–
Loch	✗	–	–
Transitional	✓	204 km^2	12
Coastal	✗	229 km^2	5
Groundwater	✗	–	–

5.7 Invasive alien species

5.7.1 Our water environment also faces other threats. Invasive alien species is an example of an increasingly recognised issue. These species are non-native plants or animals that compete with, and may even over-run, our natural aquatic plants and animals.

5.7.2 The significant issues relating to invasive alien species in the water environment in the Scotland RBD are listed in Table 24.

Table 24 Significant invasive alien species issues in the Scotland RBD

Pressure type	Key sector	Rivers	Lochs	Transitional	Coastal	Groundwater
Invasive alien species	All sectors	315 km (7)	21 km^2 (4)	136 km^2 (4)	46 km^2 (1)	–

5.7.3 The following four important invasive alien species identified as posing a risk to water ecosystems were present in the Scotland RBD at the time of assessment in 2004.

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

- The common cord-grass, Spartina anglica, is found in a number of transitional and coastal water bodies in the RBD where it grows on mudflats and adjacent salt marshes. It has the potential to change the habitats to a monoculture, reducing the area of open mud and potentially altering the pattern of accretion of silt.

- The 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.

- The water fern, Azolla filiculoides, is a small floating water plant that can completely cover the surface of freshwater bodies (typically pond and lochs), leading to the shading out of light and loss of submerged water plants. This can lead to an impoverishment in the fauna dependent on the native water plants.

5.7.4 The historic record for parrot's feather (*Myriophyllum aquaticum*) was not accurate enough to be ascribed to a specific water body. Subsequent to the risk assessment, Japanese weed *Sargassum muticum* was recorded in Loch Ryan in southwest Scotland (Solway Tweed RBD) and has continued to spread further north along the Scottish west coast, reaching Loch Fyne in the Scotland RBD by August 2006 and the Firth of Lorne by May 2007. Assessment of the spread and impacts of this newly

arrived invasive alien marine species requires further work and water bodies affected by it are not included in the totals below.

5.7.5 More than 20% of Scotland's transitional water bodies are at risk of failing to meet the environmental objectives as a result of alien species. A number of rivers, lochs and coastal waters are also affected. Further work is required for all water body categories to establish the extent and severity of the problem. Table 25 shows the area/length and number of water bodies impacted by invasive alien species.

Table 25 Extent of the impact of key aquatic invasive alien species in the Scotland river basin district

Category	Impacts more than 15% length/ 20% area of at risk water bodies	Length/area impacted	Number of water bodies
River	✘	80 km	23
Loch	✘	–	1
Transitional	✓	91 km^2	4
Coastal	✘	46 km^2	1
Groundwater	✘	–	–

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 Where monitoring indicates that objectives may not be met or are being breached in an area, the local authority designates an Air Quality Management Area. The local authority must then develop an Air Quality Action Plan. Air quality is generally better in Scotland than elsewhere in the UK and, as a result, the Scottish Air Quality Strategy has some more challenging objectives. Twelve Air Quality Management Areas have been declared to date, mainly for traffic related pollutants. Pockets of poor air quality do occur in some of the urban centers and along major roads and motorways, but overall, air quality in the RBD is good. Additionally, ground level ozone is increasing in some rural areas, which can be detrimental to plant life and human health.

6.3 Given the very good air quality across the area and the very limited influence that the Scotland 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.

6.4 Further details about air quality in Scotland can be found in the SEPA State of the Environment Report which is available on the SEPA website at http://www.sepa.org.uk/publications/state_of/2006/main/b_air.html

SECTION 7 - CLIMATIC FACTORS

7.1 Climate Change in Scotland – Context and Observed Impacts

7.1.1 Due to rapidly increasing concentrations of carbon dioxide (CO_2) and other greenhouse gases in the atmosphere, the temperature of the planet is rising quickly compared with relatively stable temperatures throughout the past millennium. Atmospheric carbon dioxide concentrations remained relatively constant at around 280 parts per million (ppm) for at least a thousand years, but concentrations have risen since the mid-1700s, reaching 377ppm in 2004. The increasing use of fossil fuels for energy generation and transport purposes means carbon dioxide is the most critical greenhouse gas. Although Scotland's carbon dioxide emissions fell by 8% between 1990 and 2003, our energy demands for transport, businesses and homes increased by over 10% during the same period. Despite methane emissions falling by 35% between 1990 and 2003, significant volumes of carbon dioxide and methane could be released from soils as a result of increased temperatures or changes in land use. For example, Scotland's peat uplands are vulnerable to changes in climate and land management and, if only 0.1% is released as carbon dioxide, Scotland's emissions will double.

7.1.2 The Scotland & Northern Ireland Forum For Environmental Research (SNIFFER) 2006 publication **Handbook of Climate Trends Across Scotland**; and SEPA's **State of the Environment 2006 Report** set out recorded changes in Scotland's climate in the last century. The significant observations are:

7.1.3 Temperature

Average temperature **-** Scotland's temperature records indicate average spring, summer and winter temperatures rising by more than 1^{o}C since 1961. This has been particularly prevalent in southern and eastern Scotland. Average temperature increases are smallest in autumn.

Maximum temperatures – 24 hour maximum temperatures have similarly been increasing, on average by over 1^{o}C since 1961. This is particularly marked in winter and spring. The rise in maximum temperatures has been relatively constant across the country.

Minimum temperatures – Since 1914 there has been an upward trend in minimum temperatures in both east and west Scotland for all seasons. Minimum temperatures in northern Scotland while increasing are doing so at a slower rate than the rest of the country and some areas not having experienced much increase at all. Minimum temperatures have not increased at the same rate as maximum temperatures.

Growing Season – Since 1961, the growing season across the whole of Scotland has lengthened by 33 days. This is particularly marked in coastal areas, in western Scotland where the growing season is now nearly 37 days longer than in 1961 and the Shetland Islands where it has been extended by over two months. The increase in growing season is most influenced by an early start which on average now occurs 21 days earlier.

Frosts – Since 1961 there has been a 26% reduction in the number of days each year of air frost. This reduction has been constant across the country, although some small areas in northern Scotland have witnessed an increase. The reduction is most noticeable in the spring and autumn seasons. Since 1961 there has been a 28% reduction in the number of days each year of ground frost, although most of these reductions have occurred since the early 1980s.

7.1.4 Rainfall

Average rainfall – Scotland over a whole year is on average 20% wetter than it was in 1961. Winter precipitation shows a clear upward trend since this time, with a 58% increase recorded across the country. This is most marked in the north (nearly 70% increase) and less marked in the east (36% increase). There is less variability in

precipitation across the other seasons and patterns are less clear. The key trends for non winter months appear to be that the east has become slightly drier during the summer and the west wetter in spring.

Heavy rain – There has been a trend of increasing heavy rainfall in winter, particularly in the north and west. There is a link between the number of days of heavy rain and overall rainfall.

Snow Cover – The number of days of snow cover has reduced across the country. This is particularly prevalent in autumn where decreases of over 70% have been recorded (nearly 83% in western Scotland).

Drought – There has been very little change in the maximum number of consecutive dry days with little long term trends recorded since 1961. Overall there is a clear contrast in the number of consecutive dry days between east and west Scotland, but there would appear to be no significant changes since 1961.

Flooding – There is a clear trend of an increase in the levels of maximum five day precipitation (i.e. maximum recorded precipitation over a five day period in any year) of about 20%. A steady increase has been recorded across all Scotland. Increases in prolonged precipitation and rainfall intensity may lead to greater flooding.

7.1.5 Other

There is no clear trend in windspeeds or number of gale days across the country. Since 1961, the number of sunshine hours in a day has increased slightly over a whole year, but a more significant increase is recorded across Scotland during autumn. While there are significantly different patterns of sunshine across the country, changes in those patterns appear not to show any trends.

7.1.6 The Marine Environment

The seas around Scotland have warmed by 1^{o}C over the last 20 years . Warmer seas have prompted changes in composition, abundance and distribution of a number of marine species including plankton, fish, sea birds, whales, mammals, dolphins and porpoises.

7.1.7 Coastline

Sea level is rising all around the UK coastline, but at a slower rate around Scotland because the Scottish mainland is still rebounding following the last ice age. Nonetheless, all Scottish mainland gauges have recorded a sea level rise over the long term, with the longest individual record at Aberdeen indicating an average sea rise of 0.6mm per year since 1862. Sea level rise increases the risk of flooding of coastal and estuarine towns and leads to erosion of intertidal habitats and loss of biodiversity. This, combined with evidence of increasing storminess and wave height in the North East Atlantic, suggests that future storm surges will probably become more severe, leading to increased risk of coastal flooding.

7.2 Climate Change in Scotland - Predicted Impacts and their relevance to water

7.2.1 Temperatures in Scotland may rise by up to 4^{o}C 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.

7.2.2 *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^{o}C warmer in winter; up to 3.5^{o}C warmer in summer; and possibly 4^{o}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 by over 30% in the east of the country and up to 20% in the west 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 it could be up to 3% higher, particularly in the north west of Scotland. Meanwhile, 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 across much of Scotland will decrease by over 90%.

- Sea level will rise by approximately 60cm around Scotland's coastline and storm surges could be up to 0.7m higher, resulting in higher risks of coastal flooding.

