



Water for life and livelihoods

River Basin Management Plan
North West River Basin District

Annex C: Actions to deliver
objectives

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C.1 Introduction

This annex sets out tables of the actions (the programmes of measures) that are proposed for each sector. Actions are the on the ground activities that will be implemented to manage the pressures on the water environment and achieve the objectives of this plan.

Further information relating to these actions and how they have been developed is given in:

- Annex B: Objectives for waters in the North West River Basin District
This gives information on the current status and environmental objectives that have been set and when it is planned to achieve these.
- Annex D: Protected area objectives (including programmes for Natura 2000)
This gives details of the location of protected areas, the monitoring networks for these, the environmental objectives and additional information on programmes of work for Natura 2000 sites.
- Annex E: Actions appraisal
This gives information about how we have set the water body objectives for this plan and how we have selected the actions.
- Annex F: Mechanisms for action
This sets out the mechanisms - that is, the policy, legal, financial and voluntary arrangements - that allow actions to be put in place.

The actions are set out in tables for each sector. For the purposes of this plan this is the sector that may be causing the pressure or is being affected by an action. 'Being affected' may mean that the sector is the one taking action or that the sector's activities are affected by an action implemented by others. Some actions will be noted against more than one sector, as one sector may be implementing action that requires another to take action in response. The sectors are set out in table C1a below.

The tables set out the list of actions established at the outset of this plan period. It is expected that further measures will be identified during the implementation period for this plan. The plan includes many investigations that will help identify future actions, where it has not yet been possible to define these (see Annex E). In some cases investigations are needed to confirm the pressure that is causing a problem, even before it will be possible to define an action. The Environment Agency also encourage sectors to put forward other measures so that these can be considered during the period of this plan.

Table C1b sets out an explanation of the headings in the actions tables. The subsequent tables set out specific actions relevant to each sector.

Table C1a: **Sectors**

Standard list of sectors			
Sector	Activity included	Sector	Activity included
Agriculture and rural land management	Dairy / beef, sheep, pig and poultry (including outdoor pigs) Mixed and Arable Horticulture Forestry Land drainage (including Inland Drainage Boards) Other rural land development Private water supplies (potable supplies) protection Private sewage management (incl. septic tanks and private sewage systems)	Local and regional Government	Local and regional government including planning authorities and national parks (including local authority urban drainage not covered by Water Industry) Private water supplies - (potable supplies - water quality and sufficiency) Contaminated land
Angling & conservation	Fisheries (angling) management Other habitat management (including conservation)	Mining and quarrying	Active mines and quarries Abandoned coal mines Abandoned other mines
Central Government	Department for the Environment, Food & Rural Affairs (Defra) Natural England Other central government organisations and agencies	Navigation	Ports / marinas Maritime shipping / boating Inland navigation
Environment Agency		Urban and transport	Private water supplies (potable supplies) protection Private sewage management (inc. caravan parks etc)

			<p>Road, air & rail transport</p> <p>Contaminated land</p> <p>Flood risk management</p> <p>Other development activities</p>
<p>Industry, manufacturing and other business</p>	<p>Power generation</p> <p>Chemical industry</p> <p>Oil industry</p> <p>Small & Medium-sized Enterprises (SMEs) / Industrial estates</p> <p>Construction</p> <p>Aquaculture</p> <p>Commercial fisheries (fresh, transitional & coastal waters – not angling)</p> <p>Waste management</p> <p>Retail industry</p> <p>Food & drink industry</p> <p>Recreation & tourism (not covered by boating or angling e.g. parkland / amenity)</p>	<p>Water industry</p>	<p>Sewage - treatment</p> <p>Sewage - collection (including intermittent discharges from combined sewage overflows)</p> <p>Sewage - other drainage (inc flooding & leaking sewers)</p> <p>Sewage - trade effluent management</p> <p>Sludge recycling to land</p> <p>Potable supply – treatment</p> <p>Potable supply – storage & transfer (inc. leakage)</p> <p>Potable supply - planning</p>

Table C1b: **Example table of headings and descriptions**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
The pressure being managed	The action that will be taken	The location or geographical extent of the action	The date by which the action will be put in place (“Implemented” means that the action is already in place and able to have a beneficial effect)	The organisation responsible for delivering the action and other organisations that may be involved
Investigations				
Sets out investigative measures that will be put in place				
Natura 2000 protected areas and SSSIs				
Sets out measures that will be put in place for Natura 2000 protected areas and Sites of Special Scientific Interest				
Investigation - Natura 2000 protected areas and SSSIs				
Sets out investigative measures that will be put in place for Natura 2000 protected areas and Sites of Special Scientific Interest				

Strategic environmental assessment and actions

The purpose of the river basin management plan is to improve the ecological status and potential of water bodies and so the environmental effects of the plan are predominantly positive. A Strategic Environmental Assessment was carried out that also considered the wider environment and identified potential adverse effects associated with some of the actions, as well as enhancements to add value to the measures included in the plan. Whilst many of the proposals to mitigate negative impacts are specific to the proposed action, others are applicable across a range of actions and will be considered at a project level. These generic mitigation measures are described in the table below. Further information is included in the statement of particulars – see <http://www.environment-agency.gov.uk/research/default.aspx> and go to Water Framework Directive..

Table C1c: **Generic mitigation to be applied when implementing actions**

Impact	Mitigation
Population and human health	Avoid adversely affecting existing routes of public access to the countryside and water bodies.
	Identify opportunities to improve public access to the countryside, water bodies or water based recreation
Biodiversity	Target any actions designed to improve biodiversity to those locations where the gains can be maximised.
	Identify opportunities to link with existing ecological networks, sites or features or proposed improvements.
	Identify opportunities where biodiversity improvements can also benefit local populations.
Cultural heritage	Before undertaking an action, determine whether there are any historical features that are likely to be adversely affected and undertake an appropriate level of project level assessment and mitigation.
Sustainability	Adopt a sustainable procurement policy
	Reuse materials or use recycled materials or those from renewable sources where possible
	Implement a waste management plan to minimise waste directed to landfill.
	Take steps to minimise the 'carbon footprint' of the action by reducing energy demand and the 'embedded energy' of any materials used.
Agriculture & biodiversity	Align agri-environment schemes to achieve biodiversity benefits and complement other biodiversity initiatives.

Habitats Regulations Assessment

A Habitats Regulations Assessment of this Plan was carried out by the Environment Agency in 2009. Natural England were consulted on the assessment and we have considered their advice.

Many of the measures in the Plan, most specifically those in Annex D, are designed to improve the water environment and help to maintain or restore Natura 2000 habitats and species at favourable conservation status. The overall purpose of the plan is to ensure no deterioration of the water environment and deliver the objectives of individual water bodies (normally 'good ecological status'). However, the Habitats Regulations Assessment has identified certain types of measure in the plan with potential to negatively affect Natura 2000 sites. Whether a negative effect is likely depends on the exact location, spatial scale, nature and timing of the measure. The details necessary to make reasonable predictions about the effects on Natura 2000 sites will not be developed until the measures are progressed towards implementation.

We have concluded that the plan itself is unlikely to have any significant negative effects on any Natura 2000 sites. The Plan itself does not require further assessment under the Habitats Regulations. This conclusion is reliant on the fact that before any measures in the plan are implemented they must be subject to the requirements of the Habitats Regulations. Any plans, project or permissions required to implement the measures must undergo an appropriate assessment if they are likely to have a significant effect.

Responsibility for Habitats Regulations Assessment of plans, projects or permissions required to implement the measures in this Plan remains with the relevant competent authority, for example if the measure requires planning permission the Local Authority will be the relevant competent authority. In most circumstances, a competent authority can only agree to a plan, project or permission when it has ascertained that it will not adversely affect the integrity of a Natura 2000 site. Changes to the measures in this plan may be required to avoid adverse effects on the integrity of any Natura 2000 sites.

C.2 Actions we can all take

There are actions that we can all take to help protect and improve the water environment.

Table C2: **Actions we can all take**

Pressure	What will happen
Prevent pollution	Check that household appliances are connected to the foul sewer, not the surface water drain.
Prevent pollution	Adopt-a-beach to help keep beaches clean and stop litter at source.
Prevent pollution	Ensure household oil storage is in good condition, with an up-to-date inspection record.
Prevent pollution	Ensure septic tanks or private sewage treatment plants are well maintained and working effectively.
Prevent pollution	Put cotton buds and other litter in the bin, not down the toilet. It may end up in the sea where it can harm wildlife.
Prevent pollution	Take waste oil and chemicals such as white spirit to a municipal recycling facility: don't pour them down the sink or outside drains.
Prevent pollution	Use kitchen, bathroom and car cleaning products that don't harm the environment, such as phosphate-free laundry detergents, and use as little as possible. This helps prevent pollution at source.
Prevent pollution	Report pollution or fly-tipping to the Environment Agency on 0800 807060.
Prevent pollution, protect wildlife	Adopt-a-river to spot pollution, invasive non-native species, and take part in practical tasks.
Protect wildlife	Eat fish from sustainable sources, caught using fishing methods that don't cause damage to marine wildlife and habitats.
Protect wildlife	Eliminate invasive non-native species from gardens. They can have a negative effect on native species and the water environment. Please dispose of them responsibly.
Save water: in your garden	Choose plants that tolerate dry conditions. To help lawns through dry periods, don't cut them too short.

Pressure	What will happen
Save water: in your garden	To save water in gardens, collect rain in a water-butt, water at the beginning or end of the day, mulch plants, and use watering cans where possible instead of sprinklers or hosepipes.
Save water: in your house or office	Purchase low energy and water use appliances
Save water: in your house or office	Ask water companies to fit a meter. On average, this can reduce household water consumption.
Save water: in your house or office	Fix dripping taps, and lag pipes to avoid them bursting in freezing weather.
Save water: in your house or office	Hand wash cars
Save water: in your house or office	Consider installing a greywater recycling system in homes, blocks or workplaces. This can save one third of domestic mains water usage.
Save water: in your house or office	Install a 'hippo' or 'save-a-flush' in toilet cisterns.
Save water: in your house or office	Install a low-flush toilet, put flow regulators on taps and showers, and install waterless urinals at work. Install aerating shower heads and tap inserts, which save up to 50% of the water used by conventional showers and taps.
Save water: in your house or office	Run dishwashers or washing machines with a full load on economy setting, and boil the minimum amount of water needed in kettles or saucepans.
Save water: in your house or office	Turn off the tap when brushing teeth, and take short showers rather than baths.
Save water: in your house or office	Wash fruit and vegetables in a bowl rather than under the running tap - and use the remainder on plants.
Save water: in your house or office	Ensure extensions or conservatories have their roof water draining into a soakaway or sustainable drainage system and are not connected to the combined sewer.
Save water: in your house or office	Ensure that any off-road parking or patio around the house use permeable materials so rain can soak into the soil.

C.3 All sectors

Many actions will apply to all sectors.

Table C3: Actions for all sectors

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction and other artificial flow pressures	Reduction in water use for specific sectors - including water efficiency plans that incorporate water reuse / recycling, rainwater harvesting and other similar methods, clean and dirty water separation	North West RBD	2012	Environment Agency
Microbiology; Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Influence Town and Country Planning Act authorisation process to help minimise risk of diffuse pollution from new developments (e.g. implement Sustainable Urban Drainage Systems (SUDS) and use of Water Resource Act Planning Guidance)	North West RBD	Implemented	Local Authorities
Sediments (as a direct pollutant); Acidification; Direct biological pressures; Microbiology; Nutrients; Organic pollutants; Physical modification; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Where appropriate, subject to the Environment Agency carrying out a 12 week public consultation and making an appropriate case to the Secretary of State, designate a limited number of Water Protection Zones. Regulatory tool to control diffuse pollution in high risk areas where other mechanisms are not working or are unlikely to work Initially around 8 candidate locations across England. Potential for designation from 2010 with possibility of further WPZs by 2012	North West RBD	2015	Environment Agency
Physical modification	Plans, processes and programmes (such as the Environment Agency Navigation and Recreation strategies) will be aligned to the requirements of hydromorphology to achieve WFD objectives (especially	North West RBD	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	ecological potential). This will be two fold i) Mitigation measures required to reach good ecological potential will be delivered through such plans will be identified and ii) the prioritisation of environmental improvements will be influenced by the specific requirements to reach WFD objectives			
Physical modification	A central spatially-enabled hydromorphological database will be created, this will provide a system that will quickly and reliably, supply data to better understand hydromorphological impacts of modifications to water bodies. it will be used to provide available hydromorphological data as an input into the approval/assessment processes for new physical modifications to ensure compliance with WFD requirements, especially those related to Article 4(7).	North West RBD	2010	Environment Agency
Sediments (as a direct pollutant); Acidification; Direct biological pressures; Microbiology; Nutrients; Organic pollutants; Physical modification; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Where appropriate, subject to the Environment Agency carrying out a 12 week public consultation and making an appropriate case to the Secretary of State, designate a limited number of Water Protection Zones. Regulatory tool to control diffuse pollution in high risk areas where other mechanisms are not working or are unlikely to work Initially around 8 candidate locations across England. Potential for designation from 2010 with possibility of further Water Protection Zones (WPZ) by 2012	North West RBD	2012	Environment Agency
Investigations				
Abstraction and other artificial flow pressures	Improve flow estimates for surface water bodies	North West	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
		RBD		
Abstraction and other artificial flow pressures	Investigate the potential for use of smart meters to increase Water Efficiency.	North West RBD	2010	Water companies
Abstraction and other artificial flow pressures	Investigations at sites identified under the Restoring Sustainable Abstraction Programme (where funded)	North West RBD	2012	Environment Agency
Abstraction and other artificial flow pressures	Review and improve Environmental Flow Indicators	North West RBD	2012	Environment Agency
Physical modification	Monitoring and investigation into mitigation measures techniques to establish the effectiveness of these measures and improve understanding of hydro-morphological interactions. Outcomes will have a national application.	North West RBD	2011	Environment Agency

C.4 Agriculture and rural land management

Agriculture dominates the landscape of the North West River Basin District, accounting for 80% of land use. Much of Cumbria and parts of Lancashire and Cheshire are remote rural; much of Cheshire and Lancashire are accessible rural; rural parts of Merseyside and Greater Manchester are on the urban fringe. Farms are mainly livestock based, which reflects the region's grass-growing capability. The dairy and red meat sectors are the most significant economically, however, arable and horticulture enterprises are also important in north Cheshire and south west Lancashire.

Agriculture, forestry and moorland management all have the potential to impact the water environment adversely. The overall number of direct pollution incidents from agriculture and forestry has decreased in recent years; however, in some areas there is the need to reduce the impact of diffuse pollution on rivers and groundwater from nutrients, sediment, fertilisers and pesticides. Many of these problems can be solved by improved soil management and adoption of best practice.

Tourism is an important element of the rural economy, worth over £11 billion. The Lake District National Park is England's largest National Park occupying 855 square miles and contains 6 national nature reserves, 16 lakes, 150 mountains, over 50 dales, around 100 Sites of Special Scientific Interest (SSSIs) and more than 40 towns and villages. Good land management not only cares for the places we value, but it can also reduce the impact on the water environment and provide cost savings for farmers as well as benefits for the wider rural economy.

Table C4: Actions for the agriculture and rural land management sector

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
TOC	Develop detailed 5-year Catchment Action Plan for Safeguard Zone. Targeted action to address diffuse pollution in the catchment	Thirlmere	2010	Water companies; local partnership
MCPA	Address issue as priority action within this England Catchment Sensitive Farming Delivery Initiative catchment (CSF)	River Wyre DS Grizedale Brook confl	2010	Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
TOC	Develop detailed 5-year Catchment Action Plan for Safeguard Zone	Arnfield Reservoir; Arnfield Reservoir	2010	Environment Agency; Water companies
TOC	Develop detailed 5-year Catchment Action Plan for Safeguard Zone	River Ribble; River Ribble	2010	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants	PRESSURE: CYPERMETHIN, MEASURE: UK-wide suspension (temporary) on use as sheep dip	North West RBD	Implemented	Veterinary Medicines Directorate
MCPA	Address issue as priority action within this England Catchment Sensitive Farming Delivery Initiative catchment	River Wyre DS Grizedale Brook confl	2010	Countryside council of Wales; Natural England
Cadmium and its compounds	Adoption of best practice farming to reduce pollution from fertilisers (Cadmium is a contaminant)	Wade Brook	Implemented	Environment Agency
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Agri-environment schemes/ Environmental Stewardship - payments for best practice to limit nitrate input and control agric-chemicals (England only)	North West RBD	Implemented	Land managers and owners
Nitrate	Comply with Environment Agency Notice (WRA S86 and S161, Groundwater Regulations, Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations 1991 and as amended 1997 (SSAFO)). Make use of site specific notices to remove nitrate pollution risk to groundwater	North West RBD	Implemented	Land managers and owners
Hazardous substances	Comply with Environment Agency Notice	North West RBD	Implemented	Land managers and

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	(Water Resources Act 1991 (WRA) S86 and S161, Groundwater Regulations, contaminated land legislation). Make use of site specific notices to remove pollution risk to groundwater			owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with new EC Sustainable Use of Pesticides Directive to control use of Plant Protection Products	North West RBD	2012	Land managers and owners
Physical modification; Abstraction and other artificial flow pressures	Contribute to favourable condition on Bar Mere Site of Special Scientific Interest (SSSI) and Betley Mere SSSI by implementing water level management plans	Weaver/Gowy Catchment	2010	Environment Agency
Physical modification	Cumbria Wetland Birds Project funds a project officer to provide face-to-face advice and agri-environment and through HLS, ELS and CSF support farmers and land managers, to deliver management and creation of floodplain wetlands.	Derwent (NW) Catchment; Kent/Leven Catchment; South West Lakes Catchment	Implemented	Royal Society for Protection of Birds
TOC	Develop detailed 5-year Catchment Action Plan for Safeguard Zone. Targeted action to address diffuse pollution in the catchment	Thirlmere	2010	Water companies; local partnership; Environment Agency
Nitrate	Development planning - planning liaison. Site specific groundwater pollution prevention advice and recommendations	North West RBD	Implemented	Local Authorities
Hazardous substances and non-hazardous	Development plans - influence location of	North West RBD	Implemented	Water companies;

