

Water for life and livelihoods

River Basin Management Plan Severn River Basin District

Annex C: Actions to deliver objectives

Contents

Annex C: Actions to deliver objectives	1
C.1 Introduction	2
C. 2 Actions we can all take	8
C.3 All sectors	10
C.4 Agriculture and rural land management	13
C.5 Angling and conservation	45
C.6 Central government	61
C.7 Environment Agency	74
C.8 Industry, manufacturing and other business	109
C.9 Local and regional government	117
C.10 Mining and quarrying	124
C.11 Navigation	129
C.12 Urban and transport	136
C.13 Water industry	142

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 Severn 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

Tables of actions

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

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	
<i>The pressure being managed</i>	<i>The action that will be taken</i>	<i>The location or geographical extent of the action</i>	<i>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)</i>	<i>The organisation responsible for delivering the action and other organisations that may be involved</i>
Investigations				
<i>Sets out investigations measures that will be put in place</i>				
Natura 2000 protected areas and SSSIs				
<i>Sets out measures that will be put in place for Natura 2000 protected areas and Sites of Special Scientific Interest</i>				

For some actions further discussion is required with the organisation responsible to finalise details. These actions are identified in the tables by use of a solid square symbol "■". In Wales, these actions will be subject to further analysis and discussion through the process established to implement Outcome 21 (see Annex D).

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 1c: **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 and the Countryside Council for Wales were consulted on the assessment and we have had regard to 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 effect 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 effect 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**

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.

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 low 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	Reduction of demand through specification of water efficient fittings in new and refurbished homes under Building Regulations	Severn RBD	2010	Department for Communities and Local Government
Abstraction and other artificial flow pressures	Extension of abstraction control to include previously exempt areas	Severn Uplands - Secondary Combined; Severn Vale - Secondary Combined ; Shropshire Middle Severn - Secondary Combined; Teme - Secondary Combined	2012	Environment Agency
Acidification; Direct biological pressures; Microbiology; Nutrients; Organic pollutants; Physical modification; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Where appropriate, subject to the Environment Agency making an appropriate case to the Secretary of State and/or Welsh Minister and carrying out a 12 week public consultation, 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 further designation of	Severn RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	WPZs by 2012			
Organic pollutants; Nutrients; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Microbiology; 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 drainage systems (SUDs) and use of Water Resource Act Planning Guidance)	Severn RBD	Implemented	Local Authorities
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)	Severn RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
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 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	Severn RBD	Implemented	Environment Agency
Investigations				
Physical modification	Monitoring and investigation into mitigation measures techniques to establish the effectiveness of these measures and improve understanding of hydro-morph-ecological interactions. Outcomes will have a national application	Severn RBD	2011	Environment Agency
Natura 2000 and SSSI plans & programmes				
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through other competent authority functions (see Annex D)	Severn RBD	2012	British Waterways, Countryside Council for Wales, Environment Agency, Forestry Commission Wales, Local Authorities

C.4 Agriculture and rural land management

Over three quarters of the land in the Severn river basin district is managed for agriculture or forestry. In the western part of the district, the mountains and hills of mid Wales and the Welsh Borders are home to extensive beef and sheep production. Large conifer plantations are also a feature. Further south and east along the River Severn are some of the largest dairy farms in the country as well as arable farming. The Vale of Evesham in Worcestershire is home to specialised horticultural production. Land use in the upper Avon and Axe catchments is mainly agricultural with arable farming. In the lower catchment much of the pasture land has been improved for dairy and beef production and the steeper valleys used for sheep grazing.

The sector has the potential to impact on the water environment as an abstractor of water for irrigation and as a source of pollution. Although direct pollution incidents from agriculture have fallen in recent years, the industry remains a contributor to diffuse pollution of rivers and groundwater from sediment, manures, fertilisers and pesticides. This pollution can have ecological impacts as well as affecting the quality of water abstracted for public water supply, leading to expensive and unsustainable water treatment. Runoff problems are likely to be exacerbated by predicted climate change. Coniferous forests also contribute to the acidification of rivers in the upper catchment.

Resolving these problems will have clear benefits to the ecology of waters and to water users. There will also be a range of significant additional benefits: to farmers from improved soil management, to water customers through a reduction in the costs and impacts arising from treating drinking water and to householders in areas vulnerable to surface water flooding.

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	
2,4-D	Address issue as priority action within this VI Pilot Catchment. Water industry catchment investigation to establish source of pollutant	River Leam - conf R Itchen to conf R Avon	2010	Pesticides Voluntary Initiative
Abstraction	Availability of grants for construction of irrigation and	Severn RBD	Implemented	Regional Development

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	industrial supply reservoirs			Agencies; Welsh Assembly Government
Abstraction	Encourage farmers and Industry to build storage reservoirs to support or replace summer irrigation	Severn RBD	Implemented	Industry; Environment Agency
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)	Severn RBD	2012	Environment Agency; Water companies
Abstraction	Provide guidance and training in irrigation best practice including auditing, benchmarking and scheduling	Severn RBD	Implemented	Environment Agency; UK Irrigation Association
Abstraction	Reduce abstraction pressure by promoting local agreements by farmers and other land managers to share stored water for summer irrigation e.g. from winter storage reservoirs	Severn RBD	2012	Land managers and owners; Farmers
Abstraction	Reduction in demand by promoting water abstractor groups	Severn RBD	2012	Environment Agency
Abstraction	Water efficiency campaigns	Severn RBD	Implemented	Regional Stakeholder organisations
Abstraction and other artificial flow pressures	Registration for previously exempt activity: abstraction of water within water meadow systems	Severn RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Acidification	Reduce local impacts of acidification by continuing long term programme of lime dosing and investigations on the rivers Twrch, Banwy, Trannon, Clywedog, Gam	Severn Uplands Catchment	Implemented	Environment Agency
Acidification; Direct biological pressures; Microbiology; Nutrients; Organic pollutants; Physical modification; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Where appropriate, subject to the Environment Agency making an appropriate case to the Secretary of State and/or Welsh Minister and carrying out a 12 week public consultation, 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 including a pilot in the River Lugg. Potential for further designation of WPZs by 2012	Severn RBD	2012	Environment Agency
Acidification; Habitat manipulation (restoration/improvement); Physical modification	EU Life+ project (ISAC) to reduce the pressures from acidification through removal of trees and catchment liming. Wetland restoration and habitat improvements to support SAC species including salmon, freshwater pearl mussels and native white-clawed crayfish	R Irfon - source to conf Afon Gwesyn; R Irfon - conf Afon Gwesyn to conf Cledan; R Irfon - conf Tirabad Dulas to conf R Wye; R Irfon - conf Cledan to conf Tirabad Dulas	2010	Wye and Usk Foundation; Environment Agency Wales; Countryside Council for Wales; Forestry Commission Wales

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Acidification; Sediments (as a direct pollutant)	Influencing and education campaign working with Forest Enterprise, including harvesting techniques, replanting plans and buffer strips to reduce the impact of forestry on water quality River Severn (Hafren Forest). Riparian management of approx 60km of forest streams and river banks	Severn Uplands Catchment	Implemented	Environment Agency; Forestry Commission Wales
Ammonia	Address issue as priority action within this CSF catchment	R Axe-Stubbingham Rhyne to conf Brean Cross Sluice; Barrow Reservoir; Blagdon Lake	2010	Natural England
Ammonia; Cryptosporidium; Phosphate	Address issue as priority action within this England Catchment Sensitive Farming Initiative catchment	Barrow Reservoir; Cheddar Reservoir; R Axe-Stubbingham Rhyne to conf Brean Cross Sluice; Blagdon Lake; Chew Valley lake	2010	Natural England; Countryside Council for Wales
Bentazone; Iprodione; Clopyralid; Chlortoluron; Carbendazim; Fluroxypyr; 2,4-D; Metazachlor	Address issue as priority action within this VI Pilot Catchment	River Leam - conf R Itchen to conf R Avon	2010	Pesticides Voluntary Initiative
Captan; Chlortoluron; Linuron; MCPB; Metazachlor	Re-direct existing CSF resource to address issue	Draycote Water	2010	Natural England
Chemicals - sheep dip	Reduce the impact from sheep dip by education and liaison with farmers at local level to encourage best practice in use of sheep dip	Severn Uplands Catchment; Usk Catchment; Wye Catchment	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	and other pesticides			
Colour	Water industry scheme to address diffuse pollution in the catchment	Afon Cedig - source to Lake Vyrnwy; Afon Cownwy - source to conf Afon Vyrnwy; Afon Hirddu - source to Lake Vyrnwy; Afon Nadroedd - source to Lake Vyrnwy; Eunant - source to Lake Vyrnwy (Pont Eunant); R Vrynwy - Lake Vrynwy to conf Afon Cownwy; Severn Uplands Catchment	2010	Land managers and owners; Water companies
Cryptosporidium	Address issue as priority action within this CSF catchment	Chew Valley lake; R Axe-Stubbingham Rhyne to conf Brean Cross Sluice; Barrow Reservoir; Chew Valley lake; Blagdon Lake; Cheddar Reservoir	2010	Natural England
Cypermethrin	UK-wide suspension (temporary) on use as sheep-dip	Severn RBD	Implemented	Veterinary Medicines Directorate
Direct biological pressures; Physical modification	Deliver the Sustainable Fisheries Programme Coarse Habitat Project in Wales	Severn RBD	2010	Environment Agency Wales
Direct biological pressures; Physical modification	Deliver the Sustainable Fisheries Programme for migratory salmonid habitat restoration in Wales	Severn RBD	2010	Environment Agency Wales
Direct biological pressures; Physical modification	Deliver the Sustainable Fisheries Programme Trout Habitat Project in	Severn RBD	2010	Environment Agency Wales

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	Wales			
Direct biological pressures; Physical modification	Deliver the Wild Fishing Wales Project	Severn RBD	2010	Environment Agency Wales; Rivers Trusts; Countryside Council for Wales; Angling Associations; Land managers and owners
Faecal indicator organisms; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Nitrate; Organic pollutants; Phosphate	Reduce diffuse pollution by ensuring effective implementation of codes of good agricultural practice	Severn RBD	Implemented	Industry leads; Rural Payments Agency
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Agri-environment schemes/ Environmental Stewardship - payments for best practice to limit nitrate input and control agric-chemicals (England only)	Severn RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Development planning - influence location of development to protect groundwater	Severn RBD	Implemented	Environment Agency; Water companies
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	In England, implement DCLG Planning Policy Guidance Statement 23 (PPS23) on controlling pollution of groundwater that may arise from development of land	Severn RBD	Implemented	Local Authorities

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	Proactive targetted farmer education on control of agri-chemicals and nitrate	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Provide development planning standing advice in England	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Re-engineer existing discharges to avoid direct discharges of pollutants to groundwater	Severn RBD	Implemented	Environment Agency; Water companies
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Comply with Environment Agency Notice (WRA S86 and S161, Groundwater Regulations). Make use of site specific notices to remove pollution risk to groundwater	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Comply with Environment Agency Notice (WRA S86 and S161, Groundwater Regulations, SSAFO) Make use of site specific notices to remove agri-chemical risks to groundwater	Severn RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Comply with new EC Sustainable Use of Pesticides Directive to control use of Plant Protection Products	Severn RBD	2012	Land managers and owners