- Sea surface temperature will be 1^{o}C to 2.5^{o}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, more frequent and more severe river flooding will occur. It is estimated that this may affect more than 70,000 properties, many of which are concentrated within particular areas of risk. In addition, with higher sea levels and increased wave height, it is predicted that coastal flooding in Scotland will become both more frequent and more severe. It is predicted that a further 30,000 properties could be at risk from this source of flooding. 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 pollutants, for example from agricultural land, into waterbodies and which may affect their status – e.g. agricultural 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 around Scotland 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 habitat loss on land. 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 Scottish Island seabirds. 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 Scotland 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)

SECTION 8 - SOIL[8]

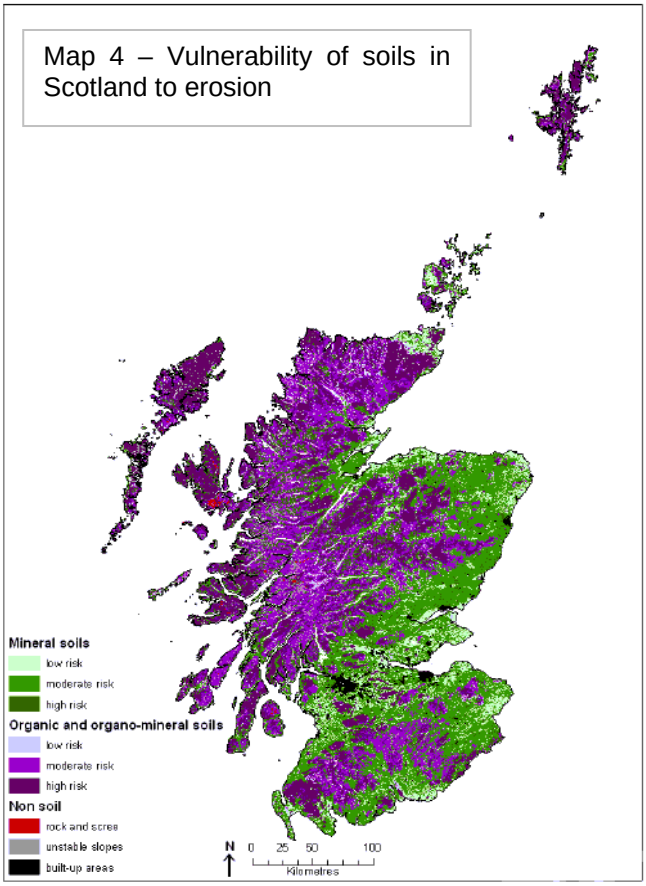
8.1 Soil is a significant component of land but remains the least understood of all environmental media. Soil (formed from minerals, organic matter, air and water) is particularly important as it:

- is naturally slow to form but can be destroyed rapidly;
- enables vegetation growth, supporting ecosystems, agriculture and forestry;
- mediates water flow by capturing and filtering rainfall and delivering it to rivers, lochs and underlying rock formations (forming part of the water cycle);
- serves as a filter and buffer, transforming harmful substances and minimising their entry to water and food chains;
- forms an essential part of the carbon cycle (the organic matter it contains acts as a sink for carbon dioxide and as a carbon store).

8.2 Soil is also a habitat in its own right and supports a very varied biodiversity. A handful of soil contains millions of bacteria and other micro-organisms, fungi and invertebrates (e.g. mites, springtails and worms).

8.3 Because of its diverse geology and climate, Scotland possesses a wide variety of different soil types. The distribution of the principal soil groups in Scotland is shown in Map 5 overleaf. Scottish soils are in general more organic, more leached and wetter than those of most other European countries. Scotland 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 map also reveals the contrast between soil types in the Midland Valley and those in the Highlands and Southern Uplands. The Midland Valley is dominated by mineral soils whereas the Highlands and Southern Uplands are dominated by peaty soils, especially in the west.

Map 4 – Vulnerability of soils in Scotland to erosion



Soil erosion and landslides

8.4 Map 4 shows the vulnerability of Scottish soils to erosion. Erosion occurs principally by the action of water and wind. 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.

8.5 An estimated 900,000 tonnes of soil were lost by erosion to freshwater during 2004, of which 88% was from agricultural land. Erosion is often triggered by heavy rain falling onto exposed

[8] *For further details, go to: http://www.sepa.org.uk/publications/state_of/2006/main/b_land.html*

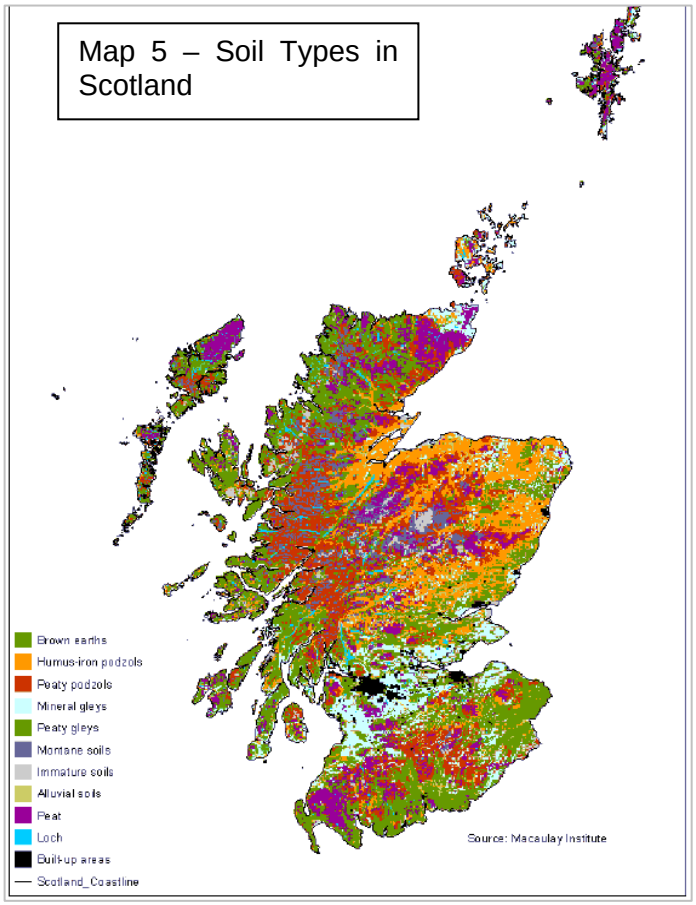
and unstable soil. Land management practices can increase the rate of soil loss. Farmers are now required to keep land in 'good agricultural and environmental condition' by adopting practical measures that avoid damage to soil, habitats and vegetation. Forests are already covered by best practice guidelines designed to protect both soil and water.

8.6 Climate change, with a predicted increase in the storminess and intensity of rain events, may change the pattern of soil erosion in the future.

Soil sealing

8.7 Soil can act as a natural sponge by capturing rainfall and surface run-off, and then releasing water more gradually to groundwater and surface waters. This ability is lost where soil is replaced or sealed by impermeable surfaces such as concrete and asphalt. Soil 'sealing' means that the soil is often removed or cut off from inputs of organic matter and natural interactions with air and water, which can result in greater flood risk. Groundwater recharge is also reduced, with implications for the quantity of water and supply to surface waters. The significance of this for soil functions is now recognised in planning guidance[9].

8.8 There is currently no single mechanism at a national level to gather and report data on the extent of soil sealing in Scotland. It is primarily related to the degree of urbanisation and will occur on all sites where development takes place. Identifying soil types with suitable infiltration rates where sustainable urban drainage systems (SUDS) can be used is helping to minimise the impact of sealing and development (see www.sepa.org.uk/dpi/suds/index.htm). Drainage to SUDS or equivalent systems is now a requirement for all new developments in Scotland.



[9] *www.scotland.gov.uk/Publications/2001/07/pan61*

8.9 Land Use

8.9.1 The way land is used and managed greatly influences the water environment, as well as water dependent biodiversity. Agricultural land cover in Scotland has changed little since 1990, remaining the dominant land use activity covering approximately 75% of land area. Soil type, geology, topography and climate limit agricultural potential and only 6% is classed as prime agricultural land.

8.9.2 Agricultural land use has considerable potential to affect soil erosion, soil organic matter, habitats and biodiversity depending on the type of farming as well as the nature of the soil and weather conditions, vegetative cover and land management practices. Table 26 shows agricultural land use within Scotland.

8.9.3 Recent changes in agricultural policies are leading to a shift from subsidising food production to supporting rural development, environmental benefit, animal health and welfare and food safety. 344,416 hectares of agricultural land were covered by the Organic Aid Scheme in 2005, with a total of £3.1 million spent on supporting the conversion to organic agriculture. Provisional figures also indicate that there were 501,000 hectares of agricultural land subject to good land management practices under the Land Management Contract Menu Scheme in 2005

Table 26 - Summary Agricultural Land Use in Scotland
(From Scottish Executive Economic report on Scottish agriculture 2005)
Scotland totals

Year	Total crops, fallow and set-aside	Total grass	Rough grazing (sole right)	Rough grazing (common)	Woodland & other land (1)	Total area of all land (2)
2005	620.7	1235	3342.3	598.5	318.6	6115.2

Area of agricultural land in thousands of hectares.

(1) Woodland excludes woodland managed by the Forestry Commission. Other Land includes roads, yards and buildings.

(2) Figures may not sum to total due to rounding.

The effect of agricultural activity on the water environment is detailed in section 5 (water)

8.10 Soil Related Designations

Nitrate Vulnerable Zones
Groundwaters with elevated nitrate concentrations tend to be found in the more intensively farmed areas of eastern Scotland. In response to this problem four Nitrate Vulnerable Zones (NVZ), amounting to 14% of the land area of Scotland, have been designated. Where an NVZ is designated, action programmes must be put in place to reduce pollution by nitrates from agricultural sources. There are 3 designated Nitrate Vulnerable Zones in the Scotland RBD, all on the eastern side of the country - Strathmore / Fife, Lothian/Borders and Moray / Aberdeenshire / Banff / Buchan. These are shown on Map 6 overleaf