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
pollutants; Nitrate; Priority Substances and Specific Pollutants (Metals)	development to protect groundwater			Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Environment Agency Notice powers (WRA S86 and S161, Groundwater Regulations) -Make use of site specific notices to remove pollution risk to groundwater	North West RBD	Implemented	Environment Agency
Microbiology; Nutrients; Organic pollutants; Sediments (as a direct pollutant); Priority Hazardous Substances, Priority Substances and Specific Pollutants	Encourage best practice management of nutrients, soil and water through advice funded under the Rural Development Programme for England (RDPE)	North West RBD	Implemented	North West Regional Development Agency
Nutrients; Sediments (as a direct pollutant); Organic pollutants	Encourage spatial analysis of agri-census data at local and regional level to inform North West rural impacts study and use it to target action with partners like National Farmers' Union, Natural England, Lake District National Park Authority, Rivers Trusts, Land managers and owners.	North West RBD	2010	Rivers Trusts; Natural England; Lake District National Park; National Farmers' Union; Land managers and owners; Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Enforcement of Groundwater Regulations to control agri-chemicals	North West RBD	Implemented	Environment Agency
Nitrate	Enforcement of Sludge Regulations	North West RBD	Implemented	Land managers and

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
				owners; Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Environmental Permitting – disposal of sheep dip and pesticides	North West RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Environmental Permitting – effluent discharges to ground	North West RBD	Implemented	Environment Agency
Nutrients	Establish and enforce Nitrate Vulnerable Zones in catchments at a high risk from nitrate pollution, requiring farmers to follow a programme of measures to reduce nitrate entering the water from farmland. (see map D6 in annex D)	North West RBD	Implemented	Defra; Welsh Assembly Government; Environment Agency
Sediments (as a direct pollutant); Microbiology; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Nutrients	Establish and maintain a nationally funded advice-led partnership under the England Catchment Sensitive Farming (CSF) Delivery Initiative Programme to reduce diffuse water pollution from agriculture in at risk catchments.	Bassenthwaite Lake; Kent/Leven Catchment	2010	Environment Agency; Natural England
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	EU review of approvals for Plant Protection Products	North West RBD	Implemented	EU

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Sediments (as a direct pollutant); Salinity; Organic pollutants; Temperature; Nutrients; Microbiology	Extend Water company's Sustainable Catchment Management Plans (SCAMP) to other Water company land assets where it may benefit the water quality. This work is done through Water Company Asset Management plans.	North West RBD	2010	Water companies
Direct biological pressures; Physical modification; Sediments (as a direct pollutant)	Extending our delivery of elements of the Habitat Action Plan for rivers and streams from the Cumbria Biodiversity Action Plan and aiming to reduce inputs of agricultural run-off and eroded sediments and to arrest the rate of run-off water, we are currently buffer-stripping 1630m of Brethrdale and Birk Beck and 3000m of Eskew Beck and Docker Force becks.	LUNE	Implemented	The Lune Rivers Trust
Abstraction	Extension of abstraction control to include previously exempt uses (abstractions by Ports and Harbour authorities from tidal waters under certain conditions likely to remain exempt)	North West RBD	2012	Environment Agency
Nitrate	Follow advice on controlling nitrate releases to land and water	North West RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Follow Pesticides Statutory Code of Practice - advice for operators	North West RBD	Implemented	Land managers and owners
Hazardous substances	Follow Sheep Dip Statutory Code of	North West RBD	Implemented	Land managers and

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Practice - comply with published advice for operators			owners
Nitrate	Follow The Code of Good Agricultural Practice - comply with published advice for operators on nitrate control	North West RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Follow The Code of Good Agricultural Practice - comply with published advice for operators on control of agri-chemicals	North West RBD	Implemented	Land managers and owners
Priority Hazardous Substances, Priority Substances and Specific Pollutants	General guidance to improve Pesticide use through the Voluntary Initiative	North West RBD	Implemented	Voluntary Initiative Partnership
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Groundwater protection advice to Chemicals Regulation Directorate (formerly the Pesticides Safety Directorate) approvals process	North West RBD	Implemented	Central Government; Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Groundwater protection advice to Veterinary Medicines Directorate products approvals process	North West RBD	Implemented	Central Government
Nitrate	Implement DCLG Planning Policy Guidance Statement 23 (PPS23) on controlling pollution of groundwater that	North West RBD	Implemented	Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	may arise from development of land			
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Implement Groundwater Protection: Policy & Practice - External education on groundwater pollution prevention	North West RBD	Implemented	Land managers and owners; Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Implement pesticides statutory Code of Practice. Comply with published advice for operators on control of plant protection products	North West RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants (Metals)	Local agricultural partnerships e.g. Linking Environment and Farming (LEAF), NGOs such as Rivers Trusts, Landcare, Farming & Wildlife Advisory Group advice on use of agri-chemicals and nitrate control	North West RBD	Implemented	Land managers and owners
Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Microbiology	Maintain the Higher Level Stewardship Scheme offering farmers an incentive to achieve environmental benefits over and above those required under the Entry Level Stewardship Scheme (ELS). Higher Level Stewardship (HLS) is targeted by Natural England to maximise environmental and other public benefits in targeted areas within the RBD	North West RBD	Implemented	Natural England; Defra
Hazardous substances and non-hazardous pollutants; Nitrate;	NetRegs (Environmental Guidance to Business) - External education on GW pollution legislation	North West RBD	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Priority Substances and Specific Pollutants (Metals)				
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	New EC Sustainable Use of Pesticides Directive to control use of Plant Protection Products	North West RBD	2012	Central Government
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Permitting – disposal of sheep dip and pesticides	North West RBD	Implemented	Environment Agency
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Proactive targeted farmer education on control of agri-chemicals and nitrate	North West RBD	Implemented	Environment Agency
Nutrients; Sediments (as a direct pollutant); Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants; Microbiology	Progress delivery of Cross-compliance inspection and enforcement	North West RBD	2010	Defra; Environment Agency; Rural Payments Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic	Progress the Entry Level Stewardship Scheme offering farmers an incentive to achieve environmental benefits on agricultural land. Entry Level	North West RBD	Implemented	Defra; Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
pollutants; Nutrients; Microbiology; Sediments (as a direct pollutant)	Stewardship is open to all those farming in England and aims to reward good land management and address some of the environmental issues affecting the wider countryside including diffuse pollution, soil erosion and the conservation of farmland birds			
Physical modification; Direct biological pressures	Project between Duddon River Association and National Trust to replant banks of upper Duddon and its tributaries with trees to address lack of nutrient input and provide shading.	River Duddon	Implemented	Duddon Rivers Association
Abstraction and other artificial flow pressures	Promote and support Water Efficiency campaigns, internally and externally, like the National Farmers' Union "Water Matters" campaign.	North West RBD	Implemented	National Farmers' Union
Abstraction and other artificial flow pressures; Direct biological pressures; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants; Salinity; Nutrients; Microbiology; Acidification	Promote best practice initiatives and effective implementation of codes of good agricultural practice (like covering Slurry stores, bankside fencing etc) by targeting farming sector based on location, soil type, geology etc.	North West RBD	Implemented	Environment Agency
Abstraction and other artificial flow pressures	Promote small-scale storage reservoirs, where they can be justified in the context of the twin track approach of resource	Douglas Catchment	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	development and demand management.			
Abstraction and other artificial flow pressures	Promote the efficient and responsible use of water through a targeted water efficiency campaign	LUNE; RIBBLE; WYRE; Derwent (NW) Catchment; Douglas Catchment; Kent/Leven Catchment; South West Lakes Catchment	2010	Environment Agency
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants (Metals)	Provide development planning standing advice	North West RBD	Implemented	Environment Agency
Direct biological pressures; Microbiology; Nutrients; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Salinity; Acidification; Abstraction and other artificial flow pressures; Organic pollutants	Provide landscape advice and responses to proposals for works across Cumbria and involving volunteers for workparties on land management tasks.	Derwent (NW) Catchment; Kent/Leven Catchment; South West Lakes Catchment	2010	Friends of the Lake District
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Provide targeted best practice advice to farmers on pesticide use and spray calibration.	WYRE	Implemented	Environment Agency; Natural England
Isoproturon	Recently introduced UK-wide restrictions will see decreasing trend in emissions and probable compliance by 2015 with no further action	North West RBD	Implemented	Chemicals Regulation Directorate

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants (Metals)	Re-engineer existing discharges to avoid direct discharges of pollutants to groundwater	North West RBD	Implemented	Water companies; Environment Agency
Abstraction and other artificial flow pressures	Registration for previously exempt activity: abstraction of water within water meadow systems.	North West RBD	2012	Environment Agency
Nitrate	Registrations (in conjunction with Standard Rules) - Implement new regulatory approach (via Environmental Permitting Regulations) arising from implementation of new Groundwater Directive (2006/116/EC)	North West RBD	2012	Environment Agency
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants; Nitrate	Registrations (in conjunction with Standard Rules) - Implement new regulatory approach (via Environmental Permitting Regulations) arising from implementation of new Groundwater Directive (2006/116/EC)	North West RBD	2012	Environment Agency, householders, land managers and owners; industry leads;
Physical modification; Direct biological pressures	Restoration of about 168 ha of agricultural land, at Hesketh Out Marsh West, on the southern side of the Ribble estuary back to original salt marsh.	RIBBLE	Implemented	Royal Society for Protection of Birds
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Support to Chemicals Regulation Directorate (formerly the Pesticides Safety Directorate) research into amenity use of pesticides	North West RBD	Implemented	Central Government

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Cypermethrin	UK-wide suspension (temporary) on use as sheep dip	North West RBD	Implemented	Veterinary Medicines Directorate
Nitrate	Use of statutory notice powers (WRA S86 and S161, Groundwater Regulations, Silage Slurry and Agricultural Fuel Oils Regulations)	North West RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Voluntary Initiative Educational and advice programme to reduce agricultural chemical use	North West RBD	Implemented	Land managers and owners
Investigations				
Chlorophyll a	Further monitoring to confirm risk of failure of WFD Article 7	River Ribble	2010	Environment Agency; Water companies
Phosphate	Further monitoring to confirm risk of failure of WFD Article 7	River Ribble	2010	Environment Agency; Water companies
Colour	Further monitoring to confirm risk of failure of WFD Article 7	Arnfield Reservoir; Wayoh Reservoir; Delph Reservoir; Kinder Reservoir; Springs Reservoir; Turton and Entwistle Reservoir; Rivington Reservoirs; High Bullough Reservoir; Anglezarke Reservoir; Ogden Reservoir; Piethorne Reservoir; Rooden Reservoir; Readycon Dean Reservoir; Clowbridge Reservoir; Thirlmere; Ashworth Moor Reservoir; Torside Reservoir; Rhodeswood	2010	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
		Reservoir; Lamaload Reservoir; Calf Hey Reservoir; Dowry Reservoir; Blackstone Edge Reservoir; Mitchells House Reservoirs; Upper Naden Reservoir; Greenbooth Reservoir; Lower Naden Reservoir; Yeoman Hey Reservoir; Brushes Reservoir; Walkerwood Reservoir; Greenfield Reservoir; New Years Bridge Reservoir; Cowpe Reservoir; Dovestone Reservoir; Middle Naden Reservoir; Clough Bottom Reservoir		
Turbidity	Further monitoring to confirm risk of failure of WFD Article 7	Middle Naden Reservoir; Lower Naden Reservoir; Upper Naden Reservoir	2010	Environment Agency; Water companies
2,4-D	Further monitoring to confirm risk of failure of WFD Article 7	Clough Bottom Reservoir	2010	Environment Agency; Water companies
Geosmin	Further monitoring to confirm risk of failure of WFD Article 7	Watergrove Reservoir; Poaka Beck Reservoir; Pennington Reservoir; River Ribble; Langthwaite Reservoir; Alston Reservoirs; Duddel Brook	2010	Environment Agency; Water companies
2-methyl iso borneol	Further monitoring to confirm risk of failure of WFD Article 7	Watergrove Reservoir; Poaka Beck Reservoir; Pennington Reservoir; River Ribble; Duddel Brook; Alston Reservoirs; Langthwaite Reservoir	2010	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
MCPA	Further monitoring to confirm risk of failure of WFD Article 7	Wayoh Reservoir	2010	Environment Agency; Water companies
Colour	Further monitoring/investigation to confirm reasons for failure of WFD Article 7. Water industry scheme to address diffuse pollution in the catchment	River Etherow; River Sett	2010	Environment Agency; Water companies
Ammonia	Further investigation - Undertake a site visit and audit to determine source of pollution; liaise with site owners and Environment Officer.	Lune and Wyre Carboniferous Aquifers; Ribble Carboniferous Aquifers	2012	Environment Agency
Nitrate; Hazardous substances and non-hazardous pollutants; Phosphate; Priority Substances and Specific Pollutants (Metals)	Investigation of Groundwater Dependent Terrestrial Ecosystems (GWDTEs) to assess if they have been significantly damaged as a result of groundwater pollution	North West RBD	Implemented	Environment Agency
Abstraction	Investigation to improve confidence in Groundwater (GW) quantitative status result	Rufford Permo-Triassic Sandstone Aquifers	2012	Environment Agency
Phosphate	Research, monitoring and investigation to find out if and how phosphate from land management finds its way into aquifers.	Fylde Permo-Triassic Sandstone Aquifers; Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers; Weaver and Dane Quaternary Sand and Gravel Aquifers; West Cumbria Permo-Triassic sandstone aquifers; Wirral and West Cheshire Permo-Triassic Sandstone Aquifers	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Nutrients; Organic pollutants; Sediments (as a direct pollutant)	To encourage a better understanding of Agrichemical inputs into catchments; Moss sampling was done in previous years to get a greater understanding of sheep dip input. A follow up project will be taken to further investigate and clean up problems where found	LUNE; RIBBLE	Implemented	Environment Agency
Natura 2000 protected areas and SSSIs				
Nutrients; Physical modification; Sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by developing a pollution action plan for protected areas (See Annex D)	North West RBD	2012	Natural England; Environment Agency
Sediments (as a direct pollutant); Abstraction and other artificial flow pressures; Direct biological pressures; Nutrients; Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by implementing agri-environment scheme (See Annex D)	North West RBD	2012	Natural England
Nutrients; Abstraction and other artificial flow pressures	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by revoking or amending abstraction licences (See Annex D)	North West RBD	2012	Environment Agency
Physical modification; Nutrients; Sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by revoking or amending Discharge/PPC	North West RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	Consents (See Annex D)			
Nutrients; Sediments (as a direct pollutant); Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Catchment Sensitive Farming Delivery Initiative (See Annex D)	North West RBD	2012	Natural England
Sediments (as a direct pollutant); Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Compulsory Management Scheme to address hydrology pressures (See Annex D)	North West RBD	2010	Natural England
Physical modification; Abstraction and other artificial flow pressures; Nutrients	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Specific Management Works to address hydrology, morphology and invasive species pressures (See Annex D)	North West RBD	2012	Land managers and owners; Environmental NGOs; Natural England; Water companies
Physical modification; Nutrients; Direct biological pressures; Abstraction and other artificial flow pressures	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through SSSI Management Agreement (See Annex D)	North West RBD	2012	Environmental NGOs; Natural England
Physical modification; Nutrients; Abstraction and other artificial flow pressures	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Water Level Management Plans (See Annex D)	North West RBD	2012	Environment Agency; Agriculture and rural land management (under query)

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Investigation - Natura 2000 protected areas and SSSIs				
Nutrients; Physical modification; Sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Regulatory Investigation into diffuse pollution (See Annex D)	North West RBD	2012	Natural England; Environment Agency

C.5 Angling and conservation

Fish are one of the best indicators of the state of the water environment. The Mersey Estuary, once a prolific fishery, became known as “the dead river” and one of the most polluted rivers in Europe. Recent years have seen the return of salmon, a clear indicator of the improvements that have been made. However, physical modification of the watercourses remains a barrier to establishing populations of migratory fish. The waters of the Lake District National Park support salmon, arctic char, sea trout, brown trout and coarse fisheries. Many canals and rivers support coarse fisheries like barbel, chub, roach, perch, carp, pike, tench, bream, rudd, etc. Although it has declined, commercial fishing remains an important sector in the region. Fleetwood, Whitehaven and Maryport are the main bases for the marine fishery fleet in the region. Finfish caught in the area include flatfish, bass, cod and whitebait. Shellfish include mussels, shrimps and scallops caught for local consumption and for export to Europe.

As well as being indicators of environmental quality, fisheries play a significant role in the social and economic well being of the region. Fisheries and angling contribute around £141 million to the North West economy of which £79 million stays in the region. In excess of 3,000 jobs are supported by angling. Social schemes based in the region have shown great success in helping vulnerable young people avoid drugs, anti-social behaviour and crime. It is crucial that we conserve the stocks on which angling depends. We do this by preventing illegal exploitation, controlling disease and preventing the introduction of non-native species.

The North West River Basin District contains a rich and diverse range of habitats, both upland and lowland, urban and rural, from sand dunes to limestone pavement, urban green space to wide expanses of mudflats, which in turn support a wealth of wildlife species. The region supports a significant proportion of the UK’s overall resource of important wildlife sites, habitats and species, with many sites being designated as nationally and internationally important. At a more local level, areas of wildlife value are designated as local nature reserves, county wildlife sites (second tier sites) or non-statutory nature reserves. However, there has been a significant decline in certain habitats and species in past years and much of our wildlife is still under threat. Biodiversity in the North West River Basin District is particularly threatened by land use changes (development, agriculture and water management), climate change (coastal squeeze and rising temperatures), environmental pollution and invasive non-native species.

Please note that measures relating to commercial fisheries can be found within the Industry, manufacturing, and other business sector.