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	Enforcement of Groundwater Regulations to control agri-chemicals through Cross Compliance	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Environmental Permitting – disposal of sheep dip and pesticides	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Environmental Permitting – effluent discharges to ground	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	EU review of approvals for Plant Protection Products	Severn RBD	Implemented	EU
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow Pesticides Statutory Code of Practice - comply with published advice for operators	Severn RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow Sheep Dip Statutory Code of Practice - comply with published advice for operators	Severn RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow The Code of Good Agricultural Practice - comply with published advice for operators on control of agri-chemicals	Severn RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Groundwater protection advice to Chemicals Regulation Directorate (formerly the Pesticides Safety Directorate) approvals process	Severn RBD	Implemented	Environment Agency; Central Government

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	Groundwater protection advice to Veterinary Medicines Directorate products approvals process	Severn RBD	Implemented	Central Government
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Implement pesticides statutory Code of Practice. Comply with published advice for operators on control of plant protection products	Severn RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Local agricultural partnerships e.g. LEAF, NGOs such as Rivers Trusts, Landcare, Farming & Wildlife Advisory Group – advice on use of agri-chemicals	Severn RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	New EC Sustainable Use of Pesticides Directive to control use of Plant Protection Products	Severn RBD	2012	Central Government
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Permitting – disposal of sheep dip and pesticides	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Support to Chemicals Regulation Directorate (formerly the Pesticides Safety Directorate) research into amenity use of pesticides	Severn RBD	Implemented	Central Government
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Voluntary Initiative Educational and advice programme to reduce agricultural chemical use	Severn RBD	Implemented	Land managers and owners
Isoproturon	Recently introduced UK-wide restrictions will see decreasing trend in emissions and probable compliance by 2015 with no further	Severn RBD	Implemented	Chemicals Regulation Directorate

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	action			
MCPB; Captan; Metazachlor; Linuron; Chlortoluron; Pesticides (total)	Re-direct existing England Catchment Sensitive Farming Initiative resource to address issue	Draycote Water	2010	Natural England
Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone. Proactive implementation of Metaldehyde Steering Group 'Get Pelletwise' measures. Water industry scheme to address diffuse pollution in the catchment	R Frome - Slad Bk to R Severn; R Teme - conf R Onny to conf R Severn; Trimpley Reservoir	2010	Metaldehyde Steering Group; Environment Agency, Water companies
Microbiology; Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Progress delivery of Cross-compliance inspection and enforcement	Severn RBD	2010	Defra; Environment Agency; Rural Payments Agency
Microbiology; Organic pollutants; Nutrients; Sediments (as a direct pollutant); Physical modification; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Establish and maintain a nationally (Wales) funded advice-led programme under the Environment Agency Wales Catchment Initiatives to influence land management to bring about changes in practice that are likely to impact on water quality and achieve multiple outcomes – integrating diffuse pollution mitigation with habitat creation, localised flood risk and fisheries	Severn Uplands Catchment; Usk Catchment; Wye Catchment	2012	Environment Agency Wales

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	issues			
Nitrate	Address drinking water abstraction through Nitrates Action Programme in Nitrates Vulnerable Zone	River Leam - conf R Itchen to conf R Avon	2010	Environment Agency
Nitrate	Address issue as priority action within this England Catchment Sensitive Farming Initiative catchment. Nitrates Action Programme in Nitrate Vulnerable Zones will help address high nitrate concentrations in drinking water abstractions	Blagdon Lake	2010	Natural England
Nitrate	Advise farmers on nutrient planning and best practice to reduce nitrogen loading to land - England Catchment Sensitive Farming Initiative	Staffordshire Trent Valley - PT Sandstone Bishops Wood	2010	Land managers and owners
Nitrate	Comply with Environment Agency Notice (WRA S86 and S161, Groundwater Regulations, SSAFO). Make use of site specific notices to remove nitrate pollution risk to groundwater	Severn RBD	Implemented	Land managers and owners
Nitrate	Development planning - planning liaison. Site specific groundwater pollution prevention advice and recommendations	Severn RBD	Implemented	Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Nitrate	Enforcement of nitrate input restrictions through NVZ action plan by Cross compliance	Staffordshire Trent Valley - PT Sandstone Bishops Wood	Implemented	Land managers and owners; Environment Agency
Nitrate	Enforcement of Sludge Regulations through Cross compliance	Severn RBD	Implemented	Land managers and owners; Environment Agency
Nitrate	Follow advice on controlling nitrate releases to land and water	Severn RBD	Implemented	Land managers and owners
Nitrate	Follow The Code of Good Agricultural Practice - Published advice for operators on nitrate control	Severn RBD	Implemented	Land managers and owners
Nitrate	Implementation of Nitrates Directive NVZ Action Plan	Staffordshire Trent Valley - PT Sandstone Bishops Wood	Implemented	Land managers and owners; Environment Agency
Nitrate	Local agricultural partnerships e.g. LEAF, NGOs such as Rivers Trusts, Landcare, Farming & Wildlife Advisory Group - Advice to farmers on nitrate control	Severn RBD	Implemented	Land managers and owners
Nitrate	Make use of site specific notices to remove nitrate pollution risk to groundwater. (WRA S86 and S161, Groundwater Regulations, contaminated land legislation)	Severn RBD	Implemented	Local Authorities
Nitrate	Nitrates Action Programme in Nitrate Vulnerable Zones will help address high nitrate concentrations in drinking water abstractions	River Leam - conf R Itchen to conf R Avon	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Nitrate	Use of statutory notice powers (WRA S86 and S161, Groundwater Regulations, Silage Slurry and Agricultural Fuel Oils Regulations)	Severn RBD	Implemented	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	Severn RBD	Implemented	Environment Agency; Land managers and owners
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	NetRegs (Environmental Guidance to Business) - External education on groundwater pollution legislation	Severn RBD	Implemented	Environment Agency
Nitrate; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Faecal indicator organisms; Phosphate	Provide co-ordinated advice to farmers on complying with agricultural and environmental regulations through the Green Futures initiative in the West Midlands	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Warwickshire Avon Catchment; Worcestershire Middle Severn Catchment	Implemented	West Midlands Rural Hubs
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)	Severn RBD	Implemented	Welsh Assembly Government; Defra; Environment Agency
Nutrients	Promote 'Tried & Tested' Nutrient Management Plan to aid good	Severn RBD	Implemented	National Farmers' Union

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	nutrient planning and reduce risk to the water environment			
Nutrients	Tackle eutrophication problems in Bittell Reservoirs caused by diffuse inputs of nutrients by undertaking partnership project to implement solutions	Warwickshire Avon Catchment	Implemented	Environment Agency; British Waterways
Nutrients; Microbiology; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	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. Higher Level Stewardship is targeted by Natural England to maximise environmental and other public benefits in targeted areas within the RBD	Severn RBD	Implemented	Defra; Natural England
Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Microbiology	Establish Strategic Partnership Catchments in the Upper Severn Brooks (incl. Dowles/Wyre Forest) river catchments at risk from agricultural diffuse water pollution and not currently covered by the England Catchment Sensitive Farming Initiative. The Strategic Partnership Areas are to benefit from further funding in order to reduce diffuse water pollution from	Severn Uplands Catchment; Shropshire Middle Severn Catchment; Worcestershire Middle Severn Catchment	2010	Defra; Environment Agency; Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	agriculture			
Organic pollutants; Nitrate; Sediments (as a direct pollutant); Faecal indicator organisms; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Phosphate	Improvement in land management and reduction in diffuse pollution and sedimentation through the ravine woodlands restoration of ancient woodlands Wye valley	Wye Catchment	2012	Forestry Commission; Forestry Commission Wales
Pesticides (total)	Re-direct existing CSF resource to address issue.	R Wye - conf R Irfon to Brewardine Br	2010	Natural England
Pesticides, Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone	Draycote Water; R Severn - conf R Teme to conf R Avon; R Severn - conf R Worfe to conf R Stour; R Teme - conf R Onny to conf R Severn; River Leam - conf R Itchen to conf R Avon	2010	Environment Agency
Pesticides; Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone	R Teme - conf R Onny to conf R Severn; Draycote Water; R Severn - conf R Teme to conf R Avon	2010	Environment Agency
Phosphate	Address issue as priority action within this CSF catchment	R Axe-Stubbingham Rhyne to conf Brean Cross Sluice; Barrow Reservoir; Chew Valley lake; Blagdon Lake	2010	Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	Deliver the Salmon for Tomorrow Project in Wales	Severn RBD	2010	Environment Agency Wales
Physical modification	Reduce physical modification by encouraging better application of guidelines for managing drainage channels with biodiversity in mind, and educating as to best practice (The Drainage Channel Biodiversity Manual)	Severn RBD	2012	Environment Agency; Internal Drainage Boards
Physical modification	Undertake habitat improvements and water level management where eel habitats are directly impacted by land use activities.	Severn RBD	2010	Environment Agency; Farmers
Physical modification; Direct biological pressures; Sediments (as a direct pollutant)	Contribution to achieving good status through maintenance and conservation work carried out by internal drainage boards	Severn RBD	Implemented	Internal Drainage Boards
Priority Hazardous Substances, Priority Substances and Specific Pollutants	General guidance to improve Pesticide use through the Voluntary Initiative	Severn RBD	Implemented	Voluntary Initiative Partnership
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Nutrients; Sediments (as a direct pollutant)	Address land management and diffuse pollution issues through a series of farm visits and awareness campaigns and education targeted at land owners located within the 75 waterbodies rated as having the greatest environmental impact	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Warwickshire Avon Catchment; Worcestershire Middle Severn Catchment	2012	Environment Agency

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; Sediments (as a direct pollutant); Acidification; Nitrate; Phosphate	Reduce diffuse pollution by encouraging better application of Forests and Water Guidelines	Severn RBD	2012	Forestry Commission; Forestry Commission Wales
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Organic pollutants; Nutrients; Microbiology	Progress the Entry Level Stewardship Scheme offering farmers an incentive to achieve environmental benefits on agricultural land. Entry Level 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	Severn RBD	Implemented	Natural England; Defra
Priority Substances and Specific Pollutants; 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)	Severn RBD	2012	Industry leads; Land managers and owners; Water companies; Environment Agency
Sediments (as a direct pollutant); Habitat Manipulation (restoration/improvement); Nitrate;	Promote land use change in the River Isbourne catchment to deliver flood risk and environmental	Warwickshire Avon Catchment	Implemented	Natural England; Environment Agency; Environmental NGOs

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Phosphate	benefits			
Sediments (as a direct pollutant); Microbiology; Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Establish and maintain a nationally funded advice-led partnership under the England Catchment Sensitive Farming Initiative to reduce diffuse water pollution from agriculture in at risk catchments. (North Somerset Moors, Wye, Lugg, Teme, West Midlands Meres and Mosses, Tern and Roden, Leaden)	Bristol Avon & North Somerset Streams Catchment; Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Wye Catchment	2010	Environment Agency; Natural England
Sediments (as a direct pollutant); Nutrients; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Reduce diffuse pollution and overland flood flows by undertaking woodland planting, including wet and dry woodland, and hedgerow restoration work	Severn RBD	2012	Environment Agency; Forestry Commission; Environmental NGOs; Local Authorities; Forestry Commission Wales; Countryside Council for Wales
Sediments (as a direct pollutant); Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants; Faecal indicator organisms; Nitrate; Phosphate	Strengthen the options for landowners to access Better Woodlands for Wales grants for woodland creation by including woodlands as a form of land use in the new Codes of Good Agricultural Practice	Severn Uplands Catchment; Usk Catchment; Wye Catchment	Implemented	Welsh Assembly Government