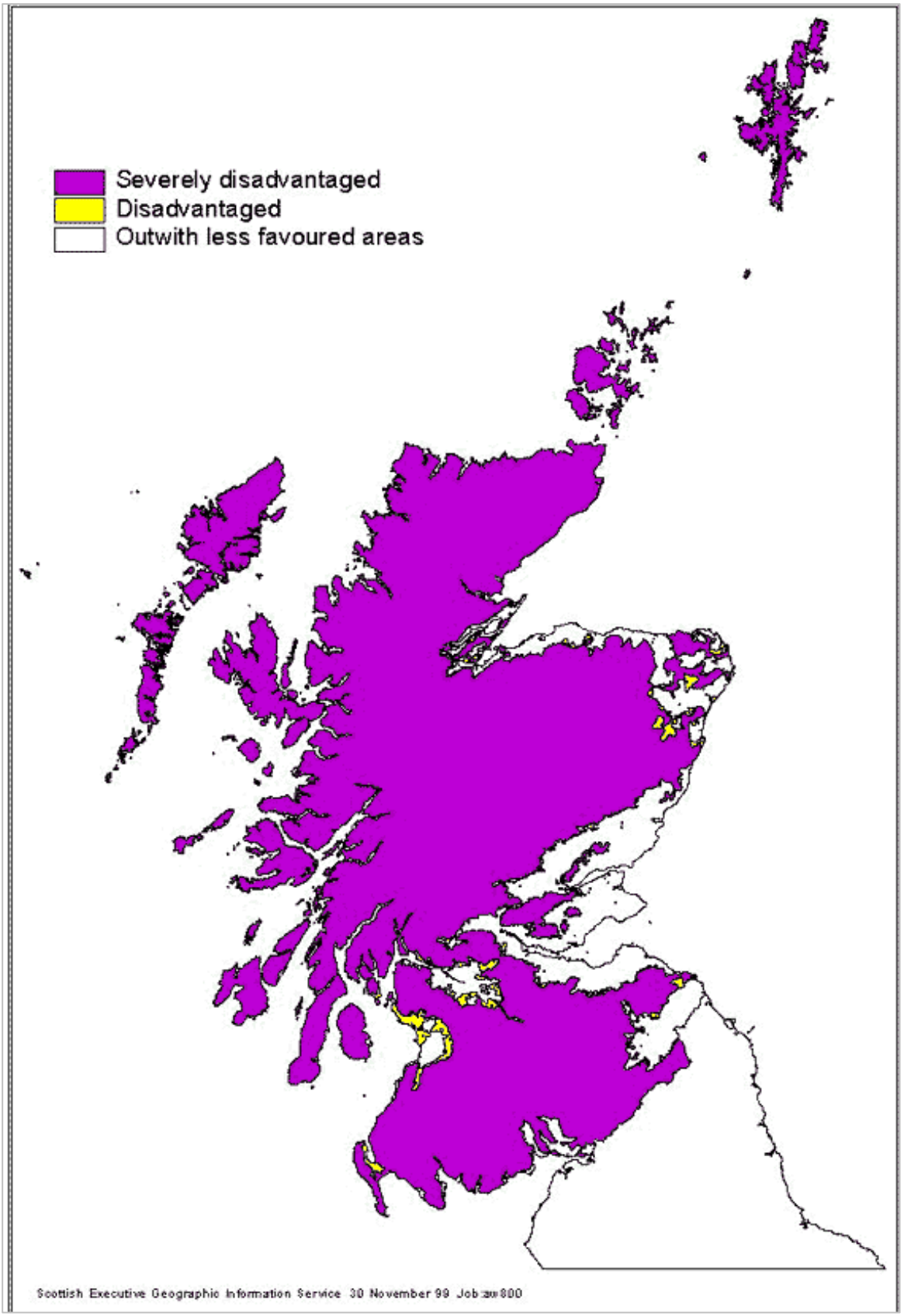
Environmentally Sensitive Areas
There are 10 Environmentally Sensitive Areas in the Scotland RBD, which offer incentives to encourage farmers to adopt agricultural practices which would safeguard and enhance parts of the country of particularly high landscape, wildlife or historic value.

Less Favoured Areas
Approximately 85% of Scotland's agricultural land has Less Favoured Area (LFA) status (ie. it suffers from a permanent natural disadvantage such as, for example, poor soil, adverse climate or difficult topography, that makes it difficult for them to compete on level terms with other areas). Of this 98% is designated as 'Severely Disadvantaged' Less Favoured Area. The extent of Scottish LFAs is shown in Map 7 overleaf. The LFA

scheme provides financial compensation for additional agricultural costs incurred as a result of the natural disadvantage of their land.

Map 6 – Nitrate Vulnerable Zones in Scotland

Map 7 – Less Favoured Areas
(source http://www.scottish.parliament.uk/business/research/pdf_res_notes/rn01-37.pdf)



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. Table 27 shows the approximate number of Listed Buildings (LBs) and Scheduled Ancient Monuments (SAMs) within the Scotland RBD. These are shown in Map 8 overleaf.

Table 27

Feature	***Within Scotland RBD***
Listed Buildings[10]	***36,600***
Scheduled Ancient Monuments[11]	***5,545***
Total	***42,145***

Source: www.historic-scotland.gov.uk (search for Scottish LBs and SAMs)

World Heritage Sites – The UNESCO World Heritage 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 are 4 World Heritage Sites in the Scotland RBD - Heart of Neolithic Orkney, St Kilda, New Lanark and Edinburgh Old and New Towns.

9.3 In the Scoping Report it was stated that an evaluation of those protected cultural heritage sites within 10 metres of water bodies would be carried out for inclusion in this report. However, it was decided that this would involve a level of assessment greater than that being applied to other SEA topics and that this approach should not be pursued.

9.4 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. wiers, dams and canals. Some historic features that have resulted in the designation of a waterbody as heavily modified may reduce the ability to restore such waterbodies 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 waterbodies.

9.5 Key marine cultural heritage features in Scotland include shipwrecks, caves and military remains. There have been countless shipwrecks around the coast of the UK, but only 56 of these wrecks are now protected under The Protection of Wrecks Act 1973. This act provides protection for designated wrecks which are deemed to be important by virtue of their historical, archaeological or artistic value. Each wreck has an exclusion zone around it and it is an offence to tamper with, damage or remove any objects or part of the vessel or to carry out any diving or salvage operation within this exclusion zone. There are 8 protected wrecks in the Scotland RBD area.

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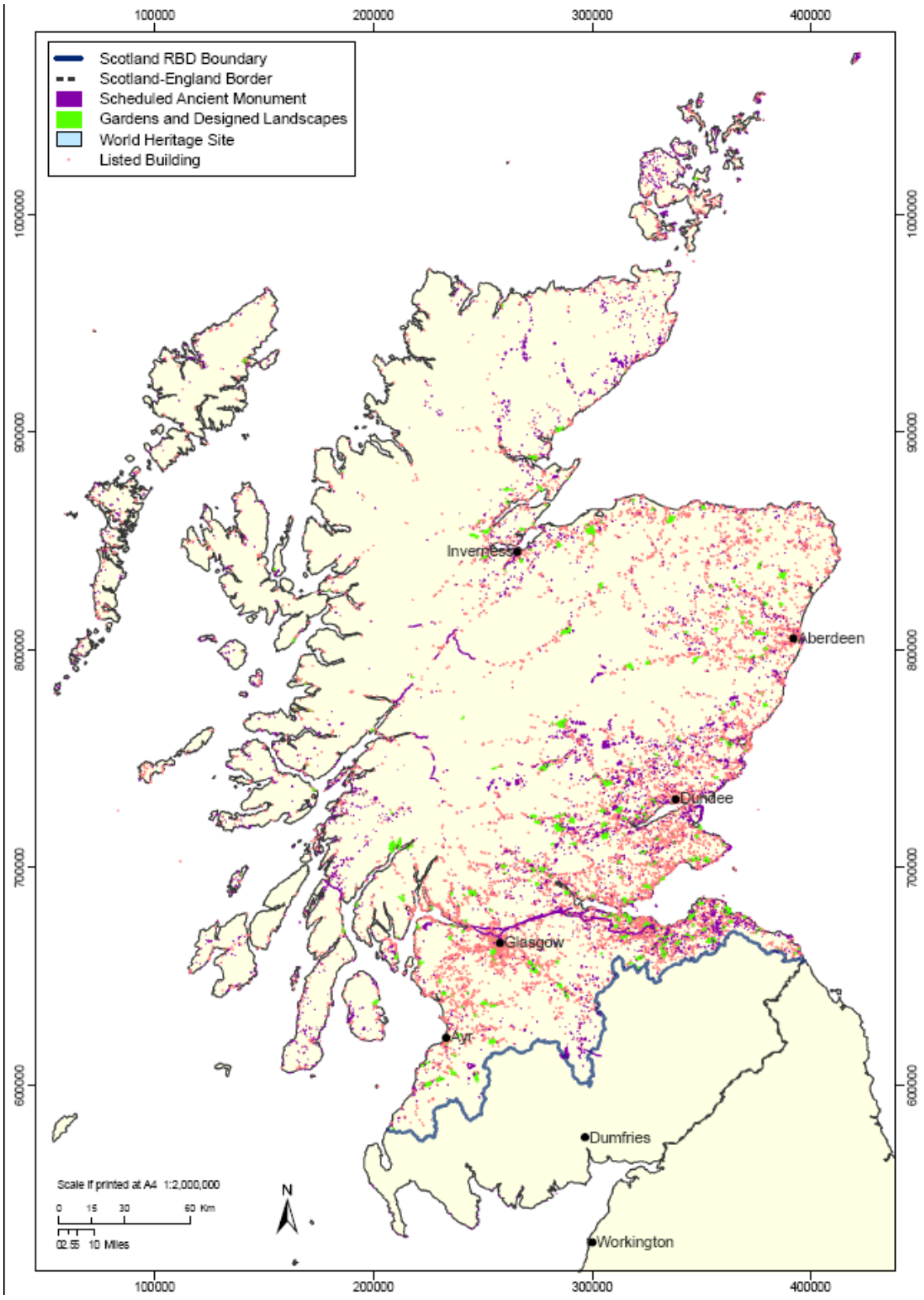
10 Listed Buildings protect the best of our architectural heritage. When a building is listed it is recognised as of special architectural or historical interest or both, and its details become part of a public record. The building is immediately protected by law, and any changes to it must first receive listed building consent.

[11] *Scheduled Ancient Monuments are designated under the Ancient Monuments and Archaeological Areas Act 1979. They 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.*

Map 8 – Locations of SAMs, Gardens and Designed Landscapes, World Heritage Sites and Listed Buildings. (Source: www.historic-scotland.gov.uk)



9.6 Protection Of Underwater Sites of Cultural Heritage - The Ancient Monuments and Archaeological Areas Act (1979) is primarily for land based features, but in recent years it has also been used to provide some level of protection for underwater sites. The Act provides for the scheduling of 'monuments', which encompasses buildings, structures or work, cave or excavation, vehicle, vessel, aircraft or other movable structure. In order to be eligible for scheduling, a 'monument' must be of national importance.