Table C5: Actions for the angling and conservation sector

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Alien species	Assess our obligations under the Alien Species Regulation, with respect to control of alien fish species in the wild and implement new initiatives in line with national policy and local requirements.	North West RBD	2011	Natural England; Environment Agency; CEFAS
Direct biological pressures	Audit high risk fish movements to and from the wild and to enforce against illegal activity in priority sites and catchments.	North West RBD	2010	CEFAS; Environment Agency; Defra
Habitat Manipulation (restoration/improvement)	Bankside and in-river works to create & enhance habitats for brown trout in the River Lune.	LUNE	2010	Fisheries and Angling Interests; Environment Agency
Realignment, reprofiling and regrading (e.g. for canals)	Block a major grip affecting Camm Beck on Catshaw fell on the upper Wyre. This will reduce erosion and wash out in Camm Beck, whilst restoring flow to a another beck, previously used by spawning salmonids.	WYRE	2010	Fisheries and Angling Interests; Environment Agency
Culverts, barrages, weirs and sluices	Carry out improvement works on South Cumbria Eel Passage.	South West Lakes Catchment	2010	Fisheries and Angling Interests; Environment Agency
Direct biological pressures	Contribute to favourable condition on Estwaite Water Site of Special Scientific Interest (SSSI) and Oss Mere SSSI by securing management	Kent/Leven Catchment; Weaver/Gowy Catchment	2010	Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	agreement			
Sediments (as a direct pollutant); Nutrients; Abstraction and other artificial flow pressures; Direct biological pressures; Physical modification	Contribute favourable condition on Over Water SSSI, Siddick Pond SSSI, Blelham Tarn & Bog SSSI, Esthwaite Water SSSI, Little Langdale Tarn SSSI, Brantrake Moss & Devoke Water SSSI, Tatton Meres SSSI, Rostherne Mere SSSI, The Mere, Mere SSSI, Bar Mere SSSI, Chapel Mere SSSI, Comber Mere SSSI, Hatch Mere SSSI, Norbury Meres SSSI, Oss Mere SSSI, Pettypool Brook Valley SSSI, Quoisley Meres SSSI, Tabley Mere SSSI, Siddick Pond SSSI, Claife Tarns and Mires SSSI, Elterwater SSSI, Black Firs & Cranberry Bog SSSI, Betley Mere SSSI and Hollinwood Branch Canal SSSI by developing pollution action plan	Derwent (NW) Catchment; Irwell Catchment; Kent/Leven Catchment; South West Lakes Catchment; Upper Mersey Catchment; Weaver/Gowy Catchment	2012	Cheshire Wildlife Trust; Cheshire County Council; Allerdale District Council; Tameside Metropolitan Borough Council; United Utilities; Natural England; Environment Agency
Culverts, barrages, weirs and sluices	Contribute to the Elver and Eel Pass Improvements in Lower Mersey tributaries.	Mersey Estuary Catchment	2010	Fisheries and Angling Interests; Environment Agency
Direct biological pressures	Core fisheries monitoring programme to be complemented by data provided through the Rivers Trusts volunteers - trained and accredited by the Environment Agency	Kent/Leven Catchment; South West Lakes Catchment	2012	Fisheries and Angling Interests; Environment Agency
Habitat Manipulation (restoration/improvement)	Creation of online spawning channels on Boyces, Sabden, Stock, Skirden, Boyces and lngs becks - tributaries of	RIBBLE	2010	Environment Agency; Fisheries and Angling Interests

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	Ribble			
Alien species	Cumbria wide Non-Native Invasive Species (NNIS) coordinator to establish action to address Nautra 2000 sites failing to meet favourable condition due to NNIS	Derwent (NW) Catchment; Kent/Leven Catchment; South West Lakes Catchment	2012	Defra; South Cumbria Rivers Trust; Eden Rivers Trust; Environment Agency; Natural England
Culverts, barrages, weirs and sluices	Deliver a fish passage project at Ainsworth's Dam on the Leven	Kent/Leven Catchment	2010	Defra; Environment Agency
Culverts, barrages, weirs and sluices	Deliver a fish passage project at Heron Corn Mill on the Bela	Kent/Leven Catchment	2010	Defra; Environment Agency
Culverts, barrages, weirs and sluices	Deliver a fish passage project at Padiham Weir on the Calder	RIBBLE	2010	Defra; Fisheries and Angling Interests; Environment Agency
Culverts, barrages, weirs and sluices	Deliver a fish passage project at Yearl Weir on the River Derwent	Derwent (NW) Catchment	2010	Environment Agency; Defra
Direct biological pressures	Deliver component actions of North West Eel management plan and implement the requirements of the proposed national eel byelaws as they apply to the NW basin.	North West RBD	2012	Environment Agency; Fisheries and Angling Interests
Physical modification; Direct biological pressures	Design and construction of Fish Pass on river Goyt and river Bollin.	Upper Mersey Catchment	2012	Environment Agency
Direct biological pressures	Develop an inventory of intakes and outlets on rivers and other waterbodies across the river basin. Develop an annual and ongoing programme of screening based on priority and risk to the watercourse.	North West RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Direct biological pressures	Develop and deliver a programme of improvements for the most significant physical barriers to fish migration and movement through the design and installation of fish passes.	North West RBD	2012	Environment Agency; Fisheries and Angling Interests; Defra
Physical modification	Dutton Park Farm Regeneration. Create otter habitat management improving the chances of Otters being able to hunt and breed. Provide a better habitat for wading birds such as waterfowl.	River Weaver (Dane to Frodsham)	2012	Woodland Trust
Abstraction	Extension of abstraction control to include previously exempt uses (abstractions by Ports and Harbour authorities from tidal waters under certain conditions likely to remain exempt)	North West RBD	2012	Environment Agency
Direct biological pressures	Following consultation in 2009 on proposed byelaws on: Removal of Fish by Rod and Line, Closed season for Brown Trout and Salmon and Improved management of Eel Stocks, implement these and assist in improved management of Fisheries in the Region.	North West RBD	2012	Environment Agency
Direct biological pressures	For the management of the Ennerdale Arctic Charr we will work with Durham University towards improving habitat, carrying out hydro-acoustic surveys to assess the population and trapping broodstock for rearing and restocking	South West Lakes Catchment	2010	Environment Agency; Fisheries and Angling Interests

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	of young fish.			
Direct biological pressures	Fresh Water Pearl Mussels project aims to implement water quality (sediment and phosphate) improvements along with habitat improvement to enable re-introduction of captive bred populations and favourable site condition (for protected sites) with a view to creating viable, sustainable communities over next 10 years.	LUNE; RIBBLE; WYRE; South West Lakes Catchment	2012	Environment Agency
Habitat Manipulation (restoration/improvement); Direct biological pressures	Fund and support Cheshire Wildlife Trust's Gowy & Mersey Washlands project. The project aims to restore, recreate & re-connect coastal & floodplain grazing marsh along the River Gowy and River Mersey. Some parts of the project are currently underway and others are awaiting funding.	Weaver/Gowy Catchment	2010	Cheshire Wildlife Trust; Farming and Wildlife Advisory Group; Environment Agency
Habitat Manipulation (restoration/improvement)	Habitat improvement works on the River Derwent	Derwent (NW) Catchment	2010	Environment Agency; Fisheries and Angling Interests
Direct biological pressures	Implement the new byelaws introduced in 2009 banning the sale of rod caught salmon and sea trout and introducing the mandatory tagging of net caught fish. Develop local initiatives in support of these measures including education campaigns and targeted	LUNE; RIBBLE; Derwent (NW) Catchment; Kent/Leven Catchment; South West Lakes Catchment	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	enforcement.			
Direct biological pressures	Implement the requirements of the Trout and Grayling Strategy as regards stocking of triploid brown trout. Develop an annual programme to deliver increased triploid stocking. By 2015 all brown trout stockings are to be triploid (except for specific exemptions as outlined in the strategy)	North West RBD	2012	Environment Agency
Direct biological pressures	Implementation of Net Limitation Orders (NLO) in Cumbria and Lancashire as a means of controlling the legal exploitation of salmon and sea trout, by restricting the number of licences, type of equipment and locations that are available for netsmen operating in a given net fishery. As well as restricting the number of licences that are available, these orders also provide for the selection of applicants for licences in situations where the number of applicants exceeds the number of licences available.	LUNE; RIBBLE; Derwent (NW) Catchment; Kent/Leven Catchment; South West Lakes Catchment	2010	Environment Agency
Direct biological pressures	Improved regulation and management of waters holding non-native Importation of Live Fish Act, 1990 (ILFA) species (such as topmouth gudgeon) in partnership with owners and tenants in Cheshire, Mersey, Greater Manchester, Lancashire and	North West RBD	2012	Defra; Environment Agency; Natural England; CEFAS

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	Cumbria			
Direct biological pressures	Incorporate recovering salmon rivers in Lancashire (Calder), Merseyside and Greater Manchester, not currently formally covered by Salmon Action Plans (SAP), into the new North west Sea Trout and Salmon Management Plan.D6	Douglas Catchment; Irwell Catchment; Upper Mersey Catchment	2012	Environment Agency
Direct biological pressures	Introduction of Live Fish Movement Regulations. Work alongside all clubs to introduce long term permits controlling stocking of club waters. Assist clubs to identify where stocking will be required over the next 5 years. Enforce the new consignment note mechanism for fish movement consenting and employ targeted enforcement of known problem areas.	North West RBD	2010	CEFAS; Environment Agency; Natural England
Habitat Manipulation (restoration/improvement)	Introduction of woody debris on the River Dane	Weaver/Gowy Catchment	2010	Environment Agency; Fisheries and Angling Interests
Direct biological pressures	On an annual basis use project income generated by Coarse, Trout and Eel licences, to fund improvements to river and stillwater coarse fisheries.	North West RBD	2010	Environment Agency; Fisheries and Angling Interests
Culverts, barrages, weirs and sluices	On the Bela, Kent, Gilpin, Winster, Leighton Beck, Red Barn Dyke, Leven, Crake, Duddon and Gleaston Beck In particular identify the first barrier to	South West Lakes Catchment	2012	Environment Agency; Fisheries and Angling Interests

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	elver migration for each river and options for removal. Possible easements put in place on low head barriers.			
Direct biological pressures	Promotion of voluntary catch and release for recreational angling by ongoing public campaigns such as leaflets in any water bodies with salmon and sea trout populations especially those where evidence shows failure to comply with conservation targets. (Mersey Estuary)	LUNE; RIBBLE; WYRE; Derwent (NW) Catchment; Kent/Leven Catchment; South West Lakes Catchment	2012	Environment Agency
Abstraction and other artificial flow pressures	Registration for previously exempt activity: abstraction of water within water meadow systems.	North West RBD	2012	Environment Agency
Habitat Manipulation (restoration/improvement)	Reinstatement of pool/riffle system in the Bela and Stainton Beck together with stock fencing, the provision of tree cover and in river fish refuges and off river survival units, by joint work with South Cumbria Rivers Trust and Bela River Association.	Kent/Leven Catchment	2012	Environment Agency; Fisheries and Angling Interests
Direct biological pressures	Renewal for a period of another 10 years of the existing National Spring Salmon Byelaws that expire in December 08 and give protection to early run salmon, in all water bodies with salmon and sea trout populations.	LUNE; RIBBLE; WYRE; Derwent (NW) Catchment; Kent/Leven Catchment; South West Lakes Catchment	2010	Environment Agency
Direct biological pressures	Renewal, for a period of another 10	LUNE; RIBBLE;	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	years, of the existing National Spring Salmon Byelaws that expire in December 2008 and give protection to early run salmon, in all water bodies with salmon and sea trout populations.	WYRE; South West Lakes Catchment		
Habitat Manipulation (restoration/improvement)	Renovation of Heaton Canal Mersey reservoir to provide improved urban fishery and habitat improvements.	Upper Mersey Catchment	2012	Fisheries and Angling Interests; Environment Agency
Habitat Manipulation (restoration/improvement)	River Marron Erosion Control Project	Derwent (NW) Catchment	2010	Environment Agency; Fisheries and Angling Interests
Direct biological pressures	River Mersey Fry Refuge project for creating suitable juvenile habitat in downstream reaches of modified rivers.	Mersey Estuary Catchment	2012	Environment Agency
Direct biological pressures	Run a log book scheme to monitor catches and improve our information on Windermere alongside CEH for the management of the Arctic Charr.	KENT; LEVEN	2010	Environment Agency; Fisheries and Angling Interests; Centre for Ecology and Hydrology
Direct biological pressures; Habitat Manipulation (restoration/improvement)	Study has been commissioned into the current and future maintenance practices and other habitat management in the Lythe valley at River Gilpin. Following the recommendations from this study, implement actions that provide opportunity for habitat to flourish and possible floodplain reconnection, subject to the conditions of improved ecology and reduced flood risk.	River Gilpin	Implemented	Cumbria Business association; Environment Agency; National Farmers' Union; Natural England; Royal Society for Protection of Birds

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Direct biological pressures	Take an intelligence led approach to fisheries enforcement, reducing illegal fishing on coasts, rivers & still waters of Cheshire, Mersey, Greater Manchester, Lancashire and Cumbria. Improve working relationships with partner enforcement agencies e.g. IFCA, MMO, Police. Produce intelligence profiles for existing and new fisheries management legislation and where appropriate, take targeted enforcement action in identified areas including rod licence evasion, illegal fish movements and poaching.	North West RBD	2011	Environment Agency; Marine and Fisheries Agency
Habitat Manipulation (restoration/improvement)	Trout in the Town - Year 2 (2009/10). Educational and awareness raising programme that brings about Habitat and wider biodiversity improvements and access improvements.	RIBBLE	2010	Fisheries and Angling Interests; Environment Agency
Culverts, barrages, weirs and sluices	Update and modernise the floodgates on tidal flaps on the Gilpin, Winster, Gleaston Beck, Red Barn Dyke, Newlands, Colton and Leighton Beck to improve fish passage	South West Lakes Catchment	2012	Environment Agency; Fisheries and Angling Interests
Direct biological pressures	Use Salmon Action Plans (SAP) for Cumbria and Lancashire to set specific targets such as spawning fish numbers, reducing exploitation, improving habitat and water quality and minimising obstructions to migration, for individual rivers. Update	LUNE; RIBBLE; WYRE; Derwent (NW) Catchment; Kent/Leven Catchment; South West Lakes Catchment	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	existing plans to include measures aimed at improving sea trout stocks.			
Direct biological pressures	Work alongside local Rivers Trusts to identify and develop fisheries enhancement projects within local catchments. Develop a timetable for delivery of projects in line with WFD priorities and identified funding opportunities.	North West RBD	2010	Environment Agency; Fisheries and Angling Interests
Investigations				
Direct biological pressures	Investigate lowland river connectivity to the Mersey Estuary. Identify first barrier to elver migration for Mersey, Wirral, Gowy, Weaver, Ditton and options for removal. Put in place easements on low head barriers where possible.	Weaver/Gowy Catchment	2012	Environment Agency
Direct biological pressures	Research into effective methods to control populations of signal crayfish in Ribble, Kent Leven and Derwent.	RIBBLE; Derwent (NW) Catchment; Kent/Leven Catchment	2012	Environment Agency
Direct biological pressures; Habitat Manipulation (restoration/improvement)	Study has been commissioned into the current and future maintenance practices and other habitat management in the floodplains of River Irwell, River Croal and River Roch. Following the recommendations from this study, implement actions that provide opportunity for habitat to flourish and possible floodplain reconnection, subject to the conditions	Irwell Catchment	Implemented	Environment Agency; Land managers and owners; Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	of improved ecology and reduced flood risk.			
Direct biological pressures	Under take a programme of targeted monitoring to understand the reasons for the fish classification failing to meet good status	North West RBD	2010	Environment Agency

C.6 Central government

Defra (Department for Environment, Food and Rural Affairs) is a UK Government Department and is responsible for the Water Framework Directive in England. Defra champions sustainable development, and helps Government as a whole to deliver economic, social and environmental sustainability. Defra is also the focal point for our rural policy.

Defra has several delivery partners that have important actions in our river basin management plan, including the following:

- Marine and Fisheries Agency
- Rural Payments Agency
- Environment Agency (see separate section)
- Forestry Commission
- National Park Authorities
- British Waterways

Other Government Departments are included under the sector heading of Central Government, examples of these are:

- Department of Communities and Local Government (CLG)
- Office of Government Commerce (OGC) - an independent office of HM Treasury
- Health and Safety Executive (part of the Department of Work and Pensions), which includes the Pesticides Safety Directorate
- Highways Agency (part of Ministry for Transport)
- Defence Estates (part of Ministry of Defence)

Table C6: **Actions for central government**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
MCPA	Address issue as priority action within this England Catchment Sensitive Farming Delivery Initiative (CSF) catchment	River Wyre DS Grizedale Brook confl	2010	Natural England
Direct biological pressures	Contribute to favourable condition on Esthwaite Water SSSI and Oss Mere SSSI by securing management agreement	Kent/Leven Catchment; Weaver/Goway Catchment	2010	Natural England
Direct biological pressures; Nutrients	Contribute to favourable condition on Esthwaite Water SSSI and Sound Heath SSSI by compulsory management scheme/notice	Kent/Leven Catchment; Weaver/Goway Catchment	2010	Natural England
Physical modification; Nutrients; Direct biological pressures; Abstraction and other artificial flow pressures; Sediments (as a direct pollutant)	Contribute to favourable condition on Over Water SSSI, Siddick Pond SSSI, Blelham Tarn & Bog SSSI, Esthwaite Water SSSI, Little Langdale Tarn SSSI, Brantrake Moss & Devoke Water SSSI, Tatton Meres SSSI, Rostherne Mere SSSI, The Mere, Mere SSSI, Bar Mere SSSI, Chapel Mere SSSI, Comber Mere SSSI, Hatch Mere SSSI, Norbury Meres SSSI, Oss Mere SSSI, Pettypool Brook Valley SSSI, Quoisley Meres SSSI, Tabley Mere SSSI, Siddick Pond SSSI, Claife Tarns and Mires SSSI, Elterwater SSSI, Bar Mere SSSI, Black Firs & Cranberry Bog SSSI, Betley Mere SSSI and Hollinwood Branch Canal SSSI by developing pollution action plan	Derwent (NW) Catchment; Irwell Catchment; Kent/Leven Catchment; South West Lakes Catchment; Upper Mersey Catchment; Weaver/Goway Catchment	2012	Water companies; Allerdale District Council; Cheshire County Council; Cheshire Wildlife Trust; Environment Agency; Natural England; Tameside Metropolitan Borough Council

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	Contribute to favourable condition on River Ribble (Long Preston Deeps) by implementing river restoration project	RIBBLE	2012	Environment Agency; Natural England
Direct biological pressures	Contribute to favourable condition on River Ribble (Long Preston Deeps) SSSI by implementing invasive species control programme	RIBBLE	Implemented	Natural England
Direct biological pressures; Nutrients; Sediments (as a direct pollutant)	Contribute to favourable condition on Siddick Pond SSSI, Elterwater SSSI, Tatton Meres SSSI, Betley Mere SSSI, Black Firs & Cranberry Bog SSSI and Oss Mere SSSI by implementing lake restoration project	Derwent (NW) Catchment; Kent/Leven Catchment; Upper Mersey Catchment; Weaver/Gowy Catchment	2012	Natural England
Alien species	Contribute to the development of any EU level initiatives to improve legislation and controls relating to invasive non-native species.	North West RBD	2012	Central Government
Alien species	Develop a national early warning system with contingencies for rapid response control measures to eradicate new invasions	North West RBD	2012	Central Government
Alien species	Develop and implement codes of practice to reduce the spread of invasive non-native species	North West RBD	2012	Environment Agency; Central Government
Alien species	Draw together a database of projects to facilitate better information sharing and increase opportunities for partnership working	North West RBD	2012	Central Government
Alien species	Draw up Individual Species Action Plans	North West RBD	2012	Central Government;