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Sediments (as a direct pollutant); Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants; Nutrients; Microbiology	Establish a Strategic Partnership Catchment in the Upper Warwickshire Avon (incl. Leam) river catchment which is at risk from agricultural diffuse water pollution and not currently covered by the England Catchment Sensitive Farming Initiative. The Strategic Partnership Areas are to benefit from further funding in order to reduce diffuse water pollution from agriculture	Warwickshire Avon Catchment	Implemented	Environment Agency; Defra; Natural England; Severn Trent Water
Investigations				
Ammonia; Chlortoluron; MCPA; Mecoprop - p; Nitrate; 2,4-D	Further monitoring to confirm risk of failure of WFD Article 7	R Frome - Slad Bk to R Severn	2010	Environment Agency; Water companies
Ammonia; Colour	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can be considered	Draycote Water; R Severn - conf R Worfe to conf R Stour; R Severn - conf R Worfe to conf R Stour	2010	Environment Agency
Asulam; Atrazine; Dieldrin; Isoproturon; Simazine	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this.	River Leam - conf R Itchen to conf R Avon	2010	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Asulam; Atrazine; Isoproturon; Simazine; Trifluralin	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	R Teme - conf R Onny to conf R Severn	2010	Central Government; Environment Agency
Asulam; Isoproturon	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	Caban-coch Reservoir; Claerwen Reservoir	2010	Central Government; Environment Agency
Asulam; MCPA; Triclopyr; 2,4-D	Further monitoring to confirm risk of failure of WFD Article 7	R Axe-Stubbingham Rhyne to conf Brean Cross Sluice	2010	Environment Agency; Water companies
Atrazine; Diuron; Isoproturon; Simazine	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	R Axe-Stubbingham Rhyne to conf Brean Cross Sluice	2010	Central Government; Environment Agency
Atrazine; Isoproturon; Simazine	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	R Wye - conf R Irfon to Brewardine Br; R Severn - conf R Worfe to conf R Stour	2010	Central Government; Environment Agency
Bentazone; Carbendazim; Chlortoluron; Clopyralid; Fluroxypyr; Iprodione; Metazachlor	Address issue as priority action within this VI Pilot Catchment. Water industry catchment	River Leam - conf R Itchen to conf R Avon	2010	Pesticides Voluntary Initiative

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	investigation to establish source of pollutant			
Captan; Chlortoluron; Linuron; MCPB; MCPA; Mecoprop; Terbutryn; 2,4-D	Further monitoring to confirm risk of failure of WFD Article 7	R Teme - conf R Onny to conf R Severn	2010	Environment Agency; Water companies
Carbetamide	Further monitoring to confirm risk of failure of WFD Article 7	River Leam - conf R Itchen to conf R Avon; R Severn - conf R Worfe to conf R Stour	2010	Environment Agency; Water companies
Carbetamide; Colour; Cyfluthrin; Difenzoquat; Iprodione; Linuron; MCPA; Mecoprop	Further monitoring to confirm risk of failure of WFD Article 7	R Wye - conf R Irfon to Brewardine Br	2010	Environment Agency; Water companies
Carbetamide; Dalapon	Further monitoring to confirm risk of failure of WFD Article 7	Draycote Water	2010	Environment Agency; Water companies
Chemicals - sheep dip	Reduce impacts from sheep dip by implementing a strategic approach to gathering evidence on sheep dip usage and disposal of waste dip. Target mobile dippers and farms that are purchasing sheep dip and do not hold a groundwater authorisation for disposal	Usk Catchment; Wye Catchment	Implemented	Environment Agency
Chemicals - sheep dip	Reduce impacts from sheep dip by using sheep dip survey work to target Environment Agency pollution prevention visits	Severn Uplands Catchment; Usk Catchment; Wye Catchment	Implemented	Environment Agency
Chlortoluron	Further monitoring to confirm risk of failure of WFD Article 7	Chew Valley lake	2010	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Chlortoluron; Diuron; MCPA; Mecoprop	Further monitoring to confirm risk of failure of WFD Article 7. Water industry catchment investigation to establish source of pollutant	R Severn - conf R Worfe to conf R Stour	2010	Environment Agency; Water companies
Colour	Further monitoring to confirm risk of failure of WFD Article 7	Barrow 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	Eunant - source to Lake Vyrnwy (Pont Eunant); Afon Nadroedd - source to Lake Vyrnwy; Afon Cedig - source to Lake Vyrnwy; Afon Cownwy - source to conf Afon Vyrnwy; Afon Hirddu - source to Lake Vyrnwy; R Vrynwy - Lake Vrynwy to conf Afon Cownwy	2010	Environment Agency; Water companies
Colour	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can be considered	Draycote Water	2010	Environment Agency
Dalapon	Further monitoring to confirm risk of failure of WFD Article 7. Water industry catchment investigation to establish source of pollutant	River Leam - conf R Itchen to conf R Avon	2010	Environment Agency; Water companies
Geosmin; 2-methyl iso borneol	Further monitoring to confirm risk of failure of WFD Article 7	Caerfanell - source to conf R Usk	2010	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Glyphosate; Mecoprop - p	Further monitoring to confirm risk of failure of WFD Article 7	Blagdon Lake	2010	Environment Agency; Water companies
Iprodione; Nitrate; Mecoprop - p; Mecoprop; MCPB; Geosmin; Chlortoluron; Colour; Cyfluthrin; Dalapon; Difenzoquat; MCPA; Asulam; Linuron; Ammonia; 2-methyl iso borneol; 2,4-D; Triclopyr; Glyphosate; Captan; Diuron; Terbutryn	Further monitoring to confirm risk of failure of WFD Article 7	Barrow Reservoir; Blagdon Lake; Caerfanell - source to conf R Usk; Chew Valley lake; Draycote Water; R Axe-Stubbingham Rhyne to conf Brean Cross Sluice; R Frome - Slad Bk to R Severn; R Severn - conf R Worfe to conf R Stour; R Teme - conf R Onny to conf R Severn; R Wye - conf R Irfon to Brewardine Br; River Leam - conf R Itchen to conf R Avon	2010	Environment Agency; Water companies
Isoproturon	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	Barrow Reservoir	2010	Central Government; Environment Agency
Isoproturon;Dieldrin; Diuron; Asulam; Trifluralin; Atrazine; Simazine	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	Barrow Reservoir; Caban-coch Reservoir; Claerwen Reservoir; Draycote Water; R Axe-Stubbingham Rhyne to conf Brean Cross Sluice; R Frome - Slad Bk to R Severn; R Severn - conf R	2010	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
		Worfe to conf R Stour; R Teme - conf R Onny to conf R Severn; R Wye - conf R Irfon to Brewardine Br; River Leam - conf R Itchen to conf R Avon		
Isoproturon; Simazine	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	R Frome - Slad Bk to R Severn; Draycote Water	2010	Central Government; Environment Agency
Mecoprop; MCPA	Further monitoring to confirm risk of failure of WFD Article 7	Caban-coch Reservoir; Claerwen Reservoir	2010	Natural England; Countryside Council for Wales
Metaldehyde	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can be considered. Water industry catchment scheme to address diffuse pollution in the catchment. Proactive implementation of Metaldehyde Steering Group 'Get Pelletwise' measures	Blagdon Lake	2010	Metaldehyde Steering Group
Metaldehyde	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can be	Chew Valley lake	2010	Metaldehyde Steering Group

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	considered. Proactive implementation of Metaldehyde Steering Group 'Get Pelletwise' measures			
Nitrate; Hazardous substances and non-hazardous pollutants; Phosphate; Priority Substances and Specific Pollutants	Investigation of Groundwater Dependent Terrestrial Ecosystems (GWDTEs) to assess if they have been significantly damaged as a result of groundwater pollution	Severn RBD	Implemented	Environment Agency
Pesticides; Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone. Water industry catchment investigation to establish source of pollutant	River Leam - conf R Itchen to conf R Avon; R Severn - conf R Worfe to conf R Stour	2010	Environment Agency
Phosphate	Local Investigation - internal discussions, local sampling and assessment to determine the source of phosphorous and level of any associated impact on surface water	Severn Uplands - Secondary Combined; Shropshire Middle Severn - PT Sandstone East Shropshire; Worcestershire Middle Severn - PT Sandstone	2010	Environment Agency
Physical modification	Assess eel populations in the Caldicot and Wentlooge Reen system	South East Valleys Catchment; Usk Catchment; Wye Catchment	Implemented	Environment Agency
Physical modification	Investigate feasibility of re-aligning flood defences at Slimbridge on the Severn Estuary to create inter-tidal and freshwater habitat	SEVERN MIDDLE	Implemented	Environment Agency; Environmental NGOs

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	Investigate opportunities for improved habitat connectivity through flood defences by managed re-alignment or changes to flap gate design or operation	SEVERN LOWER; SEVERN MIDDLE ; SEVERN UPPER; Severn Vale Catchment; Worcestershire Middle Severn Catchment	2010	Environment Agency; Internal Drainage Boards
Sediments (as a direct pollutant)	Improve evidence base for sediments by identifying and using available sources of data, e.g. from Highways Agency to identify hot spots	Usk Catchment; Wye Catchment	2010	Environment Agency
Sediments (as a direct pollutant)	Investigation into the cause of sediment impact	Severn RBD	2012	Environment Agency
Natura 2000 and SSSI plans & programmes				
Nutrients; Sediments (as a direct pollutant)	Contribute to favourable condition on Tickenham, Nailsea and Kenn Moors SSSI, Marton Pool, Chirbury SSSI, Montgomery Canal, Aston Locks - Keeper's Bridge SSSI, Fenemere SSSI, Sweat Mere and Crose Mere SSSI, White Mere SSSI, River Teme SSSI, Bomere, Shomere and Betton Pools SSSI, Puxton Moor SSSI, Aqualate Mere SSSI, Coombe Hill Canal SSSI, Westwood Great Pool SSSI and Maer Pool SSSI by developing a pollution action plan	Bristol Avon & North Somerset Streams Catchment; Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Worcestershire Middle Severn Catchment	2012	Natural England; Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification; Abstraction and other artificial flow pressures	Contribute to favourable condition on Biddle Street, Yatton SSSI, Puxton Moor SSSI and Tickenham, Nailsea and Kenn Moors SSSI by implementing water level management plans	Bristol Avon & North Somerset Streams Catchment	2010	West Mendip Internal Drainage Board; North Somerset Internal Drainage Board; Environment Agency
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 (Review of Consents) to address water quality pressures (See Annex D)	Severn RBD	2010	Environment Agency
Abstraction and other artificial flow pressures; direct biological pressures; microbiology; nutrients; organic pollutants; physical modification; Priority Hazardous Substances; Priority Substances and Specific Pollutants; sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through land management schemes (see below and Annex D)	Severn RBD	2012	Countryside Council for Wales, Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction and other artificial flow pressures; direct biological pressures; microbiology; nutrients; organic pollutants; physical modification; Priority Hazardous Substances; Priority Substances and Specific Pollutants; sediments (as a direct pollutant)	Target land management measures through Glastir agri-environment scheme and Section 15 agreements to mitigate diffuse pollution from agriculture and reduce impact of drainage to enhance biodiversity and achieve favourable conservation status. These measures will include, but are not limited to: Fencing watercourses where cattle are part of the farm enterprise; Improving crossing points for streams and ditches; Culverting gateways where appropriate; Separating clean and dirty water in farmyards, raising water levels and changing drainage regimes	Targeted at catchments and sub-catchments that contribute to the failure of environmental objectives.	2012	Countryside Council for Wales, Welsh Assembly Government
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through other competent authority functions (see Annex D)	Severn RBD	2012	British Waterways, Countryside Council for Wales, Environment Agency, Forestry Commission Wales, Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through specific habitats works (see Annex D)	Severn RBD	2012	British Waterways, Countryside Council for Wales, Defence Estates, Environment Agency, Local Authorities, National Parks, National Trust, RSPB, Water companies, Welsh Assembly Government, Wildlife Trusts
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)	Severn RBD	2012	Environment Agency
Nutrients; Physical modification; Abstraction and other artificial flow pressures	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Specific Management Works to address water quality and morphology pressures (See Annex D)	Severn RBD	2012	Natural England
Nutrients; Physical modification; Abstraction and other artificial flow pressures; Direct biological pressures	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through SSSI	Severn RBD	2012	Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	Management Agreement (See Annex D)			
Nutrients; Physical modification; Sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through the England Catchment Sensitive Farming Initiative (See Annex D)	Severn RBD	2012	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)	Severn RBD	2012	Environment Agency; Farmers
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 Consents (See Annex D)	Severn RBD	2012	Environment Agency
Physical modification; Sediments (as a direct pollutant); Abstraction and other artificial flow pressures; Nutrients; Direct biological pressures	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by implementing agri-environment scheme (See Annex D)	Severn RBD	2012	Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Sediments (as a direct pollutant); Nutrients	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)	Severn RBD	2012	Environment Agency; Natural England
Sediments (as a direct pollutant); 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 agri-environment scheme to address water quality, hydrology and morphology pressures (See Annex D)	Severn RBD	2010	Natural England
Sediments (as a direct pollutant); 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 SSSI management agreement to address hydrology, morphology and water quality pressures (See Annex D)	Severn RBD	2010	Natural England
Sediments (as a direct pollutant); Nutrients	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through England Catchment Sensitive Farming Initiative to address water quality pressures (See Annex D)	Severn RBD	2010	Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Investigations - Natura 2000 plans & programmes				
Nutrients; 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)	Severn RBD	2012	Environment Agency
Sediments (as a direct pollutant); Nutrients	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through regulatory investigation into diffuse pollution to address water quality pressures (See Annex D)	Severn RBD	2010	Environment Agency
Sediments (as a direct pollutant); Nutrients	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Regulatory Investigation into water quality pressures (See Annex D)	Severn RBD	2012	Environment Agency