In relation to maritime scheduled monuments, once a wreck has been scheduled, public access to it, i.e. diving on the site, is not currently restricted. However, it is an offence to demolish, destroy, alter or repair it without *scheduled monument consent*. Effectively, diving on maritime scheduled monuments is permitted on a 'look but don't touch' basis. For this reason, only suitably robust sites are likely to be scheduled, such as the remains of the German High Seas Fleet at Scapa Flow.

9.7 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.

SECTION 10 - LANDSCAPE

10.1 The scenery of Scotland is nationally and internationally renowned. Viewed with pride by Scots themselves, it also has economic significance as a key attraction for tourists. It is important to the quality of life in providing settings within which people live, work and play; it is the route by which most people come to understand and value the natural heritage; and it is at the heart of the popular image of Scotland.

10.2 For its size Scotland has a remarkably diverse landscape. Primarily influenced by its geology and geomorphological history the wide range of landscape character is directly related to the land form and the variety of rock types and soils which underpin the physical landscape. These physical features and processes, along with the climate, have influenced the national vegetation pattern and, combined with accessibility, have in turn influenced cultivation and settlement patterns. Much of the current pattern of land use and development reflects the physical limitations and opportunities provided by the natural environment.

10.3 Scotland's landscape can be divided into 4 broad geographical areas. At the scale covered by the Scotland RBMP it is not possible to cover the landscape character of each part of Scotland in detail, however the following overview is provided:

Highlands
The sense of vertical scale provided by mountains, and the degree of enclosure they can create, characterises much of the Highland landscape. The mountains create structure and form, reveal and frame views, offer a sense of mystery, provide a backdrop for more intimate landscapes and reinforce a sense of height, distance and grandeur within sweeping panoramas. The mountains dominate the landscape in areas of high relief, such as Torridon and the far northwest. In the central and southern Highlands the relief is lower and the landscape is more enclosed, with long glens winding into the interior of the mountain massifs, or fjord-like lochs reaching out to the rocky western coastline. These northern landscapes have at least in part been created by human action, most notably through the removal of natural woodland and the modification of heath and bog vegetation, despite being perceived as relatively natural. There is a sense of wildness as many parts of the Highlands are relatively inaccessible from the main areas of population.

Northern and Western Coastline
Much of Scotland's landscape is greatly influenced by the presence of the sea and the long, often highly indented coastline. Coastal landscapes and the offshore islands are characterised by their exposure and the evidence of physical change brought about by wave and tidal erosion and deposition. The lack of vegetation creates a more open landscape, with views dominated by the water, although sheltered bays and inlets contrast with this, where settlements rely on the safe access to the sea and relative ease of cultivation of more gentle slopes.

Eastern Coastline and Lowlands
In the east and south of Scotland, these coastal fringes back onto fertile lowlands, enriched by soils created in part from relatively friable sedimentary rocks. Here, the gentle landform provides an open landscape, where long views are common, and where shelter is provided by narrow belts of woodland. Farms, often with substantial farm houses are sited at regular intervals along low ridges or at the edge of wide straths, surrounded by relatively even sized fields, marked out by field boundary trees. This is farmland characterised by the dynamics of cropping, where the fertile soil is annually ploughed and resown, and where the diversity of colour and seasonal change are key characteristics of the landscape.

Central Lowlands
Much of Scotland's landscape is greatly influenced by the presence of the sea, and the long, often highly indented coastline. Coastal landscapes and the offshore islands are characterised by their exposure, and the evidence of physical change, brought about

by erosion and deposition by tides and waves. The often harsh weather conditions shape the vegetation (or dictate the lack of it), and emphasise the openness and expansive horizontal scale of water dominated views. Sheltered bays and inlets offer relief from the exposure, where settlements rely on safe access to the sea and relative ease of cultivation of more gentle slopes.

10.4 Scottish Natural Heritage initiated a Landscape Character Assessment programme in 1994 designed to describe the landscape character of the total landscape area of Scotland. This identified 365 types of distinctive character, which can be grouped into 52 landscape character groups. Further detail of this assessment is available in "Natural Heritage Zones; A National Assessment of Scotland's Landscapes" which can be viewed at www.snh.org.uk .

10.5 National Scenic Areas (NSAs) 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. There are currently 35 NSAs in the Scotland RBD. The locations of NSAs in Scotland are set out in Map 9 and table 28 overleaf.

10.6 In addition to NSAs, landscape of high value is also recognised through designation of National Parks, within which the main mechanism for protecting the landscapes is through exercising of the National Park Authority's land use planning and development control functions. There are also two national parks in Scotland: the Loch Lomond & Trossachs and the Cairngorm National Parks.

10.7 Landscape of local value is also recognised in Scotland through a network of areas of local landscape designations. These include designed landscapes deemed to have historic significance which are listed in the Inventory of Gardens and Designed Landscapes.

Map 9 – Locations of Landscape designations in Scotland. (Source: ww.snh.gov.uk)

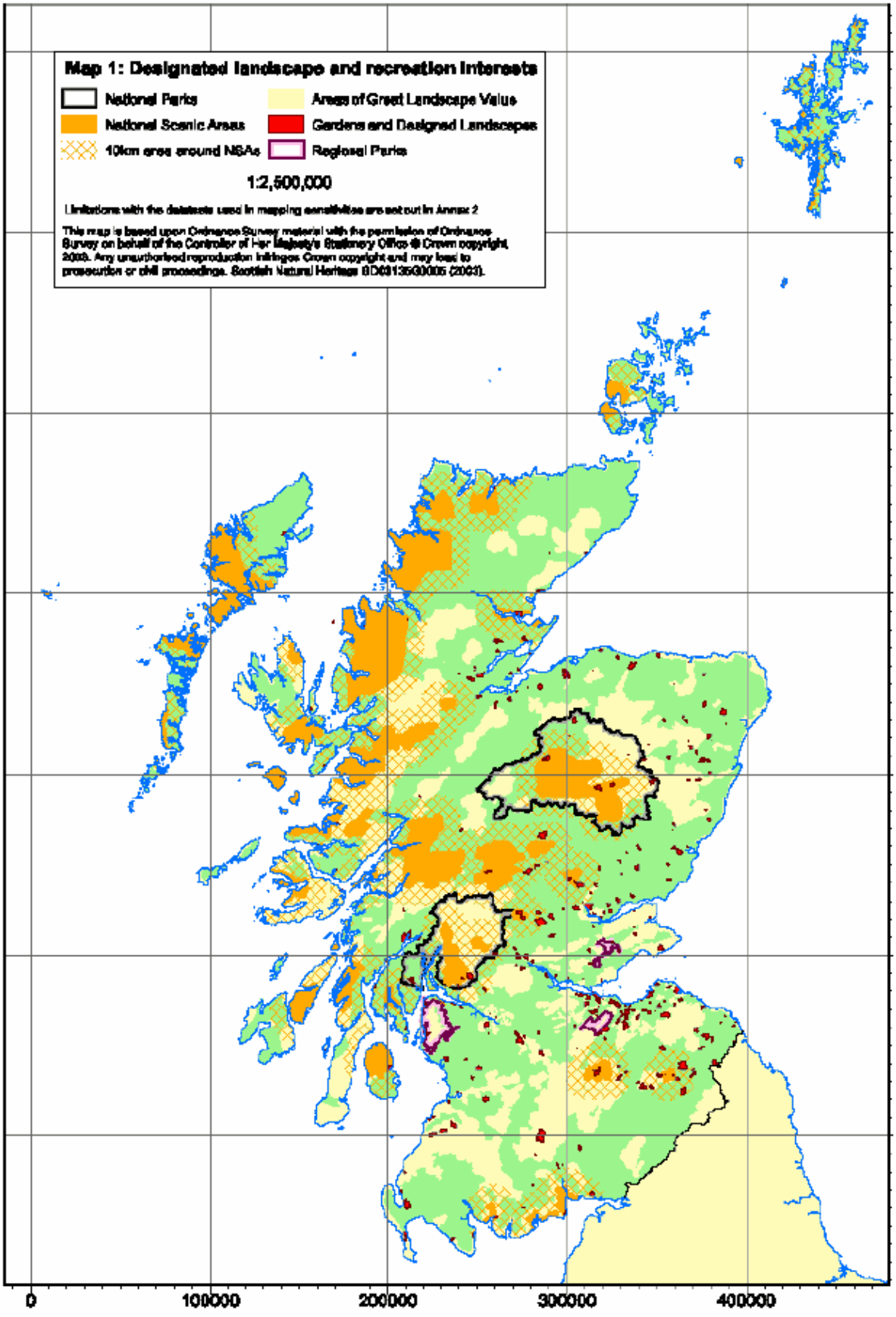


Table 28 – National Scenic Areas in Scotland RBD (Source: Scottish Executive)

National Scenic Area	Local Authority(ies)	Land Area (ha)
Assynt - Coigach	Highland	90,200
Ben Nevis and Glen Coe	Highland, Argyll and Bute, Perth and Kinross	101,600
Deeside and Lochnagar	Aberdeenshire, Angus	40,000
Dornoch Firth	Highland	7,500
Glen Affric	Highland	19,300
Glen Strathfarrar	Highland	3,800
Hoy and West Mainland	Orkney Islands	14,800
Jura	Argyll and Bute	21,800
Kintail	Highland	15,500
Knapdale	Argyll and Bute	19,800
Knoydart	Highland	39,500
Kyle of Tongue	Highland	18,500
Kyles of Bute	Argyll and Bute	4,400
Loch Lomond	Argyll and Bute, Stirling, West Dunbartonshire	27,400
Loch na Keal, Isle of Mull	Argyll and Bute	12,700
Loch Rannoch and Glen Lyon	Perth and Kinross, Stirling	48,400
Loch Shiel	Highland	13,400
Loch Tummel	Perth and Kinross	9,200
Lynn of Lorn	Argyll and Bute	4,800
Morar, Moidart and Ardnamurchan	Highland	13,500
North Arran	North Ayrshire	23,800
North-West Sutherland	Highland	20,500
River Earn (Comrie to St. Fillans)	Perth and Kinross	3,000
River Tay (Dunkeld)	Perth and Kinross	5,600
Scarba, Lunga and the Garvellachs	Argyll and Bute	1,900
Shetland	Shetland Islands	11,600
South Lewis, Harris and North Uist	Western Isles	109,600
South Uist Machair	Western Isles	6,100
St. Kilda	Western Isles	900
The Cairngorm Mountains	Highland, Aberdeenshire, Moray	67,200
The Cuillin Hills	Highland	21,900
The Small Isles	Highland	15,500
The Trossachs	Stirling	4,600
Trotternish	Highland	5,000
Wester Ross	Highland	145,300