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	for species identified as presenting particular risk levels, to minimise the risks associated with them			Environment Agency
Alien species	Establish a central repository for holding data on invasive non-native species distribution.	North West RBD	2012	Central Government
Alien species	Establish National Invasive Non-Native Species Forums to plan, prioritise and coordinate action	North West RBD	Implemented	Central Government
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Implement DCLG Planning Policy Guidance Statement 23 (PPS23) on controlling pollution of groundwater	North West RBD	Implemented	Local Authorities
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Implement DCLG Planning Policy Guidance Statement 23 (PPS23) on controlling pollution of groundwater that may arise from development of land	North West RBD	Implemented	Local Authorities
Nitrate	Implement DCLG Planning Policy Guidance Statement 23 (PPS23) on controlling pollution of groundwater that may arise from development of land	North West RBD	Implemented	Local Authorities
Alien species	Increase awareness of the importance of the 'preventative approach' in addressing the threats posed by invasive non-native species. This would include 'horizon scanning' for new potentially invasive	North West RBD	2010	Central Government

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	species.			
Alien species	Integrate invasive non-native species control measures across all policy areas	North West RBD	2012	Environment Agency; Central Government
Alien species	Make appropriate use of existing legislative powers eg prohibit the sale of high-risk species; Salmon and freshwater fish act (S30); Import of live fish act; Wildlife & Countryside Act 1981; Environment Agency Fisheries byelaws; Convention on biological diversity; NERC Act; Habitats Directive; International Maritime Organisation (IMO) convention on ballast water)	North West RBD	2012	Environment Agency; Central Government
Alien species	Provide advice and training on identification, control and disposal of invasive non-native species to all relevant groups and encourage monitoring schemes.	North West RBD	2012	Central Government; Environment Agency
Alien species	Set up and maintain a website that acts as a "one stop shop" for information and advice on invasive non-native species.	North West RBD	Implemented	Central Government
Alien species	Support established local fora by providing advice and guidance and support control actions by selected local fora	North West RBD	2012	Central Government; Environment Agency
Alien species	Work to raise awareness of the of the risks transferring non-native species to the wild amongst the public and target groups	North West RBD	2010	Central Government

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Investigations				
Abstraction and other artificial flow pressures; Physical modification	Contribute to the achievement of Favourable Conservation Status on Over Water Site of Special Scientific Interest (SSSI), Black Firs & Cranberry Bog SSSI and Quoisley Meres SSSI by investigating hydrology	Derwent (NW) Catchment; Weaver/Gowy Catchment	2010	Environment Agency; Natural England
Direct biological pressures	Contribute to the achievement of Favourable Conservation Status on Quoisley Meres SSSI by implementing invasive species control programme	Weaver/Gowy Catchment	Implemented	Natural England
Alien species	Seek sustainable and cost-effective methods for managing established invasions, such as biological control	North West RBD	2012	Central Government; Environment Agency
Alien species	Undertake risk assessments to identify priority invasive species for mitigation and control action at GB and national levels	North West RBD	2012	Central Government
Natura 2000 protected areas and SSSIs				
Direct biological pressures	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by developing an Invasive species control programme for protected areas (See Annex D)	North West RBD	2012	Environment Agency; Natural England
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas	North West RBD	2012	Environment Agency; Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	through River Restoration Programme for Protected Areas (See Annex D)			
Alien species	Eradication and control at selected SSSIs and Natura 2000 sites	North West RBD	2012	Countryside council of Wales; Natural England
Investigation - Natura 2000 protected areas and SSSIs				
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Investigation into water quality, morphology and invasive species pressures (See Annex D)	North West RBD	2012	Environment Agency; Natural England

C.7 Environment Agency

The Environment Agency was established by the 1995 Environment Act and became fully operational on 1st April 1996. The Environment Agency is a Non-Departmental Public Body of the Department for Environment, Food and Rural Affairs. The Secretary of State for Environment, Food and Rural Affairs has the lead sponsorship responsibility for the Environment Agency as a whole and the Environment Agency is accountable to the Secretary of State for its day to day operations in England.

The Environment Agency's principal aim is to protect and enhance the environment and in doing so to contribute towards achieving sustainable development. In support of this aim, the Environment Agency was identified as the "competent authority" for the implementation of the Water Framework Directive, a role which complements its broad range of functions which include Integrated Pollution Prevention and Control, Integrated Pollution Control, Waste Management, Water Quality, Land Quality, Water Resources, Conservation, Recreation, Fisheries, Flood Risk Management, Navigation and Radioactive Substances Regulation.

Regions and Areas ensure national priorities are delivered at a local level while taking account of the needs of local communities and stakeholders. Head Office is responsible for corporate management of the Environment Agency, including policy development, strategic and operational objective setting and performance management

Table C7: **Actions for the Environment Agency**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
TOC	Develop detailed 5-year Catchment Action Plan for Safeguard Zone	River Ribble	2010	Environment Agency
Nutrients; Direct biological pressures; Acidification; Salinity; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants; Abstraction and other	Building a robust Data and Information Resource to underpin the WFD information. This will provide evidence for targeted interventions, and provide the basis upon which interventions can be baselined, monitored and evaluated.	North West RBD	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
artificial flow pressures; Microbiology				
Abstraction and other artificial flow pressures; Physical modification	Contribute to favourable condition on Bar Mere SSSI and Betley Mere SSSI by implementing water level management plans	Weaver/Gowy Catchment	2010	Environment Agency
Nutrients	Contribute to favourable condition on Esthwaite Water SSSI, Tatton Meres SSSI and Black Firs & Cranberry Bog SSSI by revoking or amending discharge consents	Kent/Leven Catchment; Upper Mersey Catchment; Weaver/Gowy Catchment	2012	Environment Agency
Physical modification; Nutrients; Direct biological pressures; Abstraction and other artificial flow pressures; Sediments (as a direct pollutant)	Contribute to favourable condition on Over Water SSSI, Siddick Pond SSSI, Blelham Tarn & Bog SSSI, Esthwaite Water SSSI, Little Langdale Tarn SSSI, Brantrake Moss & Devoke Water SSSI, Tatton Meres SSSI, Rostherne Mere SSSI, The Mere, Mere SSSI, Bar Mere SSSI, Chapel Mere SSSI, Comber Mere SSSI, Hatch Mere SSSI, Norbury Meres SSSI, Oss Mere SSSI, Pettypool Brook Valley SSSI, Quoisley Meres SSSI, Tabley Mere SSSI, Siddick Pond SSSI, Claife Tarns and Mires SSSI, Elterwater SSSI, Bar Mere SSSI, Black Firs & Cranberry Bog SSSI, Betley Mere SSSI and Hollinwood Branch Canal SSSI by developing pollution action plan	Derwent (NW) Catchment; Irwell Catchment; Kent/Leven Catchment; South West Lakes Catchment; Upper Mersey Catchment; Weaver/Gowy Catchment	2012	United Utilities; Allerdale District Council; Cheshire County Council; Cheshire Wildlife Trust; Environment Agency; Natural England; Tameside Metropolitan Borough Council
Physical modification	Contribute to favourable condition on River Ribble (Long Preston Deeps) by	RIBBLE	2012	Environment Agency; Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	implementing river restoration project			
Direct biological pressures; Nutrients; Sediments (as a direct pollutant)	Contribute to favourable condition on Siddick Pond SSSI, Elterwater SSSI, Tatton Meres SSSI, Betley Mere SSSI, Black Firs & Cranberry Bog SSSI and Oss Mere SSSI by implementing lake restoration project	Derwent (NW) Catchment; Kent/Leven Catchment; Upper Mersey Catchment; Weaver/Gowy Catchment	2012	Natural England
Direct biological pressures	Develop and expand the Environment Agency Logbook Scheme for reporting catches, helping to improve our understanding of fishery performance. This will drive better targeted project and improvement work.	North West RBD	2012	Environment Agency; Fisheries and Angling Interests
Alien species	Develop and implement codes of practice to reduce the spread of invasive non-native species	North West RBD	2012	Environment Agency; Central Government
Alien species	Draw up Individual Species Action Plans for species identified as presenting particular risk levels, to minimise the risks associated with them	North West RBD	2012	Central Government; Environment Agency
Sediments (as a direct pollutant); Physical modification; Direct biological pressures	Encourage grip blocking of ditches on drained blanket bogs and maintenance of surface water drains which also offers opportunities towards climate change adaptation/carbon sequestration.	Derwent (NW) Catchment; Kent/Leven Catchment; South West Lakes Catchment	Implemented	Local Authorities; Lake District National Park; Natural England; North Pennines Area of Outstanding Natural Beauty (AONB) partnership; Environment Agency
Priority Hazardous Substances, Priority	Enforce Registration, Evaluation and Authorisation of Chemicals (REACH)	North West RBD	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Substances and Specific Pollutants	Annex 17 restrictions			
Physical modification	Flood/Coastal Erosion Risk Management Measure - Appropriate water level management strategies, including timing and volume of water moved	RIBBLE	2027	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Bank rehabilitation / reprofiling	Hillylaid Pool; KENT; RIBBLE	2027	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Flood bunds (earth banks) (in place of floodwalls)	Bedford Brook	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Flow manipulation (e.g. construct structures to normalise flow; realign frontage)	Bedford Brook	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Managed realignment of flood defence	RIBBLE	2027	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Operational and structural changes to locks, sluices, weirs, beach control, etc	River Weaver (Marbury Brook to Dane)	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Preserve (e.g fencing) and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone	Bedford Brook	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Preserve (e.g fencing) and	RIBBLE	2027	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone			
Physical modification	Flood/Coastal Erosion Risk Management Measure - Preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone	Bedford Brook	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone	RIBBLE	2027	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Remove obsolete structure	River Weaver (Marbury Brook to Dane)	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Retain marginal aquatic and riparian habitats (channel alteration)	Bedford Brook	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Structures or other mechanisms in place and managed to enable fish to access waters upstream and downstream of the impounding works.	River Weaver (Marbury Brook to Dane)	2011	Environment Agency
Direct biological pressures	Fund and support volunteers to tackle invasive species problems in affected rivers.	Kent/Leven Catchment	2012	Land managers and owners; Rivers Trusts
Salinity; Sediments (as a direct pollutant); Direct biological pressures; Priority Hazardous	Hoole Bank Remediation. Identification of cost effective pollution remediation methods to reduce impact of site on controlled waters.	Mersey Estuary Catchment	Implemented	Land managers and owners; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Substances, Priority Substances and Specific Pollutants				
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Implement practical measures to tackle oil pollution in Ports, harbours and docks By applying Code of Practice on Oil storage, legislation and pollution prevention campaigns; to improve water quality and reduce sedimentation.	RIBBLE; Mersey Estuary Catchment	Implemented	Environment Agency; Ports and Harbours Authorities
Organic pollutants; Direct biological pressures; Microbiology; Nutrients; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Influencing planning process to cover drainage and discharge. Sewerage supplier needs to be consulted on planning applications involving new connections or significant changes of use.	North West RBD	2012	Industry; Manufacturing and other Business; Water companies; Local Authorities; Environment Agency
Alien species	Initiate and support projects that reduce the threat of invasive non-native species in and around water bodies.	North West RBD	2012	Environment Agency
Alien species	Integrate invasive non-native species control measures across all policy areas	North West RBD	2012	Environment Agency; Central Government
Direct biological pressures; Physical modification; Sediments (as a direct pollutant)	Lunt Meadows project seeks to provide increased flood storage in the Sefton area by Managed Realignment on the River Alt. The aim is to flood washlands and associated habitats behind the embankments alongside the River Alt. Currently the land acquisition and viability studies for flood risk management and bio-reserve feasibility	Alt; Crossens	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	study are underway.			
Alien species	Make appropriate use of existing legislative powers eg prohibit the sale of high-risk species; Salmon and freshwater fish act (S30); Import of live fish act; Wildlife & Countryside Act 1981; Environment Agency Fisheries byelaws; Convention on biological diversity; NERC Act; Habitats Directive; IMO convention on ballast water)	North West RBD	2012	Environment Agency; Central Government
Direct biological pressures	Mersey Life project brings together stakeholders and partners to reduce barriers to fish migration. For this river basin planning cycle the project plans to deliver scoping, design and construction of Fish passes at Howley, Woolston, Styal, Irlam, Ashton, Marple Bridge, Disley Paper Mill, Millennium walkway-New Mills, Wilmslow, and Stanneylands with a huge range of partners in the River Mersey and its tributaries.	Mersey (Man.Ship Canal, Irlam to Howley Weir); River Bollin (River Dean to Ashley Mill); River Bollin (Source to Dean); River Dean (Bollington to Bollin); River Goyt (Black Brook to Etherow); River Mersey (upstream of Manchester Ship Canal)	Implemented	Land managers and owners; Local Authorities; Environment Agency; Developers; National Trust
Alien species	Provide advice and training on identification, control and disposal of invasive non-native species to all relevant groups and encourage monitoring schemes.	North West RBD	2012	Central Government; Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Provide advice to small and medium sized businesses on obligations in relation to priority substances, priority hazardous substances and specific	North West RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	pollutants through NetRegs website			
Abstraction and other artificial flow pressures	Seek voluntary licence reductions in Lune, Douglas, Calder (DWCD). Seek revocation of unused licences in Wyre. Actively encourage licence holders to revoke unused licences and/or reduce licence volumes where appropriate.	North West RBD	2012	Environment Agency
Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Direct biological pressures; Microbiology; Nutrients	St Micheals Golf Course. This site is currently closed to the public as it is classed as Contaminated Land. Remediation works will take place on the site next year which may -subject to defra funding- include the realignment of Stewards Brook. Our contribution will enable a sympathetic natural channel rather than a straight channel of 550 metres of Stewards Brook and contribute to a new access footpath alongside the brook.	Weaver/Gowy Catchment	Implemented	Environment Agency; Land managers and owners; Local Authorities
Physical modification; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants; Nutrients; Microbiology; Direct biological pressures; Abstraction and other artificial flow pressures	Support and fund Still Waters Partnership (SWP) at Bassenthwaite (Reflections) and Windermere. Enhanced protection of lakes, catchment restoration and sharing of best practice. Some examples are: Ghyll planting to reduce erosion, improvement of sewerage discharges, control of invasive non native species.	Derwent (NW) Catchment; Kent/Leven Catchment	Implemented	Environment Agency; Lake District National Park; Local Authorities; Natural England; United Utilities
Alien species	Support established local fora by providing advice and guidance and	North West RBD	2012	Central Government;

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	support control actions by selected local fora			Environment Agency
Physical modification	WFD mitigation measures manual for flood and coastal erosion risk management and land drainage activities. This manual will set out best practice options for measures to mitigate against the impacts of such activities upon ecology. This will be used to ensure that new and existing schemes and management activities will take into consideration WFD requirements and will result in minimal ecological damage.	North West RBD	2010	Environment Agency
Temperature; Sediments (as a direct pollutant); Direct biological pressures; Microbiology; Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants	WFD, Urban Enterprises and Rural Tourism. Awareness raising with general public, tourists and related industry on the problems caused to the water quality by fly tipping, litter and harmful substances (fat, grease, chemicals, detergents etc) that people put down the drains. Tackling diffuse pollution through collaborative programmes and projects targeting Urban Enterprises. Embedding the Water Framework Directive in the development of the tourism sector and visitor economy in more rural areas.	Derwent (NW) Catchment; Kent/Leven Catchment; South West Lakes Catchment	2012	Environment Agency; Local Authorities; Local Tourist board
Physical modification; Sediments (as a direct pollutant); Alien species	Where possible and practical allow rivers and coasts in River Kent, River Eea, River Ribble, River Gowy, Wrea Brook, River Irwell, to reconnect with their floodplain. River Restoration studies and	RIBBLE; Irwell Catchment; Kent/Leven Catchment; Weaver/Gowy Catchment	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	fluvial audits to involve land owners, flood risk management personnel and habitats personnel to allow for re-naturalising landscape and to restore habitat - regravelling, replanting, removal of alien species etc. Various projects are at feasibility stage and scoping stage			
Alien species	Work to raise awareness of the of the risks transferring non-native species to the wild amongst the public and target groups	North West RBD	2010	Central Government
Investigations				
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Investigate drainage from industrial legacy sites as potential cause of failure of copper and zinc standards on Diggle Brook.	Diggle Brook	2012	Environment Agency
Sediments (as a direct pollutant); Temperature; Microbiology; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Salinity; Nutrients	Carry out research or targeted local investigations into the origins, causes of and solutions to pollution where most risk. E.g.: Drainage and misconnection surveys of industrial estates. Misconnection of domestic sewerage systems into watercourses, colour coding outfalls etc. Diffuse oil pollution could be improved by installation of oil separators at industrial estates with associated maintenance plans. (Mersey Estuary)	RIBBLE; WYRE; Irwell Catchment; Weaver/Goway Catchment	Implemented	Industry leads; Environment Agency; Water companies; Industry; Local Authorities; Voluntary sectors
Physical modification; Abstraction and other	Contribute to the achievement of favourable condition on Over Water	Derwent (NW) Catchment;	2010	Environment Agency;