C.5 Angling and conservation

The Severn river basin supports a rich and diverse range of wildlife and has a large number of nationally and internationally important wildlife sites, habitats and species. There are many wetlands in the district including the West Midlands Meres and Mosses and floodplain grasslands of the lower River Severn and River Avon. There are significant populations of Biodiversity Action Plan species including otter, twaite shad, freshwater pearl mussel and grass-wrack pondweed. The Severn Estuary and its surrounding area are afforded a very high level of protection under European wildlife law. Wildlife and habitats can be threatened by land use changes (development, agriculture and water management), climate change and environmental pollution.

Fish are one of the best indicators of the state of the water environment, and in the Severn River Basin, fisheries play an important conservation role as well as providing great recreational opportunities. Angling is an important recreational activity and can play an important role in creating significant contributions to the Governments' social and economic priorities, particularly in Rural Areas. Many of the rivers are high quality coarse or salmonid fisheries and the Rivers Severn, Wye and Usk are particularly important for migratory Atlantic salmon and sea trout. The Severn Estuary also supports traditional licensed commercial capture methods for salmon including, putts, putchers and lave netting as well as seasonal fishing for elvers (young eels) in the upper reaches of the estuary. The Severn elver catch represents 95% of the total catch for England and Wales. The Bristol Avon catchment supports a diverse fish fauna and at least twenty species of coarse fish are known to be present. It is highly regarded as a coarse fishery and is important for recreational fishing. Brown Trout co-exist with the coarse fish in the upper reaches. The River Axe supports both good trout and coarse fisheries. Angling is important in the larger rivers and drains across the area. There is some commercial fishing for elvers on the tidal reaches. 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	
Abstraction	Extension of abstraction control to include previously exempt uses (abstractions by Ports and Harbour authorities from tidal waters under certain conditions	Severn RBD	2012	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	likely to remain exempt)			
Abstraction and other artificial flow pressures	Registration for previously exempt activity: abstraction of water within water meadow systems	Severn RBD	2012	Environment Agency
Acidification; Habitat manipulation (restoration/improvement); Physical modification	EU Life + project (ISAC) to reduce the pressures from acidification through removal of trees and catchment liming. Wetland restoration and habitat improvements to support SAC species including salmon, freshwater pearl mussels and native white-clawed crayfish	R Irfon - source to conf Afon Gwesyn; R Irfon - conf Afon Gwesyn to conf Cledan; R Irfon - conf Tirabad Dulas to conf R Wye; R Irfon - conf Cledan to conf Tirabad Dulas	2010	Wye and Usk Foundation; Environment Agency Wales; Countryside Council for Wales; Forestry Commission Wales
Acidification; Physical modification	EU Fisheries Fund project to reduce local impacts of acidification by continuing long term programme of catchment liming, easements for fish passage and habitat restoration	Severn Uplands Catchment; Usk Catchment; Wye Catchment	Implemented	Wye and Usk Foundation; Environment Agency; Countryside Council for Wales; Natural England
Alien species	Explore options for increasing public access to information on invasive alien species	South East Valleys Catchment; Usk Catchment; Wye Catchment	2012	Wales Biodiversity Partnership
Alien species	Mitigate the spread and impact of non-native invasive crayfish through the South West White-Clawed Crayfish Conservation Project	Bristol Avon & North Somerset Streams Catchment	Implemented	Bristol Zoo Gardens

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Alien species	Promote All Wales Record Centre Agreement to enable effective collation and sharing of data on invasive alien species	South East Valleys Catchment; Usk Catchment; Wye Catchment	2012	Wales Biodiversity Partnership
Alien species	Support the all Wales and establish Severn RBD invasive non-native species fora to coordinate priorities and implement control measures	Severn RBD	2012	Wales Biodiversity Partnership; Environment Agency
Alien species	Tackle invasive weeds in a coordinated way through the Bristol Avon Invasive Weed Forum	Bristol Avon & North Somerset Streams Catchment	2012	Bristol City Council
Alien species; Habitat manipulation (restoration/improvement)	"Giving up the Weed" project - Control & eradication of invasive weeds (Giant Hogweed, Japanese Knotweed, Himalayan Balsam). Eradication of signal crayfish, habitat restoration and release of native white-clawed crayfish	Usk Catchment; Wye Catchment	Implemented	Wye and Usk Foundation; Countryside Council for Wales; Environment Agency; Keep Wales Tidy
Alien species; Habitat manipulation (restoration/improvement); Physical modification	Severn Rivers Trust project to reduce overshading, remove and control invasive weed species, improve habitat and natural fish recruitment. Mitigate Phytophthora disease, increase biodiversity and access opportunities	Teme Catchment	2010	Severn Rivers Trust; Environment Agency; Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Biota removal (including commercial fish take and weed control)	Achieve 40% escapement of silver eels and sustainable elver exploitation - Eel Management Plans	Severn RBD	2012	Environment Agency
Biota removal (including commercial fish take and weed control)	Closure of the Goldcliff Putter Ranks in the Severn Estuary	SEVERN LOWER	Implemented	Environment Agency
Biota removal (including commercial fish take and weed control)	Develop Angling Participation Initiatives	South East Valleys Catchment	Implemented	South East Wales Rivers Trust; Environment Agency Wales
Biota removal (including commercial fish take and weed control)	Encourage catch and release of salmon through incentives and education	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Worcestershire Middle Severn Catchment	Implemented	Environment Agency
Biota removal (including commercial fish take and weed control)	Enforcement of netting byelaws and controls on illegal fishing in the Severn Estuary	SEVERN LOWER; SEVERN MIDDLE ; SEVERN UPPER	Implemented	Environment Agency
Biota removal (including commercial fish take and weed control)	Enforcement of rod fishing byelaws in the Severn Estuary, including illegal fishing and buyer beware campaigns including restaurant visits	SEVERN LOWER; SEVERN MIDDLE ; SEVERN UPPER	Implemented	Environment Agency
Biota removal (including commercial fish take and weed control)	Implementation of new fisheries legislation to seek closure if required of mixed stocked salmon fisheries in the Severn Estuary,	SEVERN MIDDLE ; SEVERN UPPER	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	currently protected under historic Certificate of Privilege			
Biota removal (including commercial fish take and weed control)	Improve access for fish and habitat quality on the rivers Arrow and Lugg	Wye Catchment	2012	Environment Agency
Biota removal (including commercial fish take and weed control)	Improve access for salmonid migration	South East Valleys Catchment; Usk Catchment; Wye Catchment	2012	Environment Agency
Biota removal (including commercial fish take and weed control)	Improve fisheries infrastructure on prioritised, audited fisheries	South East Valleys Catchment	Implemented	Environment Agency Wales; South East Wales Rivers Trust
Biota removal (including commercial fish take and weed control)	Improve habitat for spawning and juvenile production	South East Valleys Catchment; Wye Catchment	Implemented	Environment Agency Wales
Biota removal (including commercial fish take and weed control)	Introduction of measures to reduce exploitation on Salmon Action Plan rivers in the 'at risk' category	South East Valleys Catchment; Wye Catchment	2010	Environment Agency
Biota removal (including commercial fish take and weed control)	Promotion of traditional methods of Fixed Engine construction and operation in conjunction with Severn Netsmen Association to help manage exploitation in the Severn Estuary	SEVERN MIDDLE ; SEVERN UPPER	Implemented	Severn Netsman Association
Biota removal (including commercial fish take and weed control)	Reduce illegal eel and elver fishing in estuaries, rivers and stillwaters	Severn RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Biota removal (including commercial fish take and weed control)	Reduce illegal fishing in estuaries rivers and stillwaters	Severn RBD	Implemented	Environment Agency
Biota removal (including commercial fish take and weed control)	Renewal of Wye specific byelaws to ban bait fishing on river	Wye Catchment	Implemented	Environment Agency
Direct biological pressures; Physical modification	Deliver the Sustainable Fisheries Programme Coarse Habitat Project in Wales	Severn RBD	2010	Environment Agency Wales
Direct biological pressures; Physical modification	Deliver the Sustainable Fisheries Programme for migratory salmonid habitat restoration in Wales	Severn RBD	2010	Environment Agency Wales
Direct biological pressures; Physical modification	Deliver the Sustainable Fisheries Programme Trout Habitat Project in Wales	Severn RBD	2010	Environment Agency Wales
Direct biological pressures; Physical modification	Deliver the Wild Fishing Wales Project	Severn RBD	2010	Environment Agency Wales; Rivers Trusts; Countryside Council for Wales; Angling Associations; Land managers and owners
Fish stocking (including disease and predation)	Audit high-risk fish movements and enforce against illegal activity	Severn RBD	Implemented	Environment Agency
Fish stocking (including disease and predation)	Comply with new improvements to Fish Passage Regulation	Severn RBD	2011	Defra
Fish stocking (including disease and predation)	Implement brown trout stocking programme in the Taf Fechan following 2006 pollution incident	Taf Fechan - source to conf Afon Taf Fawr	Implemented	Merthyr Tydfil Angling Association; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Fish stocking (including disease and predation)	Mitigation and rehabilitation stocking of salmon from Clywedog Hatchery	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Worcestershire Middle Severn Catchment	Implemented	Environment Agency
Fish stocking (including disease and predation)	Re-stock elvers to catchments as part of Eel Management Plans	Severn RBD	2012	Environment Agency
Fish stocking (including disease and predation)	Undertake Salmon in Schools Project to raise local awareness of salmon lifecycle and habitat impacts	Severn Uplands Catchment; Severn Vale Catchment	Implemented	Environment Agency
Fish stocking (including disease and predation)	Undertake salmon stocking in catchment to mitigate for the Cardiff Bay Barrage	South East Valleys Catchment	Implemented	Environment Agency
Habitat Manipulation (restoration/improvement)	Avon Vale project - Worcestershire Wildlife Trust led partnership with local landowners to increase the biodiversity value of the River Avon catchment and contribute to achieving WFD objectives through a programme of habitat restoration and management	Warwickshire Avon Catchment	Implemented	Environmental NGOs
Habitat Manipulation (restoration/improvement)	Contribute to achieving good ecological status through projects on Worcestershire Wildlife Trust's flagship reserves adjacent to	Warwickshire Avon Catchment; Worcestershire Middle Severn Catchment	Implemented	Environmental NGOs