SECTION 11 - MATERIAL ASSETS

The following information is largely derived from "an economic analysis of water use in the Scotland RBD", published by SEPA in 2005. For further details, the full document is available at: www.sepa.org.uk/pdf/publications/wfd/Article_5_Scotland_River_Basin_economic.pdf

11.1 Economic Value of Water Related Activity

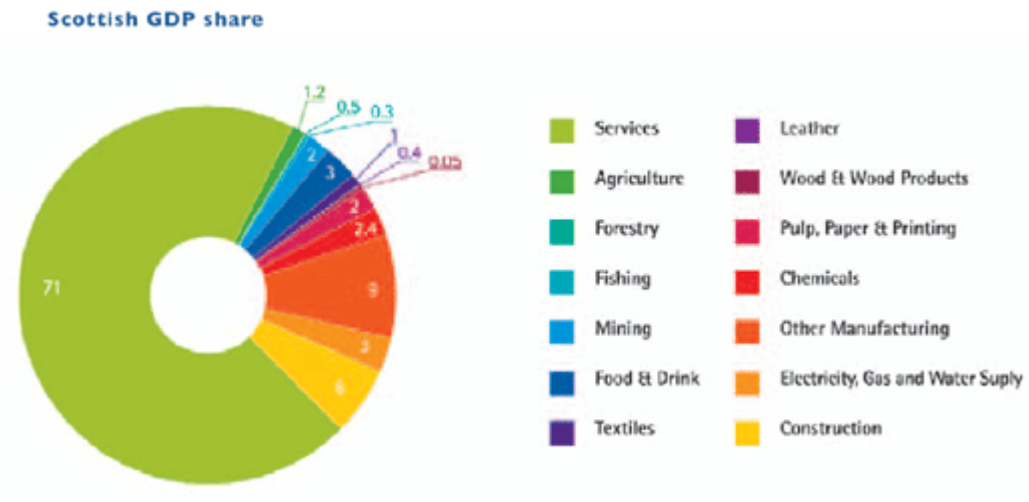
During 2002 estimates were made to quantify in monetary terms the benefits that the earth's ecosystem services within Scotland provide. This work generated an estimate of the annual value of approximately £17 billion, of which more than £3 billion was directly attributable to lochs, rivers and estuaries. In many cases the value of these benefits is utilised by industrial sectors and becomes embodied in their final products. In others, the benefits are enjoyed by the population at large or by recreational users of the environment. For example, in Scotland, in response to a parliamentary question in April 2000, Visit Scotland suggested that sailing contributed some £10m to the Scottish economy, 'activity holidays' £240m, fishing £80m and walking some £440m. (Reported in *Participation in Outdoor Sports Activity* Research Digest 85, Sport Scotland, August 2001).

There are a number of large ports around the coast of Scotland and on the islands, with Forth, Sullom Voe (Shetland), Aberdeen, Orkney and Clyde ports each handling more than 10 million tonnes of freight traffic in 2001. In total, 119.6 million tonnes of freight used the main ports in 2001, with crude oil (78.8 million tonnes), oil products (11.0 million tonnes), and coal (6.7 million tonnes) accounting for the greatest proportions. A much smaller amount of freight (11.4 million tonnes) was carried for part of its journey on inland waterways, of which the majority used the Forth.

11.2 Economic activities in Scotland

An economic Analysis of water use in the Scotland River Basin District was published in 2005. This report gives an indication of the value of Scotland's water resource and its associated material assets. The report can be accessed at: http://www.sepa.org.uk/publications/wfd/html/economic_scotland/index.html and the key points are highlighted below.

Table 29



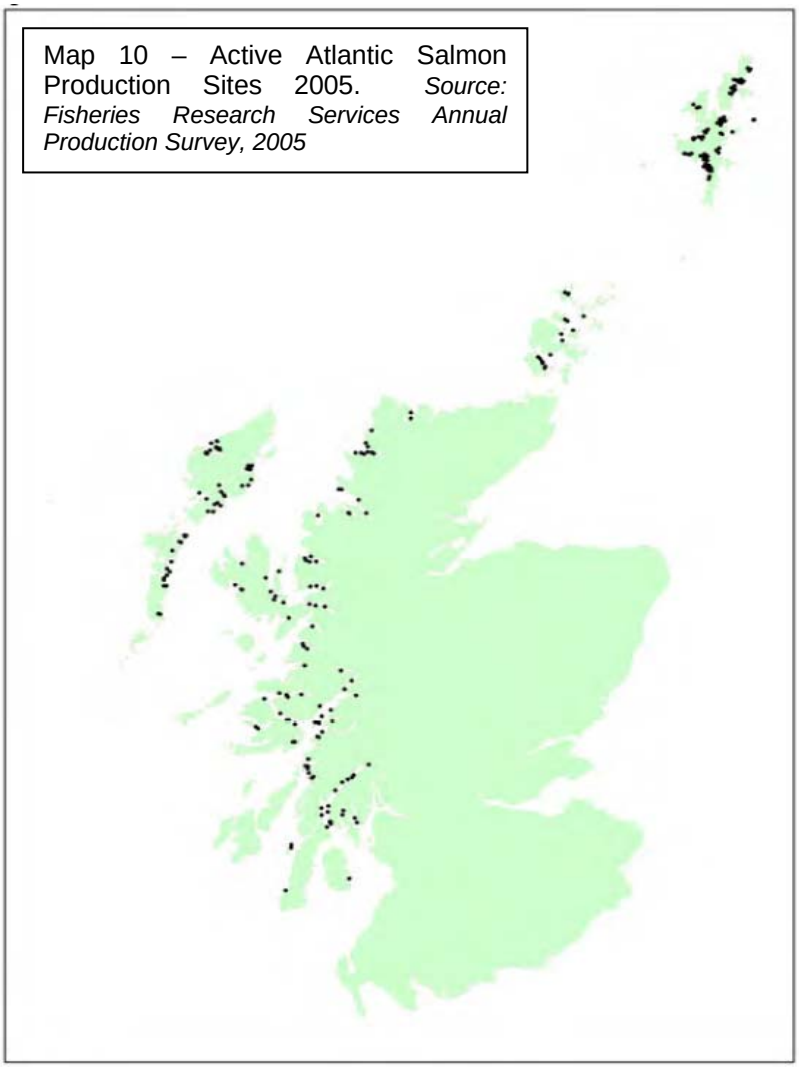
Source: Scottish Executive 2004

11.2.1 Agriculture and forestry

There is a significant agricultural sector in Scotland, employing 28,645 full-time, 35,709 part-time and nearly 4,000 casual and seasonal workers. Agriculture and forestry

account for almost 1.50% of gross value added to the Scottish economy. Water is essential to the agricultural sector for irrigation, drinking water for livestock and cleaning. Agriculture and forestry is responsible for around two-thirds of all diffuse pollution pressures.

11.2.2 Aquaculture



Map 10 – Active Atlantic Salmon Production Sites 2005. *Source: Fisheries Research Services Annual Production Survey, 2005*

Over the past 20 years commercial aquaculture in Scotland has become a successful and significant economic sector. It is now estimated to contribute over half the value of food exports from Scotland. The industry is an important employer especially in the Western Isles, Shetland Isles and the rural north and west. Several thousand people are employed directly and indirectly in the industry. These jobs are particularly important in sustaining the economic viability of these remote regions.

In terms of volumes of production, the most significant component is salmon farming in marine cages. Production of this kind rose from about 5,000 tonnes of production per year in the 1980s to around 150,000 tonne per year by 2006. The average size of a marine fish farm also increased in size from about 85 tonnes biomass in 1985 to around 1,000 tonnes biomass in 2006. Map 10 shows the locations of the active production sites in 2005

The production of eggs and young fish requires freshwater facilities. These consist of hatcheries and cages in freshwater lochs, with the stock being moved to sea cages to complete their growth cycle.

In addition to the production of young salmon, there is a significant freshwater industry in the form of land-based tank farms and cage sites in lochs producing rainbow trout and, in some cases, brown trout for the table and restocking of game fisheries. There is also a small but growing industry producing marine fish (primarily cod) but also small quantities of other species such as halibut and haddock. Arctic charr have also been grown on a small scale at freshwater sites.

Aquaculture sites can have environmental effects upon water quality. The types of effects are summarised in section 5. Discharges from aquaculture sites are regulated by SEPA.

11.2.3 Fisheries management

Fish stocks are a complex and precious resource which require expert management to sustain stocks. 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.

11.2.4 Mining and quarrying

Mining and quarrying accounts for 1.1% of employment and 2.13% of the gross value added to the Scottish economy, with the majority of this value attributable to the mining of energy producing materials. Water use in the mining sector consists of diverting groundwater and drainage with subsequent consented discharges from settlement tanks.

11.2.5 Oil and Gas Production and Refining

Scotland is a focus in the UK for production of oil and gas. None of the oil and gas fields are within the RBD (which extends to three miles off shore) however, processing and storage is within the RBD and is significant for the Scottish economy. There are oil terminals at Flotta, Nigg, Sullom Voe, Grangemouth, Dalmeny and Cruden Bay, and a gas terminal at St. Fergus. Refining takes place at two locations in Scotland: oil refining at Grangemouth and specialist lubricant and bitumen refining at Dundee. Oil refining and fuel processing use some mains supplied water (estimated at 1,350 m^3/day for large users, which is likely to cover all use in such a concentrated sector) and also abstracted fresh water; estimated at 15,000 m^3/day.