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
artificial flow pressures	SSSI, Black Firs & Cranberry Bog SSSI and Quoisley Meres SSSI by investigating hydrology	Weaver/Gowy Catchment		Natural England
Tributyltin (TBT) compounds	Identify reason for failure through investigative monitoring	River Ribble; River Ribble DS Stock Beck; River Ribble US Stock Beck	2012	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Investigate drainage from industrial legacy sites as potential cause of failure of the cadmium standards on Wade Brook/Crow Brook.	Wade Brook	Implemented	Environment Agency
Organic pollutants; Physical modification; Nutrients; Microbiology; Direct biological pressures; Abstraction and other artificial flow pressures; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Investigate Water quality issues from Contaminated land and diffused urban sources and provide Access and recreation opportunities to the local communities at Moston Brook	Moston Brook	Implemented	Environment Agency; Local Authorities
Direct biological pressures; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Salinity; Sediments (as a direct pollutant)	Investigation of a discharge of leachate into Spittle brook or a Major aquifer underneath, due to a closed landfill site at new Manchester Road, Warrington	Mersey Estuary Catchment	Implemented	Environment Agency; Local Authorities
Priority Hazardous Substances, Priority Substances and Specific	Investigation of leachate entry into controlled waters and the identification of cost effective pollution remediation	North West RBD	Implemented	Local Authorities; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Pollutants; Sediments (as a direct pollutant); Salinity; Direct biological pressures	methods to reduce the impact at Gatewarth Landfill, Warrington.			
Physical modification	Investigations into the ecological outcomes of measures to mitigate against effects of Flood & Coastal Erosion Risk Management (FCERM) activities, improving the understanding of the cost/benefit and technical feasibility of such measures and developing understanding of the underlying processes, ecological responses and applicability. Will use case studies, but outcomes will have a national application.	North West RBD	2010	Environment Agency
Abstraction and other artificial flow pressures	Investigations to determine cost effective measures to manage abstraction through the Restoration of Sustainable Abstraction programme.	North West RBD	Implemented	Environment Agency
Direct biological pressures	Monitoring, survey and habitat creation for water voles through withdrawal of maintenance and working pro-actively with farmers. This will also involve the removal of redundant revetment and structures to enhance in-channel habitat for water vole, with additional benefits for fish and invertebrates.	LUNE; RIBBLE; WYRE; Mersey Estuary Catchment; Upper Mersey Catchment; Weaver/Gowy Catchment	2012	Rivers Trusts; Land managers and owners; Natural England
Alien species	Seek sustainable and cost-effective methods for managing established invasions, such as biological control	North West RBD	2012	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	The PSA3 [Public Service agreement 3] river restoration project is planned to allow the Environment Agency to fulfil its responsibilities for a number of remedies agreed with Natural England at a national level to contribute to the achievement of bringing the Rivers Kent, and Derwent Site of Special Scientific Interest (SSSI)/Special Area of Conservation (SAC) back into favourable/favourable recovering condition. These river restoration remedies will make a significant contribution to the Agency's FCRM (Flood and Coastal Risk Management) OM4 target (Outcome Measures set by Defra). The project would be a partnership project with Natural England and consists of a field geomorphological and ecological survey phase. This will be used to work out how the rivers are modified, what actions are required for each reach leading to a vision for each river.	Derwent (NW) Catchment; Kent/Leven Catchment	2010	Riparian owners; Natural England; National Trust; Environment Agency; National Farmers' Union
Physical modification; Sediments (as a direct pollutant); Direct biological pressures	Trail new mowing regime on the flood defence assets in the Mersey Valley, starting with Chorlton Meadows. This trial would help to find a mowing routine, that is beneficial to the bank side ecology while posing no additional risk of flooding.	Chorlton Brook (Princess Parkway to Mersey)	Implemented	Environment Agency
Acidification; Microbiology;	Undertake investigations to better	North West RBD	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Nutrients; Organic pollutants; Physical modification; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	understand problems in water bodies where extended deadlines have been put in place and identify actions to resolve them where possible.			
Sediments (as a direct pollutant); Acidification; Direct biological pressures; Microbiology; Nutrients; Organic pollutants; Physical modification; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Where appropriate, subject to the Environment Agency carrying out a 12 week public consultation and making an appropriate case to the Secretary of State, designate a limited number of Water Protection Zones. Regulatory tool to control diffuse pollution in high risk areas where other mechanisms are not working or are unlikely to work. Initially around 8 candidate locations across England. Potential for designation from 2010 with possibility of further WPZs by 2012	North West RBD	2012	Environment Agency
Natura 2000 protected areas and SSSIs				
Direct biological pressures	Contribute to maintenance of, or restoration to favourable conservation status on Natura 2000 Protected Areas by developing an Invasive species control programme for protected areas (See Annex D)	North West RBD	2012	Environment Agency; Natural England
Sediments (as a direct pollutant); Physical	Contribute to maintenance of, or restoration to favourable conservation	North West RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
modification; Nutrients	status on Natura 2000 Protected Areas by revoking or amending Discharge/PPC Consents (See Annex D)			
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through River Restoration Programme for Protected Areas (See Annex D)	North West RBD	2012	Environment Agency; Natural England
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through River Restoration Scheme (See Annex D)	North West RBD	2012	Environment Agency
Nutrients; Abstraction and other artificial flow pressures; Physical modification	Contribute to maintenance of, or restoration of, favourable conservation status on Natura 2000 Protected Areas through Water Level Management Plans (See Annex D)	North West RBD	2012	Environment Agency; Agriculture and rural land management (under query)
Investigation - Natura 2000 protected areas and SSSIs				
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Investigation into water quality, morphology and invasive species pressures (See Annex D)	North West RBD	2012	Natural England; Environment Agency

C.8 Industry, manufacturing and other business

The North West is home to an estimated 230,000 companies, employs over 4 million people and contributes £98 billion to the UK economy. Most of the Top 100 companies in the UK have their operations in the region. The key economic sectors in the district are Aerospace, Automotive, Biomedical, Chemicals, Digital and Creative, Energy and Environmental Technologies, Food and Drink, and Financial and Professional. The Lake District National Park, Forest of Bowland, Morecambe Bay, Blackpool, Manchester and Liverpool put the North West firmly on the tourist map. Tourism contributes about £11 billion to the North West economy.

All businesses have some environmental footprint: It may be emitting polluting substances to air, water or land; using water; producing waste; using energy etc. Business and industry is now better regulated than ever. Where appropriate, regulation is risk based with operators and owners taking responsibility for their environmental impact. There is now a growing awareness of green issues within businesses and we support initiatives of reducing waste at source and water and energy efficiency. The Environment Agency runs sector specific pollution prevention and advisory campaigns with businesses and industries. Regional Economic Strategies are key documents to manage the impact of future economic growth, by aiming to demonstrate that this growth can be secured sustainably, within environmental limits to bring prosperity to the region.

Table C8: **Actions for Industry, manufacturing and other business**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Saline intrusion	CAMS – Implement abstraction licensing controls to minimise and manage risks from saline intrusion to aquifers.	Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers; Manchester and East Cheshire Permo-Triassic Sandstone Aquifers; Wirral and West Cheshire Permo-Triassic Sandstone Aquifers	Implemented	Environment Agency
Saline intrusion	CAMS – Implement abstraction licensing controls to minimise and	North West RBD	Implemented	Water companies; Environment

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	manage risks from saline intrusion.			Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with Environment Agency Notice (WRA S86 and S161, Groundwater Regulations, contaminated land legislation). Make use of site specific notices to remove pollution risk to groundwater.	North West RBD	Implemented	Land managers and owners
Nitrate	Comply with Environment Agency Notice (WRA S86 and S161, Groundwater Regulations, Contaminated Land Regulations). Make use of site specific notices to remove pollution risk to groundwater.	North West RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with Environment Agency Notice (WRA S86 and S161, Groundwater Regulations, Contaminated Land Regulations). Make use of site specific notices to remove pollution risk to groundwater	North West RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with environmental permit conditions	North West RBD	Implemented	Industry leads
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with Local Authority Contaminated Land Regulations Notices. Make use of site specific notices to remove pollution risk to groundwater	North West RBD	Implemented	Local Authorities; Land managers and owners
Nitrate	Development planning - planning liaison. Site specific groundwater	North West RBD	Implemented	Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	pollution prevention advice and recommendations			
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants (Metals)	Development plans - influence location of development to protect groundwater	North West RBD	Implemented	Water companies; Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Development planning: land contamination - site specific advice and required action for remediation of contaminated land through planning liaison	North West RBD	Implemented	Environment Agency; Local Authorities
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Environment Agency Notice powers (WRA S86 and S161, Groundwater Regulations) Site specific notice to remove pollution risk to groundwater	North West RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Environmental Permitting – effluent discharges to ground	North West RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Environmental Permitting - Process Industries Regulation	North West RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Environmental Permitting - waste disposal	North West RBD	Implemented	Environment Agency
Indeno (123-cd) pyrene; Benzo	EU Restriction on use of PAH content	North West RBD	Implemented	EU

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
(ghi) perylene; Fluoranthene; Benzo(a)pyrene	in oil used in the manufacture of tyres			
Trichloroethylene	EU-wide ban on use	North West RBD	Implemented	EU
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Follow Petrol Retailing Code of Practice (Groundwater Regulations) - advice for operators	North West RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Follow Solvents Code of Practice (Groundwater Regulations) - comply with published advice for operators	North West RBD	Implemented	Industry leads
Priority Hazardous Substances, Priority Substances and Specific Pollutants	General guidance to improve Pesticide use through the Amenity Forum	North West RBD	implemented	Amenity Forum
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants (Metals)	Groundwater protection advice to Veterinary Medicines Directorate products approvals process	North West RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Implement DCLG Planning Policy Guidance Statement 23 (PPS23) on controlling pollution of groundwater	North West RBD	Implemented	Local Authorities
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Implement DCLG Planning Policy Guidance Statement 23 (PPS23) on controlling pollution of groundwater that may arise from development of land	North West RBD	Implemented	Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Nitrate	Implement DCLG Planning Policy Guidance Statement 23 (PPS23) on controlling pollution of groundwater that may arise from development of land	North West RBD	Implemented	Local Authorities
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Implement Groundwater Protection: Policy & Practice - External education on GW pollution prevention	North West RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Implementation of 'oil-filled cables' operating agreement with electricity transmission companies	North West RBD	Implemented	Industry leads; Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Follow the SUDS (sustainable drainage systems) Interim Code of Practice - comply with published advice for operators	North West RBD	Implemented	Industry leads
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Temperature; Sediments (as a direct pollutant); Salinity; Microbiology; Organic pollutants; Nutrients	Improve regulatory control for tackling misconnections to foul and surface water sewers on industrial estates. Providing guidance to planners, developers, estate owners and tenants.	North West RBD	Implemented	Industry leads; Local Authorities; Water companies; Environment Agency
Salinity; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Physical modification; Organic	Industries, businesses and commercial enterprises need to be more involved in improving local water stretches to sponsor biodiversity improvements etc. Business Award	North West RBD	Implemented	Manufacturing and other Business; Environment Agency; Water companies;

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
pollutants; Nutrients; Microbiology; Abstraction and other artificial flow pressures; Direct biological pressures	schemes for good environmental practice.'			Industry
Abstraction and other artificial flow pressures	Introduce Water Efficiency requirements in Environmental Permitting Regulation (EPR) permits	North West RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Local Authority Contaminated Land Regulations Notice powers - Use of site specific notices to remove pollution risk to groundwater	North West RBD	Implemented	Local Authorities
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants (Metals)	NetRegs (Environmental Guidance to Business) - External education on ground water pollution legislation	North West RBD	Implemented	Environment Agency
Sediments (as a direct pollutant); Priority Hazardous Substances, Priority Substances and Specific Pollutants	Pollution Prevention Campaigns for industrial estates targeting construction companies and securing buy in from potential partners to improve their environmental performance. This is underpinned by local work by Environment Officers with local construction companies at specific sites. Regionally we work to cascade the good practice guidance down to local companies through specific campaigns, promotion of NetRegs etc.	North West RBD	Implemented	Environment Agency
Abstraction and other artificial	Promote the efficient and responsible	North West RBD	2010	Environment

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
flow pressures	use of water through a targeted water efficiency campaign			Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Proposed oil pipelines Operating Agreement(s)	North West RBD	2012	Environment Agency; Industry leads
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants (Metals)	Provide development planning standing advice	North West RBD	Implemented	Environment Agency
Mercury and its compounds	Recently introduced restrictions across the UK will see decreasing trend in emissions and probable compliance by 2015 with no further action	North West RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants (Metals)	Re-engineer existing discharges to avoid direct discharges of pollutants to groundwater	North West RBD	Implemented	Water companies; Environment Agency
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants (Metals)	Registrations (in conjunction with Standard Rules) - Implement new regulatory approach (via Environmental Permitting Regulations) arising from implementation of new Groundwater Directive (2006/116/EC)	North West RBD	2012	Land managers and owners; Environment Agency; Industry leads
Organic pollutants; Temperature; Priority Hazardous Substances,	Through our Groundworks and Waterside Campaign raise awareness with domestic customers, SMEs and	North West RBD	Implemented	Environment Agency; United

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Priority Substances and Specific Pollutants; Nutrients; Microbiology; Direct biological pressures; Sediments (as a direct pollutant)	traders on the problems caused to the environment by what people put down their drains; specifically on chemicals in the products used, vehicle washings and on the disposal of fats, oils and greases.			Utilities
Temperature; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Salinity; Direct biological pressures; Organic pollutants; Nutrients; Microbiology; Sediments (as a direct pollutant)	To address the water quality issues in Esthwaite Water which also impacts quality of water in Windermere and wild fish migration; work in partnership with Natural England, Lake District National Park Authority towards addressing impacts from Esthwaite Fish farm.	Kent/Leven Catchment	2012	Environment Agency; Lake District National Park; Natural England
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Total Oil Operating agreement	North West RBD	Implemented	Environment Agency; Industry leads
Nitrate	Waste exemptions - low risk approach to waste regulation activities	North West RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	We will enforce and where required amend Environmental Permits and use other statutory requirements to make improvements.	Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers; Manchester and East Cheshire Permo-Triassic Sandstone Aquifers; South Cumbria Lower Palaeozoic and Carboniferous Aquifers; Wirral and West Cheshire Permo-Triassic Sandstone Aquifers	Implemented	Environment Agency; Ineos Chlor; Shell

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	We will provide pollution prevention guidance at industrial sites throughout the groundwater body.	Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers	2012	Environment Agency
Hazardous substances and non-hazardous pollutants; Saline intrusion; Priority Substances and Specific Pollutants (Metals)	We will work with abstractors and provide pollution prevention advice to reverse trends.	Manchester and East Cheshire Permo-Triassic Sandstone Aquifers; South Cumbria Lower Palaeozoic and Carboniferous Aquifers	Implemented	Kelloggs; Sunlight Services
Abstraction and other artificial flow pressures	Work with businesses to improve competitiveness through water demand management and water minimisation through the SWEL programme managed by Groundwork.	RIBBLE; WYRE	Implemented	Voluntary sectors; Environment Agency
Investigations				
Iron	Further monitoring to confirm risk of failure of WFD Article 7	Rhodeswood Reservoir; Torside Reservoir	2010	Environment Agency; Water companies
Iron	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can be considered	Arnfield Reservoir	2010	Environment Agency; Water companies
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Continued and improved monitoring on how priority substances end up in aquifers.	Wirral and West Cheshire Permo-Triassic Sandstone Aquifers	Implemented	Ineos Chlor
Dredging and trawling	Investigation into the impact of	North West RBD	2010	Environment

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
(commercial fishing and shellfish)	commercial shell and fin fisheries to improve the risk assessment of the impact of these activities on ecology and to identify appropriate measures. Will use case studies, but outcomes will have a national application.			Agency
Abstraction; Pressures on groundwater (GW) balance	Investigation to improve confidence in GW quantitative status result	Furness Permo-Triassic sandstone aquifers	2012	Environment Agency
Sediments (as a direct pollutant); Organic pollutants; Nutrients; Direct biological pressures; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Research and Remediation of historically contaminated sediments (industrial legacy). Prevent leachate contaminating the water courses.	North West RBD	2012	Environment Agency; Local Authorities
Nitrate; Phosphate	We will continue to monitor and investigate the increasing trends in Nitrate and phosphate in the groundwater body.	South Cumbria Lower Palaeozoic and Carboniferous Aquifers	2012	Environment Agency
Nitrate	We will investigate high nitrates and provide pollution prevention advice where appropriate in order to reverse increasing trend.	Manchester and East Cheshire Permo-Triassic Sandstone Aquifers	2012	Magnesium Elektron
Natura 2000 protected areas and SSSIs				
Abstraction and other artificial flow pressures; Nutrients	Contribute to maintenance of, or restoration to favourable conservation status on Natura 2000 Protected Areas by revoking or amending abstraction licences (See Annex D)	North West RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification; Sediments (as a direct pollutant); Nutrients	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by revoking or amending Discharge/PPC Consents (See Annex D)	North West RBD	2012	Environment Agency

C.9 Local and regional government

Local government is responsible for working with the community to implement Government policy and maintain public services and facilities, from parks and education to social services and transport. In addition to the delivery of public services by individual councils and other statutory agencies, there is an increasing emphasis on the importance of organisations working in partnership with each other i.e. through Local Strategic Partnerships bringing together key service providers from the private, business, community and voluntary sectors into a single partnership.

There are six unitary authorities within the North West River Basin District. These are single tier and deliver the full range of services, including education, social services, council tax and housing benefits, public libraries, museums and art galleries, traffic and transportation, refuse collection, recycling and disposal, planning, environmental health, swimming pools and leisure facilities, parks, open spaces and countryside including footpaths, cemeteries and crematoria, markets and fairs, registration of births, deaths, marriages and electorates, collecting council tax and business rates.

The remaining two tier authorities consist of 2 county councils and 42 district, borough or city councils. The responsibilities laid out above are split between the two tiers. Town and Parish councils exist at the most local level across the whole of the district.