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	watercourses including Longdon Brook, River Avon, Feckenham Wylde Moor (Bow Brook) Upton Warren (R. Salwarpe)			
Habitat Manipulation (restoration/improvement)	River Sowe 'Access to Nature' project - Warwickshire Wildlife Trust project to involve people in caring for and valuing the River Sowe in Coventry	Warwickshire Avon Catchment	Implemented	Environmental NGOs
Habitat Manipulation (restoration/improvement)	Shropshire Wildlife Trust Living Landscape projects targeted at improving the water environment, for example, the Severn Vyrnwy initiative encouraging land owners to join the Higher Level Scheme of Environmental Stewardship and purchase of land adjacent to Weir Brook	Afon Vyrnwy - conf Afon Tanat to conf R Severn; Weir Bk - source to conf R Severn	Implemented	Environmental NGOs
Habitat manipulation (restoration/improvement); Physical modification; Nutrients; Sediment (as direct pollutant)	Fish passage and habitat restoration projects including Lugg and River Arrow project (LARA) to reduce physical modification and diffuse pollution through practical actions such as fencing and buffer strips and removal of obstruction to fish passage	Wye Catchment	Implemented	Wye and Usk Foundation; Environment Agency Wales; Environmental NGOs

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); Microbiology; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Severn Rivers Trust participating in the national PINPOINT (Practical Initiative for Pollution Information Targeting) and SCIMAP (Sensitive Catchment Integrated Modelling Platform) projects to train staff to target sub-catchments and deliver qualified advice to farmers and land managers on economically sound measures to reduce diffuse water pollution from agriculture	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Worcestershire Middle Severn Catchment	2012	Environmental NGOs
Physical modification	Deliver the Salmon for Tomorrow Project in Wales	Severn RBD	2010	Environment Agency Wales
Physical modification	Develop and deliver a comprehensive programme of improvements to or removal of Environment Agency owned weirs which are the most significant physical barriers to fish passage. The best solution will be identified on a site by site basis	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; South East Valleys Catchment; Usk Catchment; Warwickshire Avon Catchment; Worcestershire Middle Severn Catchment; Wye Catchment	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	Habitat management work to improve eel habitats – use Environment Agency consenting of works to improve habitats	Severn RBD	2010	Environment Agency; Farmers
Physical modification	Habitat Management Work to improve trout habitats through tree management	Teme Catchment	Implemented	Environment Agency
Physical modification	Improvements to debris deflector at Brampton Weir fish pass on the River Teme	Teme Catchment	Implemented	Environment Agency
Physical modification	Maintain and improve eel passage at identified obstructions on Severn, Wye, Usk, Taff and Lyd	Severn RBD	2011	Environment Agency
Physical modification	Produce costed feasibilities to influence improved fish passage at Diglis, Bevere, Holt, Lincomb weirs on the River Severn navigation with particular reference to Shad if legislative or other opportunities arise	Severn Vale Catchment; Worcestershire Middle Severn Catchment	2012	Environment Agency; Local Authorities; Natural England; British Waterways
Physical modification	Produce costed feasibilities to influence improved fish passage at Diglis, Bevere, Holt, Lincomb weirs on the River Severn navigation with particular reference to Shad if legislative or other opportunities arise	Severn Vale Catchment; Worcestershire Middle Severn Catchment	2012	Environment Agency; Local Authorities; Natural England; British Waterways

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	Produce plan of priority actions for easing passage for eels and elvers taking account of availability of upstream habitat	Severn RBD	2010	Environment Agency
Physical modification	Produce plans with costs and potential timescales for implementation of Shad passage at Powick Weir	Teme Catchment	2012	Environment Agency; Local Authorities; Natural England
Physical modification	Provision of best practice advice and guidance to riparian owners to reduce the impact of aggregate extraction from Rivers Wye and Usk Special Areas of Conservation in Wales through the River Aggregates Sustainability Project (RASP)	Usk Catchment; Wye Catchment	Implemented	Countryside Council for Wales; Environment Agency Wales; Environmental NGOs; Wye and Usk Foundation
Physical modification	Undertake site specific restoration schemes based on strategic priorities using rod licence income	Severn RBD	2012	Environment Agency
Physical modification	Use Environment Agency consenting of works to improve eel habitat	Severn RBD	Implemented	Environment Agency
Physical modification; Alien species; Habitat Manipulation (restoration/improvement)	Birmingham and Black Country Wildlife Trust's Wolverhampton Natural Curriculum Project and Black Country Living Landscape - Access to Nature community involvement programme will	Worcestershire Middle Severn Catchment	2010	Environmental NGOs

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	contribute to achieving WFD targets and raise awareness of local rivers			
Physical modification; Alien species; Habitat Manipulation (restoration/improvement)	South East Wales Rivers Trust programme of work to improve river habitat, remove barriers to fish migration and eradicate invasive species in the Taff, Rhymney and Ebbw & Sirhowy catchments. Education projects in schools and the community includes the Salmon Coming Home and Ysgol-y-Graig Outdoor Classroom projects	South East Valleys Catchment	Implemented	Environmental NGOs
Physical modification; Alien species; Habitat Manipulation (restoration/improvement)	Warwickshire Wildlife Trust Living Landscape projects including the River Avon Snipe project and River Stour Vision biodiversity project. Delivery involves working with Stratford DC, schools and landowners to improve riparian habitat and river ecology and re-establish wetlands at identified sites	Warwickshire Avon Catchment	Implemented	Environmental NGOs; Local Authorities
Physical modification; Nitrate; Sediments (as a direct pollutant); Phosphate	Reduce diffuse pollution and overland flood flows by undertaking woodland planting, including wet and dry woodland,	Warwickshire Avon Catchment	2012	Forestry Commission; Natural England; Environment Agency; Worcestershire Wildlife

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	hedgerow restoration work, wetland creation, stream restoration under the "Living Landscapes" Bow Brook Catchment Project			Trust
Physical modification; Sediments (as a direct pollutant); Nitrate; Phosphate	Use the Higher Level Stewardship Scheme to offer farmers an incentive to achieve environmental benefits through arable reversion in floodplain, habitat management, creation and restoration under the "Living Landscapes" Bow Brook Catchment Project	Warwickshire Avon Catchment	2012	Environment Agency; Worcestershire Wildlife Trust; Forestry Commission; Natural England
Sediments (as a direct pollutant); chemicals – metals; Organic pollutants	Reduce diffuse pollution by developing examples and promoting awareness of best practice use of Sustainable Drainage Systems	Severn RBD	Implemented	Environmental NGOs; Local Authorities
Investigations				
Alien species	Survey work to update knowledge of invasive non-native crayfish distribution implemented in conjunction with the South West White-Clawed Crayfish Conservation Project	Bristol Avon & North Somerset Streams Catchment	Implemented	Environment Agency
Biota removal (including commercial fish take and weed	Assess habitat and obstructions to fish migration to identify	South East Valleys Catchment	Implemented	Fisheries and Angling Interests; South East

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
control)	opportunities for river enhancements			Wales Rivers Trust; Environment Agency Wales
Biota removal (including commercial fish take and weed control)	Investigate and implement screening measures at abstractions to limit fish entrainment	South East Valleys Catchment; Usk Catchment; Wye Catchment	Implemented	Environment Agency
Biota removal (including commercial fish take and weed control)	Investigate sources of siltation and impacts on survival of salmon embryos in rivers Lugg and Arrow	Wye Catchment	2012	Environment Agency
Biota removal (including commercial fish take and weed control)	Weekly examination of trash screens at Oldbury Power Station on the Severn Estuary to quantify smolt and shad mortality	SEVERN MIDDLE	Implemented	Environment Agency
Chemicals - Specific pollutants; Physical modification; Sediments (as a direct pollutant)	Assess mineral restoration schemes for potential for delivering Water Framework Directive benefits including revenue and funding streams from the Aggregate Levy Sustainability Fund, Landfill Tax and waste levies for restoration research and possible schemes	Severn RBD	2010	Natural England; Local Authorities; Land managers and owners; Environment Agency; Environmental NGOs
Direct biological pressures	Improve salmon stock run assessment through deployment of counters on Rivers Severn and Teme	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment;	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
		Worcestershire Middle Severn Catchment		
Direct biological pressures	Improve salmon stock run assessment, through operation of anglers catch card scheme	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Worcestershire Middle Severn Catchment	Implemented	Environment Agency
Fish stocking (including disease and predation)	Monitoring parasites and diseases in the wild to prevent collapse of fish communities and detriment to status	Severn RBD	Implemented	CEFAS
Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Monitor the recovery of the Taf Fechan following the 2006 pollution incident	Taf Fechan - source to conf Afon Taf Fawr; South East Valleys Catchment	Implemented	Environment Agency; Merthyr Tydfil Angling Association
Physical modification	Habitat assessment of River Leadon to identify areas for future improvements for salmonids	Severn Vale Catchment	2010	Environment Agency
Physical modification	Assess eel populations in the Caldicot and Wentlooge Reen system	South East Valleys Catchment; Usk Catchment; Wye Catchment	Implemented	Environment Agency
Physical modification	Investigate feasibility of re-aligning flood defences at Slimbridge on the Severn Estuary	SEVERN MIDDLE	Implemented	Environment Agency; Environmental NGOs

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	to create inter-tidal and freshwater habitat			
Sediments (as a direct pollutant); Nitrate; Physical modification; Phosphate	Improve understanding of the origins of and solution to diffuse pollution by carrying out local investigations in the Bow Brook catchment under the "Living Landscapes" Bow Brook Catchment Project	Warwickshire Avon Catchment	Implemented	Environment Agency; Forestry Commission; Natural England; Worcestershire Wildlife Trust
Natura 2000 and SSSI plans & programmes				
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through specific habitats works (see Annex D)	Severn RBD	2012	British Waterways, Countryside Council for Wales, Defence Estates, Environment Agency, Local Authorities, National Parks, National Trust, RSPB, Water companies, Welsh Assembly Government, Wildlife Trusts

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 rural policy. Defra has several delivery partners that have important actions in the River Basin Management Plan, including the following:

- Marine and Fisheries Agency
- Centre for the Environment, Fisheries and Aquaculture Science (CEFAS)
- Rural Payments Agency
- Environment Agency (see separate section)
- Forestry Commission
- National Park Authorities

Other Government Departments

- 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)

The Crown Estate is a government organisation with a property portfolio encompassing many of the UK's cityscapes, ancient forests, farms, parkland, coastline and communities. It has an important role as influencer, manager, guardian and facilitator. Working in partnership with others, the Crown Estate enables and nurtures productive commercial opportunities, protects vulnerable environments, and enables social integration.