11.2.6 Food processing

Food processing in Scotland is a diverse industry, although the main economic contribution from the sector is in meat and fish production. The volume of water abstracted by organisations in the food processing sector was estimated as part of the study of abstraction in Scotland. This study estimated the total mean use of water as 8,000 m^3 for fish processing, 49,000m^3 for vegetable processing, 63,000 m^3 for meat processing and 117,000 m^3 for dairy processing. Of these, direct abstraction was most common for vegetable processors, with a mean of 45,000 m^3, with limited abstraction in the other sectors.

11.2.7 Production of alcoholic beverages

Scotland is noted for its production of Scotch whisky, and the sector is important both economically and culturally. There are just over one hundred distilleries in Scotland, spread in particular across the Highlands, and concentrated along the River Spey. Around 41,000 jobs depend on the production of whisky, with just over 9,500 employed in production itself and a further 20,000 jobs in businesses supplying goods and services. Whisky production also supports Scottish agriculture, and uses approximately 390,000 tonnes of barley and 486,000 tonnes of other cereals each year. The sector also generates over £800 million of income (principally in wages and salaries). The precise volume of water used in whisky production is difficult to calculate. Estimates show that malt distillers abstract 76.49 million m^3 each year.

11.2.8 Production of mineral waters and soft drinks

The Scottish mineral water companies supply approximately 35% of the UK consumption of bottled water, which was 1.8 billion litres in 2002. The production of mineral water in Scotland, as elsewhere, requires brands to be linked to specific springs. However, in some places more than one brand is linked to a single spring. Based on satisfying 35% of UK consumption, Scottish companies produced approximately 630 million litres (630 million m^3) in 2002. More than half of this comes from the main producer of bottled water (Highland Spring) which bottled approximately 320 million m^3. This would be consistent with the estimated sector abstraction of 687

million m^3, since this larger figure would include process water and excess water discharged immediately.

11.2.9 Manufacture of textiles and leather products

Textiles and leather is a relatively small economic sector in Scotland, accounting for only 0.87% of gross value added. However, they are significant in terms of their historic contribution to Scotland and also in terms of water use. The tannery sector is an intensive water user; with approximately 20 m^3 of water required to process 1 tonne of raw hide into 300 kg of saleable leather. Both private and public water supplies are used. Due to the organic content of the tannery effluent (which requires treatment before discharge) and the urban location of the tanneries, primary effluent treatment is typically provided before discharge to mains sewers.

11.2.10 Manufacture of wood, pulp and paper products

Wood, paper and pulp employs 3,380 people to produce approximately 1.25 million tones of paper per year (*Confederation of Paper Industries 2004*), accounting for 2.31% of gross value added in Scotland (National Statistics, 2003). Although the manufacture of paper is part of a chain from forestry through to manufacture, the industry in Scotland is focused around the manufacture of paper, and most mills import treated woodpulp for raw material. There are twelve paper mills in Scotland, concentrated in the Forth/Clyde valley and around Aberdeen where they were historically situated in proximity to suppliers and markets in towns as well as close to water sources for production processes.

11.2.11 Chemicals

The chemicals sector is a significant water user in Scotland, both in terms of volume used and the resultant discharge. The largest company in the sector is operated by BP Chemicals at Grangemouth, although there are also a large number of small chemical companies. It is an extremely varied sector producing a wide range of different organic and inorganic chemical products. Processors may use large volumes of water for processing, generating steam for heating, cooling, and cleaning equipment and chemicals. Although there is reliance on mains water, sea water is often used for cooling and there is some abstraction in the sector in Scotland with grey water also used for cooling at some facilities.

Water treatment may be necessary as a result of many of the processes involved in the manufacture of chemicals, from overflows of the storage tanks used for supplying the raw materials, through synthesis and product separation, to leakage from pipes during product storage. The types of pollutants from chemical production that may affect water bodies vary according to the type of chemical produced.

11.2.12 Electricity (Non–hydro)

These facilities are all located on the coast and are dependent on marine water to use in through flow systems for cooling. Although net abstraction is insignificant, the significant change to the water is through the increased temperature of discharge. Longannet and Cockenzie report an estimated use of river water of 1,587 million m^3 and 643.4 million m^3 respectively in 2002/3.

In addition to water for cooling, fresh water is used in power stations to create steam to drive the turbines and for general site use. Longannet and Cockenzie were supplied with 2.86 million m^3 and 1.51 million m^3 respectively in 2002/3. This is equivalent to 7,836 m^3 and 4,154 m^3 per day. Mains water use at the two nuclear facilities was 840,000 m^3 at Hunterston B and 341,000 m^3 at Torness for 2002/3, equivalent to 2,301 m^3/day and 934 m^3/day respectively. Future water uses in this sector may include wave and tidal power installations.

11.2.13 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 8.373km^2 of mainland Scotland. 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. The first large scale scheme development in a generation is currently under construction at Glen Doe above Loch Ness (http://www.glendoe.co.uk/).

A further 74 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.

Currently an estimated 3.355 billion m^3 of water are stored in reservoirs serving hydro schemes. It is estimated that around 10% of electricity generated in Scotland comes from hydropower. Electricity from these renewable sources is important in supporting Scotland's renewable energy production targets and in reducing carbon emissions as part of the general approach to tackling climate change.

APPENDIX C OTHER RELEVANT PLANS AND PROGRAMMES AND ENVIRONMENTAL OBJECTIVES

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

Response received from the following stakeholders:
Scottish Natural Heritage
Historic Scotland

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, Population, Human Health & Soil, Water, Climatic Factors.
The Convention on Biological Diversity	The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.	Biodiversity, Population, Human Health & Soil, Water.
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.
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	Biodiversity.

Plan name	Key policy coverage	Main SEA topics
	species, and the provision of assistance concerning legal and scientific issues.	
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.
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. 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.
UNESCO World Heritage Convention	Convention Concerning the protection of the World 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.

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 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 on wellbeing.	Overarching.
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, contains 1149 species and 65 habitats that have been listed as priorities for conservation action under the UK Biodiversity Action Plan (UK BAP). The Action Plans contain actions and targets for conserving these species.	Biodiversity.
UK Biodiversity Action Plan (BAP) Priority Habitat	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 are included.	Biodiversity.
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 target every sector of the economy and include: • 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 (eg solar panels on buildings)	Climatic Factors, Overarching.
Fisheries Management Plans	Produced by 11 Inshore Fisheries Groups in the plan area as part of the Strategic Framework for Inshore Fisheries, covering the Western Isles, Eyemouth to Montrose, Montrose to north of Peterhead, Moray Firth to Duncansby Head, north coast, west	Biodiversity, Population, Human Health & Soil, Water.

Plan name	Key policy coverage	Main SEA topics
	coast to the Skye Bridge, Small Isles and Mull, the South West, Clyde, Shetland and Orkney. Plans to include the setting out of the local objectives for the inshore fisheries in the area; outlining the actions which are required to implement local objectives; and identifying the tools required to implement objectives.	
Salmon Action Plans	Salmon Action Plans (SAPs) 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 SAP 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 SAP the Agency sought 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, Population, Human Health & Soil, Water.
Conserving Biodiversity - The UK Approach	This statement has been prepared by the UK Biodiversity Standing Committee1 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.
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 the developed, undeveloped and isolated coast. • 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.	Biodiversity, Landscape, Overarching.

Plan name	Key policy coverage	Main SEA topics
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.	Cultural Heritage, Landscape.
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 action designed to achieve conservation objectives, including implications for development plans and development control.	Cultural Heritage, Landscape.
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. 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.	Overarching.
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.	Population, Human Health & Soil, Climatic 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, Soil.

Plan name	Key policy coverage	Main SEA topics
Scottish Rural Development Programme (2007-2013)	Provides framework for EU funding of Rural Development Programme. This has 3 main themes: • underpinning performance and quality in the agriculture, food processing and forestry sectors; • enhancing rural landscapes and the natural heritage; and • promoting a more diverse rural economy and thriving rural communities.	Cultural Heritage, Landscape, Soil, Overarching.
A Forward Strategy for Scottish Agriculture – Next Steps	Updates "A forward for Scottish Agriculture" (2001) which outlined a general direction for the farming and food industry. Focuses on key actions which address most important and urgent challenges facing farmers, crofters and other land managers. • outlines a vision for "a prosperous and sustainable farming industry; • focussed on producing food and other products for the market; • driving sustainable rural development and helping rural communities prosper; • leading the protection and enhancement of the environment; • contributing to key objectives on animal health and welfare, and human health and well-being; and • keen to embrace change and market opportunities.	Soil.
Scottish Forestry Strategy	Scottish Executive's framework for taking forestry forward through the first half of this century and beyond. Based on four key principles: • sustainable development – underpinned by sustainable forest management; • social inclusion - through helping to provide opportunities for all, and helping to build stronger communities; • forestry for and with people; and • integration with other land uses and businesses. 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.	Biodiversity, Climatic Factors, Soil.
Scottish Water - Strategic Asset Capacity and Development Plan	Scottish Water is required to produce an annual report assessing the strategic capacity of water and waste water infrastructure and setting out its future development plans. Sets out the services and investment that it intends to undertake in order to meet its environmental obligations.	Population, Human Health & Soil, Water.
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 2006-2010 these objectives will deliver the following outcomes through a combination of improved operating practices and £2.45bn of investment:	Population, Human Health & Soil, Water.

Plan name	Key policy coverage	Main SEA topics
	• 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 2250 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 measures by the Overall Performance Assessment (OPA) methodology; and • reduce leakage in line with WICS targets.	
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.	Population, Human Health & Soil, Water.
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.	Other.
Scottish Biodiversity Strategy "Scotland's Biodiversity: It's in Your Hands"	Aim To conserve biodiversity for the health, enjoyment and wellbeing 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.