Table C9: **Action for local and regional government**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction and other artificial flow pressures	Advocate the need for appropriate Water Cycle Strategies in regional and local plans, particularly in growth or high risk areas.	North West RBD	2012	Environment Agency
Sediments (as a direct pollutant); Priority Hazardous Substances, Priority	Aquatic Litter Programme. Funding the work of a Mersey Basin Campaign (MBC) Project Officer to tackle the problem of	RIBBLE; Alt/Crossens Catchment; Irwell Catchment; Mersey	Implemented	Mersey Basin Campaign; Rivers Trusts

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Substances and Specific Pollutants; Microbiology; Abstraction and other artificial flow pressures	waterborne debris including that prevalent in culverts. In some instances litter traps can be introduced on suitable rivers.	Estuary Catchment; Upper Mersey Catchment; Weaver/Gowy Catchment		
Abstraction and other artificial flow pressures; Sediments (as a direct pollutant); Physical modification; Direct biological pressures; Nutrients	'Contribute to favourable condition on Over Water SSSI, Siddick Pond SSSI, Blelham Tarn & Bog SSSI, Esthwaite Water SSSI, Little Langdale Tarn SSSI, Brantrake Moss & Devoke Water SSSI, Tatton Meres SSSI, Rostherne Mere SSSI, The Mere, Mere SSSI, Bar Mere SSSI, Chapel Mere SSSI, Comber Mere SSSI, Hatch Mere SSSI, Norbury Meres SSSI, Oss Mere SSSI, Pettypool Brook Valley SSSI, Quoisley Meres SSSI, Tabley Mere SSSI, Siddick Pond SSSI, Claife Tarns and Mires SSSI, Elterwater SSSI, Bar Mere SSSI, Black Firs & Cranberry Bog SSSI, Betley Mere SSSI and Hollinwood Branch Canal SSSI by developing pollution action plan	Derwent (NW) Catchment; Irwell Catchment; Kent/Leven Catchment; South West Lakes Catchment; Upper Mersey Catchment; Weaver/Gowy Catchment	2012	Allerdale District Council; Cheshire Wildlife Trust; Environment Agency; Natural England; Tameside Metropolitan Borough Council; United Utilities; Cheshire County Council
Abstraction and other artificial flow pressures; Direct biological pressures; Physical modification	'Contribute to favourable condition on Silloth Dunes and Mawbray Bank Site of Special Scientific Interest (SSSI), Hollinwood Branch Canal SSSI and Sound Heath SSSI by undertaking specific management works	Derwent (NW) Catchment; Irwell Catchment; Weaver/Gowy Catchment	2010	Tameside Metropolitan Borough Council; Crewe And Nantwich Borough Council; Allerdale District Council
Hazardous substances and non-hazardous pollutants; Priority Substances and	Fire service Memorandum of Understanding (MoU) on implementing pollution control measures in emergencies	North West RBD	Implemented	Local Authorities; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Specific Pollutants (Metals)				
Priority Hazardous Substances, Priority Substances and Specific Pollutants	General guidance to improve Pesticide use through the Amenity Forum	North West RBD	Implemented	Amenity Forum
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Implement Department of Communities and Local Government (DCLG) Planning Policy Guidance Statement 23 (PPS23) on controlling pollution of groundwater	North West RBD	Implemented	Local Authorities
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Implement DCLG PPS23 on controlling pollution of groundwater that may arise from development of land	North West RBD	Implemented	Local Authorities
Nitrate	Implement DCLG PPS23 on controlling pollution of groundwater that may arise from development of land	North West RBD	Implemented	Local Authorities
Abstraction and other artificial flow pressures	Include strong water efficiency policies in Spatial Strategies and Local Development Plans / Frameworks	North West RBD	2012	Local Authorities
Physical modification; Direct biological pressures	Introduce Woody Debris into River Dane to improve in-channel habitat for the benefits of invertebrates, fish and riparian mammals.	River Dane (Cow Brook to Wheelock); River Dane (Source to Clough Brook); River Dane (Wheelock to Weaver)	Implemented	Environment Agency
Sediments (as a direct pollutant); Direct biological pressures	Involve local action groups in beach combing and awareness raising about marine litter. Improve coordination of beach and coastline monitoring and to agree common methods. Encouraging	North West RBD	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	and funding research programmes regarding quantities of plastics ending up in marine environment.			
Sediments (as a direct pollutant); Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants	Promote SUDs and make guidance readily available in urban areas to reduce pollution through sediments, chemicals, oils, nutrients and to control surface water flooding. Encourage schemes like reed beds on polluted surface waters and interceptor/retention basins on road outfalls.	North West RBD	Implemented	Environment Agency; Local Authorities
Temperature; Nutrients; Organic pollutants; Sediments (as a direct pollutant); Microbiology; Salinity	Raise awareness through our Contaminated Surface water Programme, about septic tank maintenance, promote solutions and alternatives to first time rural sewage systems eg: new generation of compostable toilets. Mail shots to residents and owners.	LUNE; RIBBLE; WYRE	Implemented	Environment Agency; Local Authorities; Water companies
Abstraction and other artificial flow pressures	Reduce water demand through offering of tax incentives (enhanced Capital Allowances) for the purchase and use of efficient plant and fittings by commercial organisations.	North West RBD	Implemented	Defra
Abstraction and other artificial flow pressures	Reduction of demand through specification of water efficient fittings in new and refurbished homes under Building Regulations	North West RBD	2010	Local Authorities
Priority Hazardous Substances, Priority Substances and Specific	Remediation of historical landfills Bent Haw and South Walney which are affected by coastal erosion and pose a	South West Lakes Catchment	Implemented	Barrow Borough Council; Environment Agency; Land managers and

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Pollutants; Sediments (as a direct pollutant); Direct biological pressures; Acidification	threat to South Walney and Peil Flatts SSSI and human health through leachate leaking onto the beach as a result of marine erosion. Investigation is now complete and next step is some form of remediation through EPA90 Part IIA with Department for the Environment, Food & Rural Affairs (Defra) funding			owners
Abstraction and other artificial flow pressures; Direct biological pressures; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Support and fund the Weaver Way regeneration project which will form the spine - about 20Km2- of access network throughout the Weaver Valley.	Weaver/Gowy Catchment	Implemented	Developers; Local Authorities
Direct biological pressures	Support and fund the work of Mersey Life Project which aims to realise the social, economic and ecological potential of the rivers of the Mersey Basin through a phased programme of river restoration.	Mersey Estuary Catchment; Upper Mersey Catchment	Implemented	Environment Agency
Sediments (as a direct pollutant); Physical modification; Abstraction and other artificial flow pressures; Direct biological pressures	Support and fund the work of Morecambe Bay Wetlands Network, which works towards enhancing the tourism potential of the north eastern part of Morecambe Bay. Areas of work are Leighton Moss, the Mosses, SSSI network, the Lythe Valley and Meathop Moss.	Kent/Leven Catchment	Implemented	Environment Agency; Natural England; North West Regional Development Agency
Abstraction and other artificial flow pressures; Direct biological pressures; Priority Hazardous	Support and Fund the work of Northwich Vision, to enable Environment Agency to make a strategic contribution to the 15 year urban regeneration framework for the	Weaver/Gowy Catchment	Implemented	Developers; Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Substances, Priority Substances and Specific Pollutants	Northwich Area .			
Abstraction and other artificial flow pressures; Direct biological pressures; Organic pollutants; Physical modification; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Support and fund the work of the Mersey Basin Campaign till March 2010.	RIBBLE; Alt/Crossens Catchment; Irwell Catchment; Mersey Estuary Catchment; Upper Mersey Catchment; Weaver/Gowy Catchment	Implemented	Voluntary sectors
Direct biological pressures; Physical modification; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Salinity	Support Coastal group to look at Shoreline Management issues and to oversee the development of North West Shoreline Management Plans. Links need to be made between WFD and Marine Bill and communicate coastal issues from a regional perspective.	North West RBD	2012	Local Authorities; Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Physical modification; Organic pollutants; Nutrients; Microbiology; Direct biological pressures; Abstraction and other artificial flow pressures	WaterProof Northwest is a project looking at what the future might hold for the Northwest's water environment. The project aims to make recommendations for river basin management planning in the Northwest and seeks to provide a forum for planners, policy makers and practitioners to discuss the opportunities of water policy and spatial planning	North West RBD	2011	Water companies; Environment Agency; Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	WFD mitigation measures manual for flood and coastal erosion risk management and land drainage activities. This manual will set out best practice options for measures to mitigate against the impacts of such activities upon ecology. This will be used to ensure that new and existing schemes and management activities will take into consideration WFD requirements and will result in minimal ecological damage.	North West RBD	2010	Environment Agency
Investigations				
Sediments (as a direct pollutant); Salinity; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Direct biological pressures	A potential development of a stretch of contaminated land at Pilkinton Sullivan offers the opportunity of its remediation. This project is being done along with the prestigious Mersey gateway crossing project under the town and country planning Act.	Mersey Estuary Catchment	Implemented	Local Authorities
Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Carry out a mapping study of growth and infrastructure in relation to diffuse pollution. Then identify and target the hot spots for further action.	North West RBD	Implemented	Environment Agency; Local Authorities
Abstraction and other artificial flow pressures; Temperature; Sediments (as a direct pollutant); Salinity; Priority Hazardous	Ensure there is a holistic assessment of Water Services Infrastructure, including water supply, sewage disposal, flood risk management and surface water drainage for all major planning applications	North West RBD	2012	Environment Agency; Local Authorities; United Utilities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Substances, Priority Substances and Specific Pollutants; Organic pollutants; Nutrients; Microbiology				
Direct biological pressures; Sediments (as a direct pollutant)	Extend the Environment Agency's Operations delivery maintenance programme that keeps the ditches clear from silt by periodic dredging where ecological benefits of dredging are clear. Investigations need to be made about sites and times most appropriate for dredging such that biodiversity is benefited the most.	Alt/Crossens Catchment	2012	Environment Agency; Land managers and owners; Local Authorities; Natural England
Sediments (as a direct pollutant); Direct biological pressures; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Salinity	Investigation of a discharge of leachate into a controlled water course due to a closed landfill site at Johnson's lane under Part II A.	Mersey Estuary Catchment	Implemented	Local Authorities
Physical modification	Investigations into the ecological outcomes of measures to mitigate against effects of Flood and Coastal Erosion Risk Management (FCERM) activities, improving the understanding of the cost/benefit and technical feasibility of such measures and developing understanding of the underlying processes, ecological responses and applicability. Will use case studies, but outcomes will have a national application.	North West RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Nitrate	Local campaigns on controlling nitrate releases to land and water. Investigations will be conducted to identify pollution sources and effects.	Manchester and East Cheshire Permo-Triassic Sandstone Aquifers	2012	Environment Agency
Direct biological pressures; Physical modification	The Old Irwell project in Irlam, Greater Manchester, will seek to address pollution incidents and fish kills. Plans are to carry out habitat enhancement works at the site for the local community as well.	Irwell Catchment	Implemented	Environment Agency

C.10 Mining and quarrying

The varied geology of the North West River Basin District means that there has been considerable production of industrial and constructional minerals from quarries and underground mines. Historically deep mining has been important to the region with copper and lead mining predominant in the north of the district and coal mining in the south. Although many of the deep mines in the region have closed; open cast mining and quarrying continues, along with the continuing deep mining of salt in Cheshire. The most important environmental issues are to do with water quality and sediment management.

Pressure associated with historical mining activities is evident across the whole river basin district. Historic activity has left the North West River Basin District with 25 river water bodies at risk from pollution from abandoned coal mines and 12 river water bodies at risk from pollution from abandoned non-coal mines.

Uncontrolled discharges from former mine workings are often acidic and contain metals and other toxic substances. These can have significant impacts on ecology. Ochreous discharges are prominent and typified by orange staining of rivers, for example the staining of the Bridgewater canal at Worsley. Discharges at Deerplay, Old Meadows, Aspull Sough and the Worley Delph are being treated through treatment plants put in place under a programme run by the Coal Authority. However many discharges still remain to be treated and no program of installing treatment plants exists for non-coal mines.

Mining and quarrying activity is now well regulated however there is an ongoing need to ensure that, when they close, arrangements are in place to manage future discharges as groundwater levels return to normal. Dealing with this and the environmental legacy of historic activities will be expensive and presents a major technical challenge. Although we will make progress, it is likely that in places we will need to continue to live with the impacts for years to come.

Table C10: **Mining and quarrying sector**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Priority Substances and Specific Pollutants (Metals); Hazardous substances and	Coal Authority minewater pumping schemes to prevent intrusion	North West RBD	Implemented	Coal Authority

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
non-hazardous pollutants				
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants	Coal Authority minewater restoration programme	North West RBD	Implemented	Coal Authority
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants	Coal Authority pumping	Manchester and East Cheshire Carboniferous Aquifers	2015	Environment Agency; Coal Authority
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Coal Authority Scheme at Aspull Sough	Douglas, Darwen and Calder Carboniferous Aquifers	Implemented	Coal Authority
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants	Coal Authority scheme at Bridgewater Canal	Sankey and Glaze Carboniferous aquifers	Implemented	Coal Authority
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Coal Authority scheme at Deerplay	Douglas, Darwen and Calder Carboniferous Aquifers	Implemented	Coal Authority
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Coal Authority scheme at Down Brook	Sankey and Glaze Carboniferous aquifers	2012	Coal Authority
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants	Coal Authority Scheme at Ewanrigg	Derwent and West Cumbria Lower Palaeozoic and Carboniferous Aquifers	Implemented	Coal Authority

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants	Coal Authority scheme at Fennyfield	Northern Manchester Carboniferous Aquifers	Implemented	Coal Authority
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants	Coal Authority Scheme at Great Clifton	Derwent and West Cumbria Lower Palaeozoic and Carboniferous Aquifers	Implemented	Coal Authority
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Coal Authority scheme at Hockery Brook	Sankey and Glaze Carboniferous aquifers	Implemented	Coal Authority
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants	Coal Authority scheme at Old Meadows	Northern Manchester Carboniferous Aquifers	Implemented	Coal Authority
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Coal Authority scheme at Pemberton	Douglas, Darwen and Calder Carboniferous Aquifers	Implemented	Coal Authority
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants	Coal Authority scheme at Summerscale	Douglas, Darwen and Calder Carboniferous Aquifers	2012	Coal Authority
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with Environment Agency Notice (WRA S86 and S161, Groundwater Regulations, Contaminated Land Regulations). Make use of site specific notices to remove	North West RBD	Implemented	Land managers and owners

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	pollution risk to groundwater			
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with Environment Agency Notice (Water Resources Act 1991 (WRA) S86 and S161, Groundwater Regulations, Contaminated Land Regulations). Make use of site specific notices to remove pollution risk to groundwater	North West RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with Local Authority Contaminated Land Regulations Notices. Make use of site specific notices to remove pollution risk to groundwater	North West RBD	Implemented	Industry leads; Local Authorities
Abstraction	Extension of abstraction control to include previously exempt uses (abstractions by Ports and Harbour authorities from tidal waters under certain conditions likely to remain exempt)	North West RBD	2012	Environment Agency
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants	Groundwater protection advice to Veterinary Medicines Directorate products approvals process	North West RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals); Priority Hazardous Substances, Priority Substances and Specific	Implementation of best practice controls and remediation at abandoned coal mines	Black Brook; Hyndburn Brook; Millingford (Newton) Brook; Naden Brook; River Calder; River Douglas; River Roch (Source to Beal); Smithy Brook	2015	Coal Authority

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Pollutants				
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants; Nitrate	Registrations (in conjunction with Standard Rules) - Implement new regulatory approach (via Environmental Permitting Regulations) arising from implementation of new Groundwater Directive (2006/116/EC)	North West RBD	2012	Land managers and owners; Industry leads; Environment Agency; householders
Investigations				
Iron	Further monitoring to confirm risk of failure of WFD Article 7	High Bullough Reservoir; Anglezarke Reservoir	2010	Environment Agency; Water companies
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals); Priority Hazardous Substances, Priority Substances and Specific Pollutants	Investigate discharges from abandoned metal, and other non-coal mines. Prioritise for inclusion in national agreement with relevant mines partner organisations.	Newlands Beck; River Annas; River Derwent; River Derwent DS Bassenthwaite Lake; River Derwent US Bassenthwaite Lake; Yewdale/Church Beck	2012	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Acidification	Monitoring, scoping and possible remediation of South West Lakes acidification legacy due to its historic copper and lead mining industry .	Coniston Water; River Crake; River Derwent DS Bassenthwaite Lake; River Derwent US Bassenthwaite Lake	Implemented	Environment Agency; Land managers and owners

C.11 Navigation

Maritime history is important to the North West, and ports and marinas provide important regional infrastructure, supporting local economies and businesses. Ports handle approximately 95% of UK trade in tonnage terms. Domestic coastal freight services contribute to reducing road congestion and can provide a more environmentally friendly mode of transport than road or rail. The North West River Basin District is home to the Port of Liverpool and the Manchester Ship Canal alongside other smaller commercial ports and ferry terminals. There are also a number of harbours and marinas.

The ports sector plays a key role as both regulators and undertakers of marine operations, including counter pollution responsibilities. Shipping relies on safe access to water of an adequate depth; to allow this regular maintenance dredging needs to take place in many areas. Dredging and disposal are highly regulated activities to minimise harm to the environment.

The North West River Basin District also has a vast network of canals which were vital to the development of the regions industries. After years of neglect many of these canals are now being restored and are a catalyst for the regeneration of waterfront areas and the surrounding communities. Historically, many rivers were deepened and straightened to allow navigation. This, along with the impacts of weirs, has had a detrimental impact on the ecology of the rivers.

Table C11: **Actions for the Navigation sector**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Develop national guidance framework on dredging to inform Programme of Measures to meet WFD objectives	Allonby Bay; ALT; Cavendish Dock; Cumbria; DERWENT; DUDDON; ESK (W); Haws Bank Lagoons; Hodbarrow Lagoon; KENT; LEVEN; LUNE; MARYPORT; MERSEY; Mersey Mouth; Morecambe Bay & Duddon Sands; POW / ROTTINGTON; RIBBLE; Solway Outer South; WYRE	Implemented	Defra

	Description of the action			
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Develop national guidance framework on disposal of dredgings to inform Programme of Measures to meet WFD objectives	Allonby Bay; ALT; Cavendish Dock; Cumbria; DERWENT; DUDDON; ESK (W); Haws Bank Lagoons; Hodbarrow Lagoon; KENT; LEVEN; LUNE; MARYPORT; MERSEY; Mersey Mouth; Morecambe Bay & Duddon Sands; POW / ROTTINGTON; RIBBLE; Solway Outer South; WYRE	Implemented	Defra
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Apply national guidance framework on dredging to refine local measures as appropriate (where not disproportionately costly or technically infeasible)	Allonby Bay; ALT; Cavendish Dock; Cumbria; DERWENT; DUDDON; ESK (W); Haws Bank Lagoons; Hodbarrow Lagoon; KENT; LEVEN; LUNE; MARYPORT; MERSEY; Mersey Mouth; Morecambe Bay & Duddon Sands; POW / ROTTINGTON; RIBBLE; Solway Outer South; WYRE	2012	Marine and Fisheries Agency; Defra
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Apply national guidance framework on disposal of dredgings to refine local measures as appropriate (where not disproportionately costly or technically infeasible)	Allonby Bay; ALT; Cavendish Dock; Cumbria; DERWENT; DUDDON; ESK (W); Haws Bank Lagoons; Hodbarrow Lagoon; KENT; LEVEN; LUNE; MARYPORT; MERSEY; Mersey Mouth; Morecambe Bay & Duddon Sands; POW / ROTTINGTON; RIBBLE; Solway Outer South; WYRE	2012	Marine and Fisheries Agency; Defra
Dredging (sediment management)	Dredging and disposal framework (Ports sector), which will provide guidance to all those undertaking or permitting navigation dredging and dredged material disposal activities to assist in achieving the statutory objectives of the WFD and related EQS Directive (2008/105/EEC).	Allonby Bay; ALT; Cavendish Dock; Cumbria; DERWENT; DUDDON; ESK (W); Haws Bank Lagoons; Hodbarrow Lagoon; KENT; LEVEN; LUNE; MARYPORT; MERSEY; Mersey Mouth; Morecambe Bay & Duddon Sands; POW / ROTTINGTON; RIBBLE; Solway Outer South; WYRE	2012	Environment Agency
Tributyltin (TBT) compounds	EU-wide ban on marketing of TBT as a biocide in the EU	North West RBD	Implemented	EU
Tributyltin (TBT)	EU-wide non-application of TBT to	North West RBD	Implemented	EU

	Description of the action			
compounds	boat hulls from July 2003. From January 2008 TBT should not be used on ship hulls or there should be a coating to prevent leaching of underlying TBT anti-foulants			
Abstraction	Extension of abstraction control to include previously exempt uses (abstractions by Ports and Harbour authorities from tidal waters under certain conditions likely to remain exempt)	North West RBD	2012	Environment Agency
Tributyltin (TBT) compounds	Help prevent illegal use of old TBT containing products	North West RBD	Implemented	British Marine Federation; British Waterways; Environment Agency; Royal Yachting Association
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Review existing controls for dredging inside and outside harbour limits as appropriate	Allonby Bay; ALT; Cavendish Dock; Cumbria; DERWENT; DUDDON; ESK (W); Haws Bank Lagoons; Hodbarrow Lagoon; KENT; LEVEN; LUNE; MARYPORT; MERSEY; Mersey Mouth; Morecambe Bay & Duddon Sands; POW / ROTTINGTON; RIBBLE; Solway Outer South; WYRE	2012	Marine and Fisheries Agency; Defra
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Review existing controls for disposal of dredgings inside and outside harbour limits as appropriate	Allonby Bay; ALT; Cavendish Dock; Cumbria; DERWENT; DUDDON; ESK (W); Haws Bank Lagoons; Hodbarrow Lagoon; KENT; LEVEN; LUNE; MARYPORT; MERSEY; Mersey Mouth; Morecambe Bay & Duddon Sands; POW / ROTTINGTON; RIBBLE; Solway Outer South; WYRE	2012	Marine and Fisheries Agency; Defra

		Description of the action		
Investigations				
Tributyltin (TBT) compounds	Investigate the reason for failure: to assess the contribution from dredging or disposal activities on Environmental Quality Standards (EQS) compliance as appropriate	Biddulph Brook; Croxteth/Knowsley Brook; Fazakerley Brook; Irwell / Man. Ship Canal (Kearsley to Irlam Locks); MERSEY; Mersey (Man.Ship Canal, Irlam to Howley Weir); Mersey Mouth; Morecambe Bay & Duddon Sands; River Alt; River Alt DS Bull Bridge; River Alt US Bull Bridge; River Calder; River Darwen; River Derwent; River Douglas; River Kent; River Leven; River Lune; River Mersey (upstream of Manchester Ship Canal); River Ribble; River Ribble DS Stock Beck; River Ribble US Stock Beck; River Weaver (Dane to Frodsham); River Weaver (Marbury Brook to Dane); River Wyre; Simonswood Brook; WYRE	2012	Environment Agency

C.12 Urban and transport

The North West River Basin District is home to over 7 million people. It is a district of contrasts. It contains the key cities of Manchester and Liverpool and many other major towns and settlements.