Welsh Assembly Government is responsible for, amongst other matters, environment, sustainability, rural affairs, economy and transport. and has governmental responsibility for the Water Framework Directive in Wales. Its delivery partners include:

- Countryside Council for Wales
- other governmental partner organisations in Wales.

Table C6: **Actions for central government**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Alien species	Contribute to the development of any EU level initiatives to improve legislation and controls relating to invasive non-native species.	Severn RBD	2012	Central Government
Alien species	Develop a national early warning system with contingencies for rapid response control measures to eradicate new invasions	Severn RBD	2012	Central Government
Alien species	Develop and implement codes of practice to reduce the spread of invasive non-native species	Severn RBD	2012	Central Government; Environment Agency
Alien species	Draw together a database of projects to facilitate better information sharing and increase opportunities for partnership working	Severn RBD	2012	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	Severn RBD	2012	Central Government; Environment Agency
Alien species	Establish a central repository for holding data on invasive non-native species distribution.	Severn RBD	2012	Central Government
Alien species	Establish National Invasive Non-Native Species Forums to plan, prioritise and coordinate action	Severn RBD	Implemented	Central Government

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Alien species	Improve information on distribution of alien plant species by using information gathered from herbicide applications to create an alien species database and linking to data gathered from other organisations	Severn RBD	2012	Welsh Assembly Government; Central Government
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 species.	Severn RBD	2010	Central Government
Alien species	Integrate invasive non-native species control measures across all policy areas	Severn RBD	2012	Environment Agency; Central Government
Alien species	Make appropriate use of existing legislative powers e.g. 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)	Severn RBD	2012	Central Government; Environment Agency
Alien species	Provide advice and training on identification, control and disposal of invasive non-native species to all	Severn RBD	2012	Environment Agency; Central Government

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	relevant groups and encourage monitoring schemes.			
Alien species	Set up and maintain a website that acts as a "one stop shop" for information and advice on invasive non-native species.	Severn RBD	Implemented	Central Government
Alien species	Support established local fora by providing advice and guidance and support control actions by selected local fora	Severn 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	Severn RBD	2010	Central Government
Ammonia; Cryptosporidium; Phosphate	Address issue as priority action within this CSF catchment	R Axe-Stubbingham Rhyne to conf Brean Cross Sluice; Barrow Reservoir; Blagdon Lake	2010	Natural England
Captan; Chlortoluron; Linuron; MCPB; Metazachlor	Re-direct existing CSF resource to address issue.	Draycote Water	2010	Natural England
Cryptosporidium	Address issue as priority action within this CSF catchment	Cheddar Reservoir	2010	Natural England
Cryptosporidium; Phosphate	Address issue as priority action within this CSF catchment	Chew Valley lake	2010	Natural England
Hazardous substances and non-hazardous pollutants; Priority Substances and	Promote the widescale use of sustainable drainage systems (SUDS) and provide guidance for	South East Valleys Catchment; Usk Catchment; Wye	2012	Welsh Assembly Government; Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Specific Pollutants	integrating development and water planning	Catchment		
MCPA; Mecoprop	Re-direct existing CSF resource to address issue.	Caban-coch Reservoir; Claerwen Reservoir	2010	Countryside Council for Wales
Nitrate	Address issue as priority action within this England Catchment Sensitive Farming Initiative catchment. Nitrates Action Programme in Nitrate Vulnerable Zones will help address high nitrate concentrations in drinking water abstractions	Blagdon Lake	2010	Natural England
Pesticides (total)	Re-direct existing CSF resource to address issue.	R Wye - conf R Irfon to Brewardine Br	2010	Natural England
Physical modification	Promote Code for Sustainable Homes (now mandatory Level 3 for all residential developments greater than 4 dwellings) and BREEAM standards in national planning policy in Wales	South East Valleys Catchment; Usk Catchment; Wye Catchment	Implemented	Welsh Assembly Government
Investigations				
Alien species	Seek sustainable and cost-effective methods for managing established invasions, such as biological control	Severn RBD	2012	Environment Agency; Central Government
Alien species	Undertake risk assessments to identify priority invasive species for mitigation and control action at GB	Severn RBD	2012	Central Government

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	and national levels			
Asulam; Atrazine; Dieldrin; Diuron; Isoproturon; Simazine	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	River Leam - conf R Itchen to conf R Avon	2010	Central Government; Environment Agency
Asulam; Atrazine; Diuron; Isoproturon; Simazine; Trifluralin	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	R Teme - conf R Onny to conf R Severn	2010	Central Government; Environment Agency
Asulam; Isoproturon	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	Caban-coch Reservoir; Claerwen Reservoir	2010	Central Government; Environment Agency
Atrazine; Diuron; Isoproturon; Simazine	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	R Axe-Stubbingham Rhyne to conf Brean Cross Sluice	2010	Central Government; Environment Agency
Atrazine; Isoproturon; Simazine	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures	R Severn - conf R Worfe to conf R Stour; R Wye - conf R Irfon to Brewardine	2010	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	should be required although surveillance monitoring will be done to confirm this	Br		
Carbetamide	Further monitoring to confirm risk of failure of WFD Article 7	R Wye - conf R Irfon to Brewardine Br; Draycote Water; R Severn - conf R Worfe to conf R Stour; River Leam - conf R Itchen to conf R Avon	2010	Environment Agency; Water companies
Diuron; Isoproturon; Simazine	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	R Frome - Slad Bk to R Severn	2010	Central Government; Environment Agency
Isoproturon	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	Barrow Reservoir	2010	Central Government; Environment Agency
Isoproturon; Simazine	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	Draycote Water	2010	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Natura 2000 and SSSI plans & programmes				
Direct biological pressures	Contribute to achievement of favourable condition on Frampton Pools SSSI by implementing invasive species control programme	Severn Vale Catchment	2010	Natural England
Direct biological pressures	Contribute to achievement of favourable condition on Maer Pool SSSI and River Teme SSSI by implementing agri-environment scheme	Shropshire Middle Severn Catchment; Teme Catchment	2012	Natural England
Direct biological pressures	Contribute to achievement of favourable condition on Newport Canal SSSI by implementing invasive species control programme	Shropshire Middle Severn Catchment	2010	Natural England
Direct biological pressures; Nutrients; Physical modification	Contribute to achievement of favourable condition on Marton Pool, Chirbury SSSI, Aqualate Mere SSSI, Fenemere SSSI, Sweat Mere and Crose Mere SSSI, White Mere SSSI, Bomere, Shomere and Betton Pools SSSI and Westwood Great Pool SSSI by implementing lake restoration project	Severn Uplands Catchment; Shropshire Middle Severn Catchment; Worcestershire Middle Severn Catchment	2012	Natural England; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Nutrients; Sediments (as a direct pollutant)	Contribute to achievement of favourable condition on Tickenham, Nailsea and Kenn Moors SSSI, Marton Pool, Chirbury SSSI, Montgomery Canal, Aston Locks - Keeper's Bridge SSSI, Fenemere SSSI, Sweat Mere and Crose Mere SSSI, White Mere SSSI, River Teme SSSI, Bomere, Shomere and Betton Pools SSSI, Puxton Moor SSSI, Aqualate Mere SSSI, Coombe Hill Canal SSSI, Westwood Great Pool SSSI and Maer Pool SSSI by developing a pollution action plan	Bristol Avon & North Somerset Streams Catchment; Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Worcestershire Middle Severn Catchment	2012	Natural England; Environment Agency; Water companies
Physical modification	Contribute to achievement of favourable condition on Puxton Moor SSSI by implementing SSSI management agreement	Bristol Avon & North Somerset Streams Catchment	2012	Natural England
Physical modification	Contribute to achievement of favourable condition on Tickenham, Nailsea and Kenn Moors SSSI and River Teme SSSI by implementing agri-environment scheme	Bristol Avon & North Somerset Streams Catchment; Teme Catchment	2010	Natural England
Sediments (as a direct pollutant); Physical modification; Abstraction and other artificial flow pressures	Contribute to achievement of favourable condition on Gordano Valley SSSI and Aqualate Mere SSSI by undertaking specific management works	Bristol Avon & North Somerset Streams Catchment; Shropshire Middle Severn Catchment	Implemented	Natural England; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction and other artificial flow pressures; direct biological pressures; microbiology; nutrients; organic pollutants; physical modification; Priority Hazardous Substances; Priority Substances and Specific Pollutants; sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through land management schemes (see below and Annex D)	Severn RBD	2012	Countryside Council for Wales; Environment Agency
Abstraction and other artificial flow pressures; direct biological pressures; microbiology; nutrients; organic pollutants; physical modification; Priority Hazardous Substances; Priority Substances and Specific Pollutants; sediments (as a direct pollutant)	Target land management measures through Glastir agri-environment scheme and Section 15 agreements to mitigate diffuse pollution from agriculture and reduce impact of drainage to enhance biodiversity and achieve favourable conservation status. These measures will include, but are not limited to: Fencing watercourses where cattle are part of the farm enterprise; Improving crossing points for streams and ditches; Culverting gateways where appropriate; Separating clean and dirty water in farmyards, raising water levels and changing drainage regimes	Targeted at catchments and sub-catchments that contribute to the failure of environmental objectives.	2012	Countryside Council for Wales; Welsh Assembly Government

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; organic pollutants; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through licences/consents (see Annex D)	Severn RBD	2012	Countryside Council for Wales; Environment Agency
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through other competent authority functions (see Annex D)	Severn RBD	2012	British Waterways; Countryside Council for Wales; Environment Agency; Forestry Commission Wales; Local Authorities
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through specific habitats works (see Annex D)	Severn RBD	2012	British Waterways; Countryside Council for Wales; Defence Estates; Environment Agency; Local Authorities; National Parks; National Trust; RSPB; Water companies; Welsh Assembly Government; Wildlife Trusts
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through CCW National Nature Reserve Management (see Annex D)	Severn RBD	2012	Countryside Council for Wales

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction and other artificial flow pressures; direct biological pressures; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through enforcement (see Annex D)	Severn RBD	2012	Countryside Council for Wales; Environment Agency; Police
Abstraction and other artificial flow pressures; physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through undertaking a remediation programme for flood risk and drainage impacts (see Annex D)	Severn RBD	2012	Environment Agency; Local Authorities; Welsh Assembly Government
Abstraction and other artificial flow pressures; Sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by change of operational practice to address drainage and siltation pressures (See Annex D)	Severn RBD	2010	Central Government
Alien species	Eradication and control at selected SSSIs and Natura 2000 sites	Severn RBD	2012	Natural England
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)	Severn RBD	2012	Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Sediments (as a direct pollutant); Nutrients; Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by undertaking specific management works to address hydrology and water quality pressures (See Annex D)	Severn RBD	2010	Natural England
Sediments (as a direct pollutant); 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 SSSI management agreement to address hydrology, morphology and water quality pressures (See Annex D)	Severn RBD	2010	Natural England
Sediments (as a direct pollutant); Physical modification; Nutrients	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through England Catchment Sensitive Farming Initiative to address water quality pressures (See Annex D)	Severn RBD	2010	Natural England
Investigations - Natura 2000 plans & programmes				
Abstraction and other artificial flow pressures; Physical modification; Sediments (as a direct pollutant); Nutrients	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through investigations to address water quality, invasive species and	Severn RBD	2010	Natural England; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	hydrology pressures (See Annex D)			
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; Priority Hazardous Substances; Priority Substances and Specific Pollutants; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through investigation and monitoring (see Annex D)	Severn RBD	2012	Countryside Council for Wales; Environment Agency

C.7 Environment Agency

The Environment Agency was established by the 1995 Environment Act and became fully operational on 1 April 1996. The 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 Agency as a whole and the Agency is accountable to the Secretary of State for its day to day operations in England.