Plan name	Key policy coverage	Main SEA topics
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.	Climatic Factors, 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. 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.	Cultural Heritage.
Scottish Historic Environment Policy 1 - Scotland's Historic Environment	SHEP 1 is the overarching policy statement for the historic environment. It provides a framework for more detailed strategic policies and operational policies that inform the day to day work of a range of organisations that have a role and interest in managing the historic environment. These include the Scottish Government, local authorities and the range of bodies that are accountable to Scottish Ministers. SHEP 1 and the subsequent documents in the series are intended to sit alongside and complement the Scottish Planning Policy series and other relevant Ministerial policy documents. They are also intended to be relevant documents in the statutory planning, Environmental Impact Assessment (EIA) and	Cultural Heritage.

Plan name	Key policy coverage	Main SEA topics
	Strategic Environmental Assessment (SEA) processes.	
Scottish Historic Environment Policy 2 - Scheduling: Protecting Scotland's nationally important monuments	SHEP 2 sets out Scottish Ministers' policy for the identification and designation of nationally important ancient monuments. This process plays an important part in the conservation of evidence for Scotland's past. Ancient monuments ranging from the 6000-year-old structures created by the first farmers in Scotland to the remains of defences from 1940, offer a tangible physical link with the past. They are a finite and non-renewable resource containing unique information and have the potential to contribute to increasing our knowledge of our past. Such remains are part of Scotland's identity and are valuable both for their own sake and as a resource for research, education, regeneration, leisure and tourism. The remains are often very fragile and vulnerable to damage or destruction and care must be taken to ensure that they are not needlessly damaged or destroyed.	Cultural Heritage.
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.
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.	Population, Human Health & Soil, Water.
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.	Landscape.
Land Reform (Scotland) Act 2003	The Land Reform (Scotland) Act 2003 establishes statutory rights of access to land and inland water for outdoor recreation.	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	Landscape.

Plan name	Key policy coverage	Main SEA topics
	have developed in recent years and builds upon interim guidance which was the subject of consultation in 1999 [1]. 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.	
NNPG 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.
NNPG 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 NPPG5 Archaeology and Planning, which sets out the role of the planning system in protecting ancient monuments and archaeological sites and landscapes. This NPPG sets out the Government's planning policies in relation to the historic environment with a view to its protection, conservation and enhancement. Central to the Government's approach is the need to secure preservation whilst accommodating and remaining responsive to present day needs. The guidelines have been prepared on the basis of the existing statutory framework for planning, listed buildings and conservation areas. The primary source of guidance on the Secretary of State's interests and responsibilities in relation to listed buildings and conservation areas is provided in the Memorandum of Guidance on Listed Buildings and Conservation Areas (revised 1998).	Cultural Heritage.
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.	Biodiversity, Population, Human Health & Soil, Water.
Structure Plans	Provide strategic framework for land use planning on a regional council wide basis.	Overarching.
Local Plans	Set out detailed policies and specific proposals for the development and use of land that guide day-to-day planning	Overarching.

Plan name	Key policy coverage	Main SEA topics
	duties. Identify effective opportunities for development and encourage investment in the area. Must conform to the Structure Plan and be reviewed on 5 year cycle.	
Community Plans	Process to enable greater collective engagement of public sector with communities. Under the Local Government in Scotland Act 2003 Local Authorities have the power to promote community wellbeing and a statutory duty to initiate and facilitate the community planning process.	Overarching.
Catchment Management Plans	A voluntary process by which partnership of key individuals and organisations are encouraged to work together for the benefit of whole catchments 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.	Biodiversity, Water, Overarching.
Indicative Forestry Strategies	Produced by Local Authorities to guide where most suitable locations for woodland planting and expansion would be most likely to be acceptable. Incorporated into structure plans.	Biodiversity, Landscape, Soil.
Local Biodiversity Action Plans (LBAP)	Identifies environmental objectives and targets which must be secured and around which development can be planned, enabling councils to put biodiversity into decision-making and planning across council services and activities. An LBAP therefore helps Local Authorities safeguard their most vulnerable or important species and habitats.	Biodiversity.
Natura 2000 relevant plans and Programmes – e.g. site monitoring and management plans	The Habitats Directive (Council Directive 92/43/EEC) sets out the requirement for assessment of plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Habitats Directive Assessment (HAD) and states: *" (3) Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subject to Appropriate Assessment of its implications for the site in view of the site's conservation objectives…"*	Biodiversity.
Shoreline Management Plans	Non-statutory plans for areas where coastal erosion is identified as a problem. Prepared by planning authorities in association with adjoining authorities and other sources. These plans consider the implications of alternative means of dealing with coastal erosion and outline a strategy for coastal defence. They	Biodiversity, Population, Human Health & Soil, Landscape.

Plan name	Key policy coverage	Main SEA topics
	should also identify the implications for development plan policies and development control decisions, highlighting opportunities for maintaining and enhancing the natural environment. Arrangements for monitoring the natural coastal processes are also set out, along with the effect of the coastal defence strategy. Eight exist in Scotland.	
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.	Biodiversity, Population, Human Health & Soil, Water.
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.	Biodiversity, Water, Soil.

APPENDIX D NATIONAL ASSESSMENT TABLES

Reference/Baseline

Diffuse Pollution

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	All sectors	Reference/Baseline	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, population & human health, water and soil, a positive or negative effect on 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)	Reference/Baseline	Regulations, guidelines and standards to reduce pollutant loads to water bodies	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?	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, population & human health, water, climate and soils, and not significant for the other SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Agriculture (non-regulatory)	Reference/Baseline	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)	Reference/Baseline	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)	Reference/Baseline	Regulations to reduce diffuse pollution	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?	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)	Reference/Baseline	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 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 ?			
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)	Reference/Baseline	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)	Reference/Baseline	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)	Reference/Baseline	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 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?			
		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?	Positive short-term effect		
		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	Agriculture (non-regulatory)	Reference/Baseline	Emission Trading Scheme	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?	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)	Reference/Baseline	Forests and Water Guidance	11

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 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)	Reference/Baseline	GBRs to reduce urban diffuse pollution	12

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 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)	Reference/Baseline	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	All sectors	Reference/Baseline	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?			
		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	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)	Reference/Baseline	Regulations, guidelines and standards to reduce pollutant loads to water bodies	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?	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)	Reference/Baseline	Education, advice & campaign awareness	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?	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)	Reference/Baseline	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)	Reference/Baseline	Regulations to reduce diffuse pollution	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 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)	Reference/Baseline	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 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 ?			
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?			
		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 (non-regulatory)	Reference/Baseline	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)	Reference/Baseline	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 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?			
		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)	Reference/Baseline	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 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?			
		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?	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	Agriculture (non-regulatory)	Reference/Baseline	Emission Trading Scheme	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?	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)	Reference/Baseline	Forests and Water Guidance	11

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 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)	Reference/Baseline	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)	Reference/Baseline	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 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 targetting of awareness raising.

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Sea and Coastal transport (not a SWMI issue)	Reference/Baseline	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 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?	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	Reference/Baseline	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, 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 measures have short-term positive effects on biodiversity, population & human health and water, and are not significant for the remainder of the SEA topics					

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	All sectors	Reference/Baseline	Remediation of sediment and water	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 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, 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

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	All sectors	Reference/Baseline	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 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 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)	Reference/Baseline	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 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 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, population & human health, water and material assets and negative and positive effects on climate factors and no significant effect on the other SEA topics

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Sewage disposal (non-regulatory)	Reference/Baseline	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)	Reference/Baseline	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 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 & human health and water, positive & negative for 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)	Reference/Baseline	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)	Reference/Baseline	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, population & human health and water, positive & negative for climate factors and not significant for the remainder of the SEA topics

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Manufacturing (non-regulatory)	Reference/Baseline	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)	Reference/Baseline	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 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 & human health and water, positive and negative for 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)	Reference/Baseline	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, population & human health and water, positive and negative for 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	Reference/Baseline	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 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 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	Reference/Baseline	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? Provide effective protection of designated sites? Contribute to UK Biodiversity Action Plan objectives? Support delivery of biodiversity strategies? Reduce impacts by alien species?	Positive short-term effect	pos.S	
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?	Positive short-term effect	pos.S	
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?	No significant effect	NS	
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Promote sustainable flood management? 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?	No significant effect	NS	
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? Protect and, where appropriate, enhance or restore landscape character and quality? Protect and, where appropriate, enhance or restore landscape value and local distinctiveness?	No significant effect	NS	
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)?	No significant effect	NS	
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?	No significant effect	NS	

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)	Reference/Baseline	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)	Reference/Baseline	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)	Reference/Baseline	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?	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?	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)	Reference/Baseline	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 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?	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)	Reference/Baseline	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 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	Agriculture irrigation (non-regulatory)	Reference/Baseline	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 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?	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)	Reference/Baseline	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)	Reference/Baseline	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 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
		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, population & human health, water and climate factors, and have no significant effects on cultural heritage, landscape,material assets and soil.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Agriculture (regulatory)	Reference/Baseline	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 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?	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, population & human health, water and climate factors, and have no significant effects on cultural heritage, landscape,material assets and soil.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Agriculture (non-regulatory)	Reference/Baseline	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 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	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, population & human health, water and climate factors, and have no significant effects on cultural heritage, landscape,material assets and soil.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Agriculture (non-regulatory)	Reference/Baseline	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 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	Forestry (regulatory)	Reference/Baseline	Regulations to reduce the impacts of Forestry on morphology	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	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, population & human health, water and climate factors, and not significant for cultural heritage, landscape, material assets and soils.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Forestry (non-regulatory)	Reference/Baseline	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, population & human health, water and climate, and not significant for soils, material assets, landscape character and cultural heritage.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Forestry (non-regulatory)	Reference/Baseline	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 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?			
		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)	Reference/Baseline	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 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	
		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, population & human health, water, climate factors, and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Land reclamation (non-regulatory)	Reference/Baseline	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 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?			
		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)	Reference/Baseline	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 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.	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)	Reference/Baseline	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 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?			
		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.					