Current and historical land-use around the major towns and cities in the district gives rise to pollution pressures. Runoff and drainage from urban areas and transport infrastructure can contain a range of contaminants including sewage, metals, sediment and other substances that wash directly into rivers or enter via the sewerage network. Extreme runoff events are likely to become more frequent as climate change continues. The legacy of land contamination in some former industrial areas has led to pollution of groundwater resources and some of our rivers.

Predicted housing growth in and around several towns and cities in the district will also increase pressure on the water environment unless the potential impacts are well managed. The Regional Spatial Strategy for the North West of England sets out plans for growth in the North West River Basin District. This proposes an additional 400,000 homes in the period up to 2021 and associated employment, infrastructure and commercial development. Six 'growth points' have been designated in the Region, with significant numbers of new housing planned, particularly in the areas surrounding Manchester and Liverpool.

Encouraging the sustainable use and management of water resources and a move to more sustainable drainage systems will help reduce the impacts associated with abstraction and urban runoff, with benefits for all water users. Sustainable and integrated drainage systems also offer potential benefits for managing the risk of flooding in urban areas.

Table C12: **Actions for the urban and transport sector**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Sediments (as a direct pollutant); Microbiology; Nutrients; Organic pollutants; Abstraction	Advice planing authorities on the implementation of SUDs and Water Efficiency measures for all new developments following the Code for Sustainable Homes. Explore the issues of	North West RBD	Implemented	Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
and other artificial flow pressures	who owns and maintains the SUDS schemes with regard to legal, financial, health and safety concerns. Policy EM5 requires SUDS and Water Efficiency to highest contemporary standards in all new developments and encourages its retrofitting in existing ones.			
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with Environment Agency Notice (Water Resources Act 1991 (WRA) S86 and S161, Groundwater Regulations, Contaminated Land Regulations). Make use of site specific notices to remove pollution risk to groundwater	North West RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with Environment Agency Notice (WRA S86 and S161, Groundwater Regulations). Make use of site specific notices to remove pollution risk to groundwater	North West RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with new EC Sustainable Use of Pesticides Directive to control use of Plant Protection Products	North West RBD	2012	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Comply with WRA consent conditions	North West RBD	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
(Metals)				
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Comprehensive monitoring to understand the sources and pathways for the pollutants in an urban area in Burnley Local Strategic Partnership, where road runoff is causing pollution. Design, install and test some remediation techniques to see which one can effectively reduce the impact on the river to acceptable levels.	River Calder	Implemented	Local Authorities; Environment Agency
Sediments (as a direct pollutant); Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants; Nutrients; Microbiology	Environment Agency and Highways Agency Memorandum of Understanding (MoU) and associated initiatives	North West RBD	Implemented	Highways Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Follow Pesticides Code of Practice - comply with published advice for operators on control of plant protection products	North West RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Follow the sustainable drainage systems (SUDS) Interim Code of Practice - comply with published advice for operators on sustainable drainage systems	North West RBD	Implemented	Industry leads
Priority Hazardous	General guidance to improve Pesticide	North West RBD	Implemented	Amenity Forum

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Substances, Priority Substances and Specific Pollutants	use through the Amenity Forum			
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants	Groundwater protection advice to Veterinary Medicines Directorate products approvals process	North West RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Highways Agency Programme to investigate soakaways	North West RBD	Implemented	Highways Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Implementation of Network Rail Pesticide protocol	North West RBD	Implemented	Industry leads; Environment Agency
Microbiology; Sediments (as a direct pollutant); Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants; Nutrients	National Fire Service Protocol to minimise the risk of pollution during fire emergencies	North West RBD	Implemented	National Fire Service
Physical modification	Reduce impact from hard bank	North West RBD	2012	Wildlife Trusts;

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	reinforcement. Protect, enhance, restore & retain marginal and in channel habitats, increase habitat morphological diversity. Improve and maintain fish movement. Improve connection to floodplain. Appropriate sediment, vegetation and channel maintenance strategies. Minimise impacts from land drainage activities.			Natural England; Local Authorities; Land managers and owners; Environment Agency
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants (Metals)	Registrations (in conjunction with Standard Rules) - Implement new regulatory approach (via Environmental Permitting Regulations) arising from implementation of new Groundwater Directive (2006/116/EC)	North West RBD	2012	Land managers and owners; Environment Agency; Industry leads; householders
Priority Hazardous Substances, Priority Substances and Specific Pollutants	To address benzo(ghi)perelyene, indeno(123-cd) pyrene, benzo(a)pyrene, identify hot spots for run-off of sediment and other pollutants from highways by 2015.	Mersey (Man.Ship Canal, Irlam to Howley Weir); Rainford Brook; River Alt; River Calder; River Darwen; River Derwent DS Bassenthwaite Lake; River Derwent US Bassenthwaite Lake; River Douglas; River Irwell (Rossendale STW to Radcliffe); River Lune; River Mersey (upstream of Manchester Ship Canal); River Ribble DS Stock Beck; River Ribble US Stock Beck; River Weaver (Source to Marbury Brook); River Wyre; River Wyre DS Grizedale Brook confl	Implemented	Environment Agency
Physical modification	WFD mitigation measures manual for flood and coastal erosion risk	North West RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	management and land drainage activities. This manual will set out best practice options for measures to mitigate against the impacts of such activities upon ecology. This will be used to ensure that new and existing schemes and management activities will take into consideration WFD requirements and will result in minimal ecological damage.			
Investigations				
Urban Diffuse Pollution (under query)	Investigation into Urban Diffuse Pollution at Haverigg, Morecambe and Heysham to establish the extent to which Urban Diffuse Pollution may be contributing to failures of the Bathing Waters Directive.	North West RBD	2011	Environment Agency
Physical modification	Investigations into the ecological outcomes of measures to mitigate against effects of Flood and Coastal Erosion Risk Management (FCERM) activities, improving the understanding of the cost/benefit and technical feasibility of such measures and developing understanding of the underlying processes, ecological responses and applicability. Will use case studies, but outcomes will have a national application.	North West RBD	2010	Environment Agency

C.13 Water industry

United Utilities are the water and sewerage supplier for the majority of the region, supplying 2.9 million homes and over 200,000 businesses. Our rivers support a diverse ecology as well as providing water for use as a commodity and recreation. Protecting our waters and ensuring these uses can continue means that sewage and other effluents need to be treated to very high standards.

Although the water industry is regulated consistently across the country as a whole, the proportion of water available for supply from surface water and groundwater sources varies between companies areas, meaning companies operate in different ways to provide a secure high quality water supply. In the North West River Basin District we are mainly dependent on surface water sources like upland reservoirs and lowland rivers for our drinking water. In order to provide security of water supplies United Utilities has four discrete water resource zones. Two of these zones (the Integrated Resource Zone and West Cumbria Resource Zone) fall within the North West River Basin District. The Integrated Resource Zone serves 95% of the regions population and has a high degree of connectivity allowing movement of water around South Cumbria, Lancashire, Greater Manchester, Merseyside and most of Cheshire.

Levels of urbanisation vary between company areas. Proposed new housing growth in some parts of the river basin district will be challenging in terms of providing water resources and the environmental capacity of rivers to received treated sewage effluent from the new development. New water supply, waste water and sewerage infrastructure will also be required.

Table C13: **Actions for the water industry**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
TOC	Develop detailed 5-year Catchment Action Plan for Safeguard Zone. Targeted action to address diffuse pollution in the catchment	Thirlmere	2010	Water companies; local partnership
MCPA	Address issue as priority action within this England Catchment Sensitive Farming Delivery Initiative (CSF) catchment	River Wyre DS Grizedale Brook confl	2010	Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
TOC	Develop detailed 5-year Catchment Action Plan for Safeguard Zone	Arnfield Reservoir	2010	Environment Agency; Water companies
TOC	Develop detailed 5-year Catchment Action Plan for Safeguard Zone	River Ribble	2010	Environment Agency
Organic pollutants	65 intermittent discharges will be improved, either by providing storage, increasing the Pass Forward Flow (so that more flow is treated at the works), or through transfers under Change Protocol C. Screening and event monitoring will also be provided where required.	Blakewater; Chapel Mere; Dittton Brook; Folly Brook and Salteye Brook.; Hey/Borsdane Brook; Limy Water; Manchester Ship Canal; MERSEY; Mersey; Mill Brook; Moston Brook; Netherley Brook; Rainford Brook; River Beal; River Dane; River Dane; River Darwen; River Douglas; River Irk; River Irwell; River Mersey (upstream of Manchester Ship Canal); River Ribble; River Roch; River Yarrow; Savick Brook; Stanney Mill Brook; Stewards Brook; Whittle Brook; Swill Brook; Bower Brook; Kempnough Brook; Prescott Brook; Longford Brook; Taunton Brook; Hole Brook; Close Brook; Tanyard Brook; Sow Brook	2015	Water Companies
Phosphate	AMP 4 phosphate removal scheme at Kendal WwTW to contribute to restoration to favourable conservation status in the River Kent (Habitats Directive driver).	River Kent	2010	Water companies
Ammonia; Dissolved Oxygen	AMP 5 improvement scheme at Tyldesley WwTW to meet Water Framework Directive ammonia standards	Manchester Ship Canal; River Glaze	2012	Water Companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	and enable Fresh Water Fish Directive Dissolved Oxygen standards to be met in the Manchester Ship Canal.			
Nutrients	AMP4 phosphate reduction scheme at Coniston WwTW (Biodiversity Action Plan (BAP) driver)	Coniston Water; Yewdale/Church Beck	2010	Water companies
Microbiology; Nutrients	AMP4 improvement scheme at Glebe Road CSO.	Windermere	2011	Water companies
BOD; Ammonia	AMP4 improvement scheme at Leigh WwTW to meet Freshwater Fish Directive requirements.	Pennington Brook (Glaze)	2010	Water companies
Ammonia	AMP4 improvement scheme at Northwich WwTW to meet Freshwater Fish Directive requirements.	River Weaver (Barnett Brook to Marbury Brook); River Weaver (Dane to Frodsham); River Weaver (Marbury Brook to Dane); River Weaver (Source to Marbury Brook)	2010	Water companies
Ammonia	AMP4 improvement scheme at Partington WwTW to meet Freshwater Fish Directive requirements.	Sinderland Brook	2010	Water companies
Ammonia	AMP4 improvement scheme at Royton WwTW to meet Freshwater Fish Directive requirements.	River Irk (Moston Brook to River Irwell); River Irk (Source to Whit Brook); River Irk (Whit Brook to Wince Brook); River Irk (Wince Brook to Moston Brook)	2010	Water companies
Nutrients; Organic pollutants	AMP4 improvement schemes at Esthwaite Lodge Pumping Station, Fold Gate Pumping Station and Hawkshead Pumping Station (BAP driver)	Esthwaite Water	2012	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Nutrients	AMP4 phosphate reduction scheme at Hawkshead WwTW (BAP driver)	Black Beck	2015	Water companies
Nutrients; Sediments (as a direct pollutant)	AMP4/ AMP5 and Change Protocol B improvement schemes in the Derwent catchment: i) Additional phosphate removal at Keswick WwTW. ii) Increase in Pass Forward Flow at Greta Grove Pumping Station and increase in Flow to Full treatment at Keswick WwTW iv) phosphate removal at Rowrah WwTW. These improvements will contribute to favourable condition for phosphate in two Special Areas of Conservation, Bassenthwaite Lake and the River Marron.	Bassenthwaite Lake; River Derwent; River Greta; River Marron	2012	Water Companies
BOD	AMP5 improvement scheme at Longton WwTW in the Douglas catchment to meet Water Framework Directive BOD standards.	Tarra Carr Gutter; Hall Carr Brook	2012	Water companies
BOD; Ammonia; Dissolved Oxygen	AMP5 improvement scheme at Oldham WwTW in the Irwell catchment to meet Water Framework Directive ammonia and BOD standards and the Fresh Water Fish Directive Dissolved Oxygen standards in the Manchester Ship Canal.	Manchester Ship Canal; River Irk; Wince Brook	2012	Water Companies
Microbiology	AMP5 improvement scheme to provide ultraviolet disinfection at Croston WwTW, and to improve the discharge from Croston WwTW Storm Tank, to improve compliance with shellfish water guideline	River Douglas; River Yarrow; River Ribble Estuary; Liverpool Bay	2013	Water Companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	standards.			
Ammonia	AMP5 improvement schemes in the Alt and Crossens catchment at Formby WwTW to meet Water Framework Directive ammonia standards.	River Alt; Simonswood Brook	2012	Water companies
Microbiology	AMP5 improvement schemes at Anchorsholme Pumping Station and Manchester Square Pumping Station in the Ribble catchment to deliver benefits against Bathing Water requirements.	Ribble Estuary; Liverpool Bay	2015	Water companies
Phosphate	AMP5 improvement schemes at five locations in the Upper Mersey Catchment, Dukinfield WwTW, Saddleworth WwTW, Ashton-under-Lyne WwTW, Hyde WwTW and Mossley WwTW as a result of the 2007 inland sensitive areas (eutrophic) designations.	River Tame	2014	Water Companies
Ammonia; Dissolved Oxygen	AMP5 improvement schemes at three locations in the Upper Mersey catchment, Stockport WwTW, Altrincham WwTW and Davyhulme WwTW to meet Water Framework Directive ammonia standards and enable Freshwater Fish Directive Dissolve Oxygen standards to be achieved in the Manchester Ship Canal.	Manchester Ship Canal; River Goyt (Etherow to Mersey); Sinderland Brook	2012	Water Companies
Ammonia; Priority Hazardous Substances, Priority Substances and Specific Pollutants;	AMP5 improvement schemes in the Mersey Estuary catchment at Widnes and Warrington WwTWs to remove more ammonia than required by the Urban Waste Water Treatment Directive and at	River Glaze; Westleigh Brook; River Mersey Estuary	2015	Water Companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Phosphate	Leigh WwTW, Glazebury WwTW, Westhoughton WwTW, Worsley WwTW and Tyldesley WwTW as a result of the 2007 inland sensitive areas (eutrophic) designations. AMP5 improvement scheme to re-locate the discharge from Sandon Dock (Liverpool) WwTW.			
Microbiology	AMP5/ Change Protocol B and C improvement schemes in the Ribble catchment to deliver benefits against Shellfish Water and Bathing Water requirements: i) Ultraviolet disinfection at Blackburn WwTW. ii) Ultraviolet disinfection at Walton le Dale WwTW, and improvement of Walton le Dale WwTW Storm Tanks. iii) Improvements at 12 intermittent discharges (Albyn Street East CSO, 176 Ribbleton Lane CSO, Cow Hill CSO, Powis Road CSO, Wolseley Road CSO, Riversway CSO, Lamaleach Pumping Station, Valley Road Pumping Station, Cop Lane CSO, 207 Watling Street CSO, Dow Bridge CSO and Station Road CSO).	River Darwen; River Ribble; Savick Brook; River Ribble Estuary ; Liverpool Bay ; Fylde Coast ; Dow Brook ; Hole Brook	2013	Water Companies
Microbiology; Nutrients; Sediments (as a direct pollutant)	AMP5/ Change Protocol A improvement schemes in the South West Lakes catchment: i) Millom WwTW Storm Tanks and Millom WwTW Inlet Overflow (King Street Pumping Station) as a result of predicted "Poor" Bathing Water quality Bathing Waters Directive.	Morecambe Bay & Duddon Estuary; Walney Channel	2015	Water Companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	ii) Re-location of the outfall at Barrow WwTW to enable eel grass re-establishment and to prevent physical damage caused by discharge flows / outfall structure.			
Microbiology	AMP5/ Change Protocol C improvement scheme at Maryport CSO in the Derwent catchment to improve compliance with Bathing Water and Shellfish Water standards.	Allonby Bay	2012	Water companies
Microbiology	AMP5/ Change Protocol C improvement schemes at Morecambe Road Combined Sewer Overflow (CSO) and Cart Lane Pumping Station in the Kent/ Leven catchment to improve compliance at predicted "at risk sufficient" Bathing Waters and Morecambe Bay East Shellfish Water.	Morecambe Bay & Duddon Estuary; River Kent	2012	Water Companies
Microbiology; Nutrients	'AMP5/ Change Protocol C - 11 improvement schemes in the Lune catchment: i) Habitats Directive scheme at Lancaster WwTW to remove more phosphorus than required by the Urban Waste Water Treatment Directive. ii) Improvements to intermittent discharges at Scale Hall Pumping Station, Willow Lane Pumping Station, Damside CSO, Cable Street CSO, Wood Street CSO, Rosemary Lane CSO, Bulk Road CSO, Owen Road CSO and Ramparts CSO) to improve compliance	Lower lune estuary trib; Morecambe Bay & Duddon Sands; River Lune	2015	Water Companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	at Bathing Waters and the Shellfish Waters at Lune (Plover Scar), Lune (Broadfleet) and Morecambe Bay East iii) Improvements at St Nicholas Lane Pumping Station to improve compliance at predicted "at risk sufficient" Bathing Waters and Morecambe Bay East Shellfish Water.			
Microbiology	AMP5/ Change Protocol C improvements to water company assets in the Wyre catchment to deliver benefits against Shellfish Water and Bathing Water requirements: i) Improvement to final discharge from Garstang WwTW and increased storm tank capacity at Garstang WwTW. ii) Improvements at 4 CSOs (Carr Head Lane CSO, Holt Lane CSO, Beech Drive CSO and Poulton PS).	Morecambe Bay & Duddon Estuary	2012	Water Companies
Nutrients; Organic pollutants; Sediments (as a direct pollutant)	Applications of catchment management actions to Water Company owned land in northern and central Land Management Areas under the Sustainable Catchment Management Programme 2 (Sustainable Catchment Management Plan (SCaMP)).	North West RBD	2015	Water companies
Saline intrusion	Catchment Abstraction Management Strategy (CAMS) – Implement abstraction licencing controls to minimise and manage risks from saline intrusion	North West RBD	Implemented	Water companies; Environment Agency
Abstraction and other artificial flow	Channel restoration related to flow regulation pressure: Ben Gill, Ennerdale	Ennerdale Water; St John's Beck;	2015	Environment Agency;