The 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 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, Waste Management, Water Quality, Land Quality, Water Resources, Conservation, Recreation, Fisheries, Flood Risk Management, Navigation and Radioactive Substances Regulation.

The Severn river basin district covers parts of three Environment Agency Regions (Midlands, South West and Environment Agency Wales) and four Areas. Regions and Areas ensure national priorities are delivered at a local level while taking account of the needs of local communities and stakeholders. The Environment Agency's Head Office is responsible for corporate management of the 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	
Abstraction	Availability of grants for construction of irrigation and industrial supply reservoirs	Severn RBD	Implemented	Regional Development Agencies; Welsh Assembly Government
Abstraction	Encourage farmers and Industry to build storage reservoirs to support or replace summer irrigation	Severn RBD	Implemented	Industry; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction	Provide guidance and training in irrigation best practice including auditing, benchmarking and scheduling	Severn RBD	Implemented	Environment Agency; UK Irrigation Association
Abstraction	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	Severn RBD	Implemented	Environment Agency; Regional Development Agencies; Water companies
Abstraction	Schools based education and awareness campaigns for sustainable water use. E.g. Severn Trent Water led project in partnership with the Environment Agency to educate and install water saving equipment in schools in Telford & Wrekin, Worcestershire and Coventry local authority areas	Severn RBD	Implemented	Water companies; Environment Agency
Acidification	Reduce local impacts of acidification by continuing long term programme of lime dosing and investigations on the rivers Twrch, Banwy, Trannon, Clywedog, Gam	Severn Uplands Catchment	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Acidification; Habitat manipulation (restoration/improvement); Physical modification	EU Life + project (ISAC) to reduce the pressures from acidification through removal of trees and catchment liming. Wetland restoration and habitat improvements to support SAC species including salmon, freshwater pearl mussels and native white-clawed crayfish	R Irfon - source to conf Afon Gwesyn; R Irfon - conf Afon Gwesyn to conf Cledan; R Irfon - conf Tirabad Dulas to conf R Wye; R Irfon - conf Cledan to conf Tirabad Dulas	2010	Wye and Usk Foundation; Environment Agency Wales; Countryside Council for Wales; Forestry Commission Wales
Acidification; Physical modification	EU Fisheries Fund project to reduce local impacts of acidification by continuing long term programme of catchment liming, easements for fish passage and habitat restoration	Severn Uplands Catchment; Usk Catchment; Wye Catchment	Implemented	Wye and Usk Foundation; Environment Agency; Countryside Council for Wales; Natural England
Acidification; Sediments (as a direct pollutant)	Influencing and education campaign working with Forest Enterprise, including harvesting techniques, replanting plans and buffer strips to reduce the impact of forestry on water quality River Severn (Hafren Forest). Riparian management of approx 60km of forest streams and river banks	Severn Uplands Catchment	Implemented	Environment Agency; Forestry Commission Wales
Alien species	Develop and implement codes of practice to reduce the spread of invasive non-native species	Severn RBD	2012	Central Government; Environment Agency
Alien species	Draw up Individual Species Action Plans for species identified as	Severn RBD	2012	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	presenting particular risk levels, to minimise the risks associated with them			
Alien species	Integrate invasive non-native species control measures across all policy areas	Severn RBD	2012	Environment Agency; Central Government
Alien species	Make appropriate use of existing legislative powers e.g. 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)	Severn RBD	2012	Central Government; Environment Agency
Alien species	Provide advice and training on identification, control and disposal of invasive non-native species to all relevant groups and encourage monitoring schemes	Severn RBD	2012	Environment Agency; Central Government
Alien species	Reduction of extent of invasive non-native species by operations	Severn RBD	2012	Environment Agency
Alien species	Support established local fora by providing advice and guidance and support control actions by selected local fora	Severn RBD	2012	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Alien species	Support the all Wales and establish Severn RBD invasive non-native species fora to coordinate priorities and implement control measures	Severn RBD	2012	Wales Biodiversity Partnership; 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	Severn RBD	2010	Central Government
Alien species; Habitat manipulation (restoration/improvement)	"Giving up the Weed" project - Control & eradication of invasive weeds (Giant Hogweed, Japanese Knotweed, Himalayan Balsam). Eradication of signal crayfish, habitat restoration and release of native white-clawed crayfish	Usk Catchment; Wye Catchment	Implemented	Wye and Usk Foundation; Countryside Council for Wales; Environment Agency; Keep Wales Tidy
Alien species; Habitat manipulation (restoration/improvement); Physical modification	Severn Rivers Trust project to reduce overshading, remove and control invasive weed species, improve habitat and natural fish recruitment. Mitigate Phytophthora disease, increase biodiversity and access opportunities	Teme Catchment	2010	Severn Rivers Trust; Environment Agency; Natural England
Biota removal (including commercial fish take and weed control)	Achieve 40% escapement of silver eels and sustainable elver exploitation - Eel Management Plans	Severn RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Biota removal (including commercial fish take and weed control)	Closure of the Goldcliff Putter Ranks in the Severn Estuary	SEVERN LOWER	Implemented	Environment Agency
Biota removal (including commercial fish take and weed control)	Develop Angling Participation Initiatives	South East Valleys Catchment	Implemented	South East Wales Rivers Trust; Environment Agency Wales
Biota removal (including commercial fish take and weed control)	Encourage catch and release of salmon through incentives and education	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Worcestershire Middle Severn Catchment	Implemented	Environment Agency
Biota removal (including commercial fish take and weed control)	Enforcement of netting byelaws and controls on illegal fishing in the Severn Estuary	SEVERN LOWER; SEVERN MIDDLE ; SEVERN UPPER	Implemented	Environment Agency
Biota removal (including commercial fish take and weed control)	Enforcement of rod fishing byelaws in the Severn Estuary, including illegal fishing and buyer beware campaigns including restaurant visits	SEVERN LOWER; SEVERN MIDDLE ; SEVERN UPPER	Implemented	Environment Agency
Biota removal (including commercial fish take and weed control)	Implementation of new fisheries legislation to seek closure if required of mixed stocked salmon fisheries in the Severn Estuary, currently protected under historic Certificate of Privilege	SEVERN MIDDLE ; SEVERN UPPER	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Biota removal (including commercial fish take and weed control)	Improve access for fish and habitat quality on the rivers Arrow and Lugg	Wye Catchment	2012	Environment Agency
Biota removal (including commercial fish take and weed control)	Improve access for salmonid migration	South East Valleys Catchment; Usk Catchment; Wye Catchment	2012	Environment Agency
Biota removal (including commercial fish take and weed control)	Improve fisheries infrastructure on prioritised, audited fisheries	South East Valleys Catchment	Implemented	Environment Agency Wales; South East Wales Rivers Trust
Biota removal (including commercial fish take and weed control)	Improve habitat for spawning and juvenile production	South East Valleys Catchment; Wye Catchment	Implemented	Environment Agency Wales
Biota removal (including commercial fish take and weed control)	Introduction of measures to reduce exploitation on Salmon Action Plan rivers in the 'at risk' category	South East Valleys Catchment; Wye Catchment	2010	Environment Agency
Biota removal (including commercial fish take and weed control)	Promotion of traditional methods of Fixed Engine construction and operation in conjunction with Severn Netsmen Association to help manage exploitation in the Severn Estuary	SEVERN MIDDLE ; SEVERN UPPER	Implemented	Severn Netsman Association
Biota removal (including commercial fish take and weed control)	Reduce illegal eel and elver fishing in estuaries, rivers and stillwaters	Severn RBD	2010	Environment Agency
Biota removal (including commercial fish take and weed control)	Reduce illegal fishing on estuaries, rivers and stillwaters	Severn RBD	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Biota removal (including commercial fish take and weed control)	Renewal of Wye specific byelaws to ban bait fishing on river	Wye Catchment	Implemented	Environment Agency
Chemicals - sheep dip	Reduce impact from sheep dip by education and liaison with farmers at local level to encourage best practice in use of sheep dip and other pesticides	Severn Uplands Catchment; Usk Catchment; Wye Catchment	Implemented	Environment Agency
Direct biological pressures; Physical modification	Deliver the Sustainable Fisheries Programme Coarse Habitat Project in Wales	Severn RBD	2010	Environment Agency Wales
Direct biological pressures; Physical modification	Deliver the Sustainable Fisheries Programme for migratory salmonid habitat restoration in Wales	Severn RBD	2010	Environment Agency Wales
Direct biological pressures; Physical modification	Deliver the Sustainable Fisheries Programme Trout Habitat Project in Wales	Severn RBD	2010	Environment Agency Wales
Direct biological pressures; Physical modification	Deliver the Wild Fishing Wales Project	Severn RBD	2010	Environment Agency Wales; Rivers Trusts; Countryside Council for Wales; Angling Associations; Land managers and owners
Fish stocking (including disease and predation)	Audit high-risk fish movements and enforce against illegal activity	Severn RBD	Implemented	Environment Agency
Fish stocking (including disease and predation)	Implement brown trout stocking programme in the Taf Fechan following 2006 pollution incident	Taf Fechan - source to conf Afon Taf Fawr	Implemented	Merthyr Tydfil Angling Association; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Fish stocking (including disease and predation)	Mitigation and rehabilitation stocking of salmon from Clywedog Hatchery	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Worcestershire Middle Severn Catchment	Implemented	Environment Agency
Fish stocking (including disease and predation)	Undertake salmon in schools project to raise local awareness of salmon lifecycle and habitat impacts	Severn Uplands Catchment; Severn Vale Catchment	Implemented	Environment Agency
Fish stocking (including disease and predation)	Undertake salmon stocking in catchment to mitigate for the Cardiff Bay Barrage	South East Valleys Catchment	Implemented	Environment Agency
Habitat Manipulation (restoration/improvement)	Deliver improvements to riparian habitat, reduce the impact of alien species and promote community involvement on the Bristol Avon and River Frome through the Avon Frome Partnership (Bristol CC, Bath & North East Somerset Council, South Glos. Council and Environment Agency)	Bristol Avon & North Somerset Streams Catchment	2012	Local Authorities; Environment Agency
Habitat manipulation (restoration/improvement); Physical modification; Nutrients; Sediment (as direct pollutant)	Fish passage and habitat restoration projects including Lugg and River Arrow project (LARA) to reduce physical modification and diffuse pollution through practical actions such as	Wye Catchment	Implemented	Wye and Usk Foundation; Environment Agency Wales; Environmental NGOs

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	fencing and buffer strips and removal of obstruction to fish passage			
Microbiology; Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Establish Strategic Partnership Catchment in the Upper Warwickshire Avon (incl. Leam) river catchment which is at risk from agricultural diffuse water pollution and not currently covered by the England Catchment Sensitive Farming Initiative. The Strategic Partnership Areas are to benefit from further funding in order to reduce diffuse water pollution from agriculture	Warwickshire Avon Catchment	Implemented	Natural England; Defra; Environment Agency; Severn Trent Water
Nitrate	Address drinking water abstraction through Nitrates Action Programme in Nitrates Vulnerable Zone	River Leam - conf R Itchen to conf R Avon	2010	Environment Agency
Nitrate; Sediments as a direct pollutant; Organic pollutants; Faecal indicator organisms; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Phosphate	Establish and maintain a nationally (Wales) funded advice-led programme under the Environment Agency Wales Catchment Initiatives to influence land management to bring about changes in practice that are likely to impact on water quality and	Severn Uplands Catchment; Usk Catchment; Wye Catchment	2012	Environment Agency Wales