Draft RBMP

Diffuse Pollution

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	All sectors	Draft RBMP	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 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	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?			
		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	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, population & human health, water and soil, positive and negative for climate factors and not significant for the other SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	All sectors	Draft RBMP	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, population & human health and water, negative and positive for 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	Draft RBMP	Reduce diffuse source inputs: reduce sources from built environment	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	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, population & human health, water and soils, negative and positive effects on climate factors and no significant effect on cultural heritage, landscape and material assets.

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	All sectors	Draft RBMP	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 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?	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?	No significant 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	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, population & human health, water,climate factors, material assets and soil, and no significant effect on cultural heritage and landscape.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Agriculture (regulatory)	Draft RBMP	Silage, Slurry and Fuel Oil (SSAFO) Regulation (SSAFO amendments)	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	
		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?			
		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 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, population & human health, water and soils, and a positive and negative effect on climate factors, and no significant effect on cultural heritage, landscape and material assets.					

	Pressure	Sector	Option	Measure	Measure No.
	Diffuse pollution	Urban development (regulatory)	Draft RBMP	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. 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?	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?	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	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, population & human health, water, soil 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. 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 ?	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.

	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. 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?	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	All sectors	Draft RBMP	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 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?	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, population and human health, and water, positive and negative effects on climate factors and no significant effect on the remaining SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	All sectors	Draft RBMP	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, population and human health, and water, positive and negative effects on climate factors and no significant effect on the remaining SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	All sectors	Draft RBMP	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 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 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, 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 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	Draft RBMP	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 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 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 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.					

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	All sectors	Draft RBMP	IPPC/CAR: change timing or frequency of discharge (where new standards)	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 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, population & human health, water and material assets and negative and positive effects on climate factors and no significant effect on the other SEA topics.					

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Sewage disposal (regulatory)	Draft RBMP	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 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, population & human health and water, positive and negative for climate factors and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Sewage disposal (regulatory)	Draft RBMP	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 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	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?	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, population & human health and water, positive and negative for climate factors and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Sewage disposal (regulatory)	Draft RBMP	Habitats Directive review of consents	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 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, population & human health, water and climate factors, and not significant for all the other SEA topics.

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

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 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, population & human health and water, positive and negative for climate factors and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Sewage disposal (regulatory)	Draft RBMP	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?			
		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	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, population & human health and water , negative and positive for 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)	Draft RBMP	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, population & human health and water, positive and negative for climate factors and not significant for the remainder of the SEA topics.

	Pressure	Sector	Option	Measure	Measure No.
	Point source pollution	Manufacturing (regulatory)	Draft RBMP	CAR 2005: Priority substances (2008)	14

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 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, population & human health and water, positive and negative for 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	Draft RBMP	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	Draft RBMP	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	Draft RBMP	CAR control abstraction: reduce leakage	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 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	Draft RBMP	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	Draft RBMP	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 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	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	Draft RBMP	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?	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 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	Draft RBMP	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 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 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	Draft RBMP	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 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 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	Draft RBMP	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	Draft RBMP	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 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	Draft RBMP	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 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?	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 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	Draft RBMP	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?	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 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	Draft RBMP	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	Draft RBMP	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?	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 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)	Draft RBMP	CAR 2005: SEPA controls on licensed hydropower schemes	15

SEA topic	A. SEA Objective - to what extent will the RDMP...	B. Asssessment Criteria - to what extent with the RDMP...	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	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)	Draft RBMP	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?			
		Promote sustainable flood management?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Contribute to the mitigation of floods and droughts?	No significant effect	NS	
		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 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)	Draft RBMP	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?	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 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)	Draft RBMP	CAR 2006: 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 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	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					

Changes to Morphology

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	Draft RBMP	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 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?			
		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?			
		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	Draft RBMP	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 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?	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, 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.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	Draft RBMP	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?			
		Promote sustainable flood management?			
Climate factors	4. Contribute to mitigation of, and adaptation to, climate change	Contribute to the mitigation of floods and droughts?	No significant effect	NS	Minor positive effects for flooding, but this will depend on the design of the measure
		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	Draft RBMP	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	Draft RBMP	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 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.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	Historical engineering activities & urban development (regulatory)	Draft RBMP	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 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?			
		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)	Draft RBMP	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)	Draft RBMP	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 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?			
		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	Draft RBMP	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 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	
		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	Draft RBMP	Control alien species: eradicate in situ	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?	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 minmimise 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 minmimise 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	Draft RBMP	Control alien species: capture & remove	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?	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 minmimise 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 minmimise 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	Draft RBMP	Control alien species: prevent introduction	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?			
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.

Option 3

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 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 ?			
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)	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, population & human health and water. Cultural heritage,landscape, material assets and soil where there will be no significant effect and on climate factors 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	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 RDMP...	B. Asssessment Criteria - to what extent with the RDMP...	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	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?	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	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 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?	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, 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.

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	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, 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	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	Historical engineering activities & urban development (regulatory)	Closing the gap	Restoration policy for taking forward restoration work	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?	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)	Closing the gap	Restoration investment to remove abandoned structures such as old embankments	6

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 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 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 health and water, positive and negative for climate factors and not significant for the remainder of the SEA topics.

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

Invasive non-native species

	Pressure	Sector	Option	Measure	Measure No.
	Changes to morphology	All sectors	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.					

Summaries

Baseline/Reference

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	OBRs 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 assests 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 targeting 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.

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: 2006-2014 (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	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.
	Agriculture irrigation (regulatory)		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.

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.

Continued Improvement

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 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	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.

APPENDIX E HABITATS DIRECTIVE ASSESSMENT

HABITATS REGULATIONS ASSESSMENT
Screening Assessment

Scotland and Solway Tweed River Basin Management Plans
National Measures

October 2008

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HABITATS REGULATIONS ASSESSMENT
Screening Assessment

Scotland and Solway Tweed River Basin Management Plans
National Measures

date:	14 October 2008	
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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 Continued Improvement 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.[12] 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[13] 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

[12] 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."]

[13] 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).

consideration under regulation 48 will be required at each step of the process.]

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).[14]

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

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

90% of drinking water supplies come from surface waters, the remainder from groundwater.

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.[15]

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.

[15] 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).'[16]

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

[16] 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.[17] 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.

[17] 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: Continued Improvement	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

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.

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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: Continued Improvement	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 downstream 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	

	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: Continued Improvement	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	

			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

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.

Figure F1 below shows a conceptual illustration of the ways these considerations can be made.

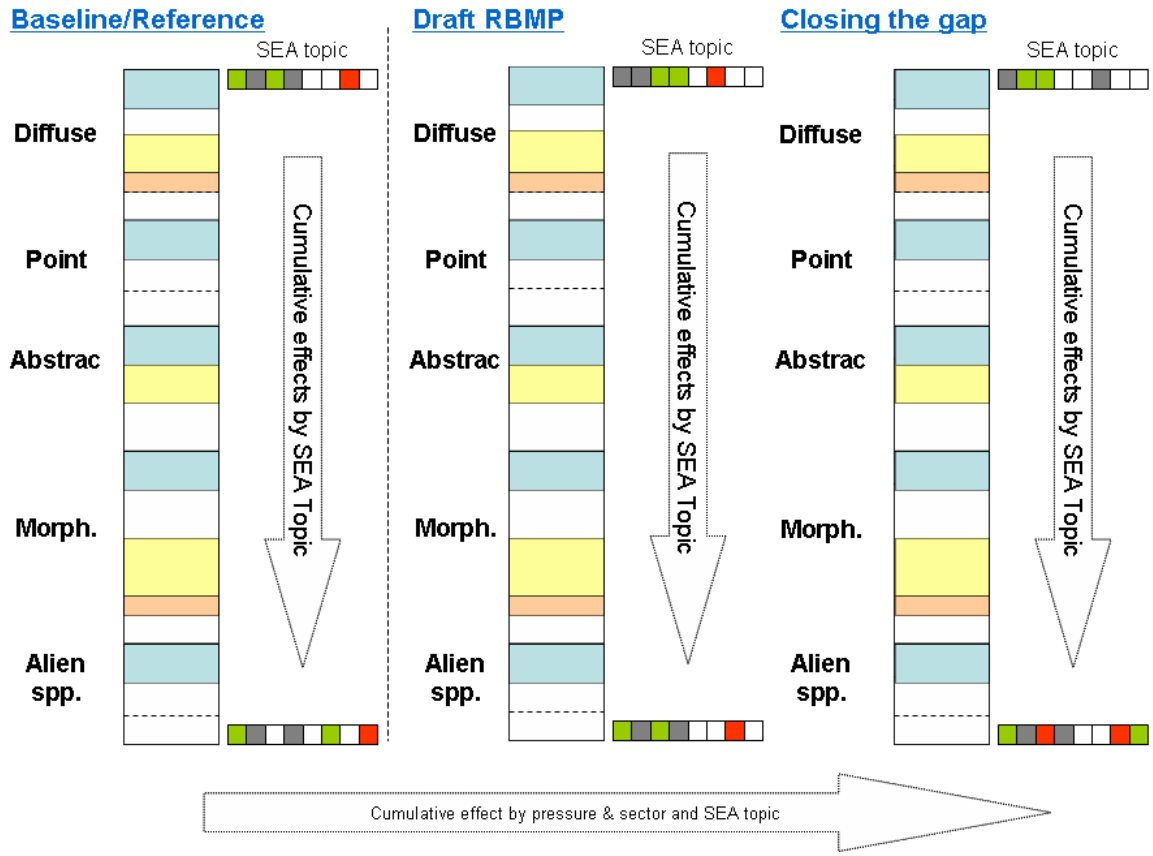

Figure F1 – Conceptual diagram explaining the assessment of effects within and between options

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 Continued Improvement 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 Figure F1.

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 the main report 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 the 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[18] 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

[18] 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[19] 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[20] 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

[19] The UK Forestry Guidelines are already in place.
[20] 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[21] 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.

[21] 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. Continued Improvement

Diffuse pollution

There are no national or regional measures to tackle diffuse pollution for Continued Improvement.

Point source pollution

There is one national regulatory measure to tackle point source pollution for Continued Improvement; 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 Continued Improvement.

Changes to morphology

There are a number of national and regional regulatory Continued Improvement 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 Continued Improvement 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.