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
pressures	Water and Thirlmere	Thirlmere		Water companies
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants (Metals)	Comply with discharge consent conditions	North West RBD	Implemented	Water companies
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with Environment Agency Notice (Water Resources Act 1991 (WRA) S86 and S161, Groundwater Regulations, Contaminated Land Regulations). Make use of site specific notices to remove pollution risk to groundwater	North West RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with Local Authority Contaminated Land Regulations Notices. Make use of site specific notices to remove pollution risk to groundwater	North West RBD	Implemented	Local Authorities
Abstraction and other artificial flow pressures; Direct biological pressures; Nutrients; Physical modification; Sediments (as a direct pollutant)	Contribute to favourable condition on Over Water Site of Special Scientific Interest (SSSI), Siddick Pond SSSI, Blelham Tarn & Bog SSSI, Esthwaite Water SSSI, Little Langdale Tarn SSSI, Brantrake Moss & Devoke Water SSSI, Tatton Meres SSSI, Rostherne Mere SSSI, The Mere, Mere SSSI, Bar Mere SSSI, Chapel Mere SSSI, Comber Mere	Derwent (NW) Catchment; Irwell Catchment; Kent/Leven Catchment; South West Lakes Catchment; Upper Mersey Catchment; Weaver/Gowy Catchment	2012	Water Companies; Environment Agency; Cheshire Wildlife Trust; Tameside Metropolitan Borough Council; Natural England; Allerdale District Council; Cheshire

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	SSSI, Hatch Mere SSSI, Norbury Meres SSSI, Oss Mere SSSI, Pettypool Brook Valley SSSI, Quoisley Meres SSSI, Tabley Mere SSSI, Siddick Pond SSSI, Claife Tarns and Mires SSSI, Elterwater SSSI, Bar Mere SSSI, Black Firs & Cranberry Bog SSSI, Betley Mere SSSI and Hollinwood Branch Canal SSSI by developing pollution action plan			County Council
Physical modification; Abstraction and other artificial flow pressures; Direct biological pressures	Contribute to favourable condition on Silloth Dunes and Mawbray Bank SSSI, Hollinwood Branch Canal SSSI and Sound Heath SSSI by undertaking specific management works	Derwent (NW) Catchment; Irwell Catchment; Weaver/Gowy Catchment	2010	Allerdale District Council; Tameside Metropolitan Borough Council; Crewe And Nantwich Borough Council
Nutrients	Contribute to favourable condition on Over Water SSSI and Betley Mere SSSI by implementing AMP schemes that improve the quality of discharge in the water bodies.	Derwent (NW) Catchment; Weaver/Gowy Catchment	2015	Water companies
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Control of minewater intrusion by reducing groundwater abstraction	North West RBD	Implemented	Environment Agency; Water companies
Abstraction and other artificial flow pressures	Coordinated education and awareness on water efficiency and re-use to promote value of water	North West RBD	Implemented	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Phosphate	Eight AMP5 improvement schemes in the Weaver/ Gowy catchment at Congleton WwTW, Holmes Chapel WwTW, Biddulph WwTW, Middlewich WwTW, Alsager WwTW, Kidsgrove WwTW and Sandbach WwTW as a result of the 2007 inland sensitive areas (eutrophic) designations. Scheme to either relocate the outlet from Betley Village WwTW or provision of a reed bed	Betley Mere; Biddulph Brook; Kidsgrove Stream (including Day Green Stream); River Croco; River Dane ; River Wheelock (Source to Kidsgrove Stream)	2015	Water Companies
Abstraction	Extension of abstraction control to include previously exempt uses (abstractions by Ports and Harbour authorities from tidal waters under certain conditions likely to remain exempt)	North West RBD	2012	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants	General guidance to improve Pesticide use through the Amenity Forum	North West RBD	Implemented	Amenity Forum
Abstraction and other artificial flow pressures	Implement a solution to the low flow issue at Brennand and Whitendale using our powers under Section 52 of the Water Resources Act 1991 - as amended by the Water Act 2003.	River Brennand; Whitendale river	2012	Environment Agency
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Implement Groundwater Protection: Policy & Practice - External education on GW pollution prevention	North West RBD	Implemented	Environment Agency; Land managers and owners

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
(Metals)				
Abstraction and other artificial flow pressures	Implement West Cumbria Water efficiency project	Derwent (NW) Catchment; South West Lakes Catchment	2010	Water companies
Nitrate	Implementation of site specific notices to remove nitrate pollution risk to groundwater. (WRA S86 and S161, Groundwater Regulations, Contaminated Land Regulations)	North West RBD	Implemented	Local Authorities
Microbiology	Outstanding AMP3 improvement scheme at Barrow WwTW inlet CSO and storm tanks.	Walney Channel	2012	Water companies
Microbiology; Nutrients	Outstanding AMP3 improvement scheme at Elterwater PS.	Great Langdale Beck	2011	Water companies
Aesthetics; Organic pollutants	Outstanding AMP3 improvement schemes at Bewsey PS and Longford Barrage CSO.	Sankey Brook ; Longford Brook	2010	Water companies
Organic pollutants	Outstanding AMP3 improvement schemes for Ashton-under-Lyne WwTW Final Effluent, Inlet CSO and Storm Tanks.	River Tame (Chew Brook to Mersey); River Tame (Diggle Brook to Chew Brook); River Tame (Source to Diggle Brook)	2010	Water companies
Abstraction and other artificial flow pressures	Promote water efficiency through the provision of household water audits, cistern displacement devices and supply pipe repair and replacement	North West RBD	Implemented	Water companies
Nitrate	Provision of agreed first time rural sewerage schemes	North West RBD	Implemented	Water companies
Abstraction and	Reduction of demand through promotion	North West RBD	Implemented	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
other artificial flow pressures	of free household meters			
Abstraction and other artificial flow pressures	Reduction of leakage through active leakage control and customer supply pipe repair policies	North West RBD	Implemented	Water companies
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants (Metals)	Re-engineer existing discharges to avoid direct discharges of pollutants to groundwater	North West RBD	Implemented	Water companies; Environment Agency
Aesthetics	Screening will be provided to reduce aesthetic impact of 20 discharges under Change Protocol C. Event monitoring will also be installed where required.	Limy Water; Manchester Ship Canal; River Douglas; River Irk (Moston Brook to River Irwell); River Irk (Source to Whit Brook); River Irk (Whit Brook to Wince Brook); River Irk (Wince Brook to Moston Brook); River Irwell (Cowpe Brook to Limy Water); River Irwell (Limy Water to Rossendale STW); River Irwell (Roch to Croal); River Irwell (Rossendale STW to Radcliffe); River Irwell (Source to Whitewell Brook); River Ribble; Smithy Brook; Walmersley Brook; Corn Brook; Queens Park Culvert	2015	Water companies
Aesthetics	Screening will be provided to reduce the aesthetic impact of 40 discharges under	MERSEY; Moston Brook; River Hyndburn; River Irwell; River Mersey (upstream of Manchester	2015	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	Change Protocol A.	Ship Canal); River Tame; Sankey Brook (Black Bk to Mersey); Sankey Brook (Rainford Bk to Black Bk); Smithy Brook; Croft Bank; Bent Lane Brook; Longford Brook; Jenny Brook; Swineshaw Brook		
Aesthetics	Screening will be provided to reduce the aesthetic impact of 28 discharges under Change Protocol B. Event monitoring will also be installed where required.	Derwent (NW) Catchment; Weaver/Gowy Catchment	2015	Water companies
Nitrate	Sludge Regulations - comply with published advice to operators	North West RBD	Implemented	Environment Agency; Water companies
Nitrate	Monitoring and reporting of Sewage Regulations	North West RBD	Implemented	Water companies; Environment Agency
Organic pollutants	Storage will be provided to reduce spills from 19 intermittent discharges under Change Protocol B. Screening / event monitoring will also be provided where required.	Blakewater; Leeds & Liverpool Canal; Moss Brook; Pool Stream; River Darwen; River Ribble; Moor Brook Culvert; Crookilley Brook; Clancutt Brook; Queens Park Culvert	2015	Water companies
Organic pollutants	Storage will be provided to reduce spills from 2 discharges under Change Protocol A.	River Beal; River Irwell (Cowpe Brook to Limy Water); River Irwell (Limy Water to Rossendale STW); River Irwell (Roch to Croal); River Irwell (Rossendale STW to Radcliffe); River Irwell (Source to Whitewell Brook)	2012	Water companies
Colour	Water industry scheme to address diffuse	River Etherow; River Sett	2010	Environment Agency; Defra; Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	pollution in the catchment.			companies; Land managers and owners
Investigations				
Chlorophyll a	Further monitoring to confirm risk of failure of WFD Article 7	River Ribble	2010	Environment Agency; Water companies
Phosphate	Further monitoring to confirm risk of failure of WFD Article 7	River Ribble	2010	Environment Agency; Water companies
Turbidity	Further monitoring to confirm risk of failure of WFD Article 7	Lower Naden Reservoir; Middle Naden Reservoir; Upper Naden Reservoir	2010	Environment Agency; Water companies
2,4-D	Further monitoring to confirm risk of failure of WFD Article 7	Clough Bottom Reservoir	2010	Environment Agency; Water companies
Colour	Further monitoring to confirm risk of failure of WFD Article 7	Cowpe Reservoir; Delph Reservoir; Ashworth Moor Reservoir; Anglezarke Reservoir; Turton and Entwistle Reservoir; Greenfield Reservoir; Torside Reservoir; High Bullough Reservoir; Rivington Reservoirs; Kinder Reservoir; Walkerwood Reservoir; Wayoh Reservoir; Clough Bottom Reservoir; Arnfield Reservoir; Readycon Dean Reservoir; Rooden Reservoir; Piethorne Reservoir; Ogden Reservoir; Mitchells House Reservoirs; Brushes Reservoir; Middle Naden Reservoir; Upper Naden Reservoir; Lower Naden	2010	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
		Reservoir; Calf Hey Reservoir; Rhodeswood Reservoir; Yeoman Hey Reservoir; Greenbooth Reservoir; Clowbridge Reservoir; Thirlmere; Lamaload Reservoir; Dovestone Reservoir; Springs Reservoir; Dowry Reservoir; New Years Bridge Reservoir; Blackstone Edge Reservoir		
2-methyl iso borneol	Further monitoring to confirm risk of failure of WFD Article 7	Duddel Brook; Alston Reservoirs; Poaka Beck Reservoir; River Ribble; Langthwaite Reservoir; Watergrove Reservoir; Pennington Reservoir	2010	Environment Agency; Water companies
Geosmin	Further monitoring to confirm risk of failure of WFD Article 7	Pennington Reservoir; Poaka Beck Reservoir; Langthwaite Reservoir; River Ribble; Duddel Brook; Alston Reservoirs; Watergrove Reservoir	2010	Environment Agency; Water companies
MCPA	Further monitoring to confirm risk of failure of WFD Article 7	Wayoh Reservoir	2010	Environment Agency; Water companies
Colour	Further monitoring/investigation to confirm reasons for failure of WFD Article 7. Water industry scheme to address diffuse pollution in the catchment	River Sett; River Etherow	2010	Environment Agency; Water companies
Microbiology	An investigation of Faecal Indicator Organism inputs to the Solway Firth and construction of a model, to establish reasons for predicted "poor" bathing water quality at Allonby and Allonby	Allonby Bay	2012	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	South Bathing waters, as well as Bathing waters (BW) / Shellfish waters (SFW) in Solway Tweed River Basin District.			
Organic pollutants	Investigation and, where appropriate remedial action, into 76 contaminated surface waters in the North West River Basin District	North West RBD	2014	Water companies
Abstraction and other artificial flow pressures	Investigation at local nature conservation site perceived to be adversely affected by abstraction : Upper and Middle Wyre	Tarnbrook Wyre	2012	Environment Agency; Water companies
Nitrate; Hazardous substances and non-hazardous pollutants; Phosphate; Priority Substances and Specific Pollutants (Metals)	Investigation of Groundwater Dependent Terrestrial Ecosystems (GWDTEs) to assess if they have been significantly damaged as a result of groundwater pollution	North West RBD	Implemented	Environment Agency
Organic pollutants	Investigation of intermittent discharges to the River Calder using Integrated Catchment Modelling.	River Calder	2012	Water companies
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Investigation of priority hazardous substances, priority substances and specific pollutants at Fazakerley Waste Water Treatment Works (WwTW), Skelmersdale WwTW, Wigan WwTW, Horwich WwTW, Oldham WwTW, Warrington North WwTW, Westhoughton WwTW, Worsley WwTW, Blackburn WwTW, Ashton-under-Lyne WwTW and	Astley Brook; Kidsgrove Stream (including Day Green Stream); River Alt; River Darwen; River Douglas; River Glaze; River Tame; Westleigh Brook; Wince Brook; Mersey Estuary Catchment; Pearl Brook; Hole Brook	2011	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	Kidsgrove WwTW. At Blackburn and Fazakerley WwTWs, investigations include Tributyltin (TBT), and if additional treatment for TBT is found to be required, this will be completed in AMP5.			
Organic pollutants	Investigation of the intermittent discharges to the Mersey, Fallowfield Brook and Micker Brook including Integrated Catchment Modelling.	Fallowfield Brook; Micker Brook; River Goyt (Etherow to Mersey)	2012	Water companies
Organic pollutants	Investigation of the intermittent discharges to the River Douglas using Integrated Catchment Modelling.	River Douglas	2012	Water companies
Organic pollutants	Investigation of the intermittent discharges to the River Irk and Irwell using Integrated Catchment Modelling.	River Irk (Moston Brook to River Irwell); River Irk (Source to Whit Brook); River Irk (Whit Brook to Wince Brook); River Irk (Wince Brook to Moston Brook); River Irwell (Cowpe Brook to Limy Water); River Irwell (Limy Water to Rossendale STW); River Irwell (Roch to Croal); River Irwell (Rossendale STW to Radcliffe); River Irwell (Source to Whitewell Brook)	2012	Water companies
Pressures on groundwater (GW) balance; Abstraction	Investigation to improve confidence in GW quantitative status result	South Cheshire and North Staffordshire Permo-Triassic Sandstone Aquifers	2012	Environment Agency
Dissolved Oxygen	Measures arising from the Manchester Ship Canal Investigation to address Freshwater Fish Directive compliance	Manchester Ship Canal	2014	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	issues. Schemes may include aeration of the canal.			
Nitrate	Monitoring and investigation into the effects of nitrate on Groundwater abstraction	Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers	2012	Environment Agency; Water companies
Abstraction and other artificial flow pressures	Programme of investigation of ecological impacts of managed flows in HMWBs with Water supply use	North West RBD	2012	Water companies; Environment Agency
Microbiology	Source apportionment study of inputs to the Mersey Estuary and North Wirral coast detailed in the North Wirral (East) and North Wirral (West) Shellfish Water Pollution Reduction Plans.	Mersey Estuary Catchment; Liverpool Bay (under query)	2012	Water companies
Nutrients	Water Company assets at two locations in the South West Lakes catchment will be investigated to determine what improvements are required : i) A feasibility study to identify the options to reduce the phosphate load to Lake Windermere from all water company sources including outfall relocation. Improvement scheme(s) to proceed in AMP5. ii) A feasibility study into the options to remove enriched sediments in Elterwater. Improvement scheme(s) to proceed in AMP5.	Elter Water or Elterwater; Windermere	2012	Water companies
Natura 2000 protected areas and SSSIs				
Nutrients; Abstraction and	Contribute to maintenance of, or restoration to, favourable conservation	North West RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
other artificial flow pressures	status on Natura 2000 Protected Areas by revoking or amending abstraction licences (See Annex D)			
Physical modification; Nutrients; Sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by revoking or amending Discharge/Pollution Prevention and Control (PPC) Consents (See Annex D)	North West RBD	2012	Environment Agency
Abstraction and other artificial flow pressures; Nutrients	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Implementing AMP Schemes (See Annex D)	North West RBD	2012	Water companies
Physical modification; Abstraction and other artificial flow pressures; Nutrients	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Specific Management Works to address hydrology, morphology and invasive species pressures (See Annex D)	North West RBD	2012	Land managers and owners; Environmental NGOs; Natural England; Water companies
Physical modification; Nutrients; Direct biological pressures; Abstraction and other artificial flow pressures	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through SSSI Management Agreement (See Annex D)	North West RBD	2012	Environmental NGOs; Natural England
Abstraction and other artificial flow	Modification of Abstraction licence to ensure no adverse effect on integrity of	River Derwent, Ennerdale Water, Dash Beck, Dubbs Reservoir,	2015	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
pressures	Natura 2000 site: Workington, Ben Gill, Derwent and Bassenthwaite Lake Special Area of Conservation (SAC), Dubbs and Borrans Reservoirs (River Kent SAC), Ennerdale and Thirlmere	River Gowan, Ennerdale Water, St John's Beck, Thirlmere		