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	achieve multiple outcomes – integrating diffuse pollution mitigation with habitat creation, localised flood risk and fisheries issues			
Nutrients	Tackle eutrophication problems in Bittell Reservoirs caused by diffuse inputs of nutrients by undertaking partnership project to implement solutions	Warwickshire Avon Catchment	Implemented	Environment Agency; British Waterways
Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Microbiology	Establish Strategic Partnership Catchments in the Upper Severn Brooks (incl. Dowles/Wyre Forest) river catchments at risk from agricultural diffuse water pollution and not currently covered by the England Catchment Sensitive Farming Initiative. The Strategic Partnership Areas are to benefit from further funding in order to reduce diffuse water pollution from agriculture	Severn Uplands Catchment; Shropshire Middle Severn Catchment; Worcestershire Middle Severn Catchment	2010	Defra; Environment Agency; Natural England
Organic pollutants	Development of a strategic approach to addressing the impact of diffuse pollution through education and awareness campaigns	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Warwickshire Avon Catchment;	2012	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
		Worcestershire Middle Severn Catchment		
Organic pollutants	Development of a strategic approach to catchment management and the impact of climate change in partnership with water companies	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Warwickshire Avon Catchment; Worcestershire Middle Severn Catchment	2012	Environment Agency; Water companies
Organic pollutants	Reduce the impact from diffuse organic pollution through a better understanding of source apportionment	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Warwickshire Avon Catchment; Worcestershire Middle Severn Catchment	2012	Water companies; Environment Agency
Organic pollutants; Chemicals - Specific pollutants	Reduce pollution through campaign on local industrial estate draining to River Swilgate	R Swilgate - source to conf R Avon	2010	Environment Agency
Organic pollutants; Chemicals - Specific pollutants	Reduce pollution through campaigns on industrial estates. Look at recent pollution incidents and sources to target pollution reduction activity	South East Valleys Catchment; Usk Catchment; Wye Catchment	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Facilitate the setting up of new River Flylife Partnerships and provide guidance to those groups once they are up and running	South East Valleys Catchment; Usk Catchment; Wye Catchment	Implemented	Environment Agency
Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Improve detection of pollution incidents by using River Flylife partnerships to have more frequent monitoring of river macroinvertebrates	South East Valleys Catchment; Wye Catchment	Implemented	Environment Agency
Pesticides; Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone	R Severn - conf R Teme to conf R Avon; 'Draycote Water; 'R Teme - conf R Onny to conf R Severn	2010	Environment Agency
Physical modification	Consent to and follow best practice in all dredging activities within the River Severn during key salmon migration periods i.e. April to September	Severn Vale Catchment; Shropshire Middle Severn Catchment; Worcestershire Middle Severn Catchment	Implemented	Environment Agency; British Waterways
Physical modification	Deliver the Salmon for Tomorrow Project in Wales	Severn RBD	2010	Environment Agency Wales
Physical modification	Develop and deliver a comprehensive programme of improvements to or removal of Environment Agency owned weirs which are the most significant physical barriers to fish passage. The best solution will be identified on a site by site basis	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; South East Valleys Catchment; Usk Catchment; Warwickshire Avon Catchment; Worcestershire Middle	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
		Severn Catchment; Wye Catchment		
Physical modification	Flood/Coastal Erosion Risk Management Measure - Alteration of channel bed (within culvert)	Broadway Reen - source to R Severn Estuary	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Appropriate channel maintenance strategies and techniques e.g. minimise disturbance to channel bed and margins	Broadway Reen - source to R Severn Estuary; Ebbw R - conf Ebbw Fach R to Maes-glas	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Appropriate techniques (invasive species)	Rhosog Fach Reen - source to Seven Estuary	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Appropriate techniques to align and attenuate flow to limit detrimental effects of these features (drainage)	Broadway Reen - source to R Severn Estuary	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Appropriate water level management strategies, including timing and volume of water moved	Broadway Reen - source to R Severn Estuary	2011	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	Flood/Coastal Erosion Risk Management Measure - Bank rehabilitation / reprofiling	R Severn - conf Afon Dulas to conf R Camlad	2027	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Bank rehabilitation / reprofiling	Afon Vyrnwy - conf Afon Tanat to conf R Severn; Broadway Reen - source to R Severn Estuary; Ebbw R - conf Ebbw Fach R to Maes-glas; R Severn - conf Bele Bk to conf Sundorne Bk; Rhosog Fach Reen - source to Seven Estuary; SEVERN LOWER	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Flood bunds (earth banks) (in place of floodwalls)	Rhosog Fach Reen - source to Seven Estuary	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Flow manipulation (e.g. construct structures to normalise flow; realign frontage)	Broadway Reen - source to R Severn Estuary	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Improve floodplain connectivity	Afon Vyrnwy - conf Afon Tanat to conf R Severn	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Increase in-channel morphological diversity	Afon Vyrnwy - conf Afon Tanat to conf R Severn	2011	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	Flood/Coastal Erosion Risk Management Measure - Operational and structural changes to locks, sluices, weirs, beach control, etc	Afon Vyrnwy - conf Afon Tanat to conf R Severn; R Severn - conf Bele Bk to conf Sundorne Bk; SEVERN LOWER	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	Broadway Reen - source to R Severn Estuary; Ebbw R - conf Ebbw Fach R to Maes-glas	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	Afon Vyrnwy - conf Afon Tanat to conf R Severn; Broadway Reen - source to R Severn Estuary; Ebbw R - conf Ebbw Fach R to Maes-glas; Rhosog Fach Reen - source to Seven Estuary	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Preserve and, where possible, restore historic aquatic habitats	Broadway Reen - source to R Severn Estuary; Ebbw R - conf Ebbw Fach R to Maes-glas	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Remove obsolete structure	Afon Vyrnwy - conf Afon Tanat to conf R Severn	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Re-opening existing culverts	SEVERN LOWER	2011	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	Flood/Coastal Erosion Risk Management Measure - Retain marginal aquatic and riparian habitats (channel alteration)	Broadway Reen - source to R Severn Estuary; Ebbw R - conf Ebbw Fach R to Maes-glas	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Set-back embankments (a type of managed retreat)	Afon Vyrnwy - conf Afon Tanat to conf R Severn; Rhosog Fach Reen - source to Seven Estuary	2011	Environment Agency
Physical modification	Habitat assessment of River Leadon to identify areas for future improvements for salmonids	Severn Vale Catchment	2010	Environment Agency
Physical modification	Habitat management work to improve eel habitats - use Environment Agency consenting of works to improve habitats	Severn RBD	2012	Farmers; Environment Agency
Physical modification	Habitat Management Work to improve trout habitats through tree management	Teme Catchment	Implemented	Environment Agency
Physical modification	Improve eel passage at Blackweir on the River Taff (Cardiff Bay)	Cardiff Bay	Implemented	Environment Agency; Cardiff Harbour Authority
Physical modification	Improvements to debris deflector at Brampton Weir fish pass on the River Teme	Teme Catchment	Implemented	Environment Agency
Physical modification	Improvements to eel passage on Ripple Brook through design and installation of fish friendly flap gate	Ripple Bk - source to conf R Severn	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	Maintain and improve eel passage at identified obstructions on Severn, Wye, Usk, Taff and Lyd	Severn RBD	2011	Environment Agency
Physical modification	Produce costed feasibilities to influence improved fish passage at Diglis, Bevere, Holt, Lincomb weirs on the River Severn navigation with particular reference to Shad if legislative or other opportunities arise	Severn Vale Catchment; Worcestershire Middle Severn Catchment	2012	Environment Agency; Local Authorities; Natural England; British Waterways
Physical modification	Produce plan of priority actions for easing passage for eels and elvers taking account of availability of upstream habitat	Severn RBD	2010	Environment Agency
Physical modification	Produce plans with costs and potential timescales for implementation of Shad passage at Powick Weir	Teme Catchment	2012	Environment Agency; Local Authorities; Natural England
Physical modification	Provision of best practice advice and guidance to riparian owners to reduce the impact of aggregate extraction from Rivers Wye and Usk Special Areas of Conservation in Wales through the River Aggregates Sustainability Project (RASP).	Usk Catchment; Wye Catchment	Implemented	Countryside Council for Wales; Environment Agency Wales; Environmental NGOs; Wye and Usk Foundation
Physical modification	Reduce physical modification by embedding Water Framework	Severn RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	Directive objectives in current water body management and maintenance procedures			
Physical modification	Reduce physical modification by encouraging better application of guidelines for managing drainage channels with biodiversity in mind, and educating as to best practice (The Drainage Channel Biodiversity Manual)	Severn RBD	2012	Environment Agency; Internal Drainage Boards
Physical modification	Reduce physical modification by promoting use of soft engineering where appropriate to create bank stability	Severn RBD	2012	Environment Agency
Physical modification	Reduce physical modification by reviewing redundant flood defence structures and identifying where modification, mitigation or removal may be appropriate	Severn RBD	2012	Environment Agency
Physical modification	Reduce physical modification by undertaking modification, mitigation or removal of redundant flood defence structures where appropriate	Severn RBD	2012	Environment Agency
Physical modification	Seek Partnership with British Waterways to highlight issue of delayed salmon migration caused by navigation weirs and develop plan to improve fish passage as	Severn Vale Catchment; Worcestershire Middle Severn Catchment	2012	British Waterways; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	part of maintenance regime			
Physical modification	Undertake habitat improvements and water level management where eel habitats are directly impacted by land use activities.	Severn RBD	2010	Environment Agency; Farmers
Physical modification	Undertake improvement works at Ledbury Weir to ease fish passage	R Leadon - source to conf Preston Bk	2010	Environment Agency
Physical modification	Use Environment Agency consenting of works to improve eel habitat	Severn RBD	Implemented	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 results in minimal ecological damage	Severn RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	Work with aggregate companies to provide greater channel and flood plain diversity, off stream fish refuges and fry habitat on completion of extraction, for example with CEMEX at Ripple sand and gravel quarries on the River Severn	R Severn - conf R Teme to conf R Avon	2012	Worcestershire CC; Environment Agency; CEMEX
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Enforce REACH Annex 17 restrictions	Severn RBD	Implemented	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 pollutants through NetRegs website	Severn RBD	2012	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Nutrients; Sediments (as a direct pollutant)	Address land management and diffuse pollution issues through a series of farm visits and awareness campaigns and education targeted at land owners located within the 75 waterbodies rated as having the greatest environmental impact	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Warwickshire Avon Catchment; Worcestershire Middle Severn Catchment	2012	Environment Agency

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; Organic pollutants; Nutrients	Operation Streamclean, a partnership project to identify and correct sewerage misconnections at domestic properties	Bristol Avon & North Somerset Streams Catchment	Implemented	Bristol City Council; Environment Agency; Wessex Water
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants; Nutrients; Abstraction	Protect and seek improvements to the water environment through local authority Water Cycle Studies (includes Surface Water Management Plans)	Severn RBD	2010	Environment Agency; Local Authorities
Sediment (as direct pollutant)	Bankside protection work to aid riparian habitat recovery, includes fencing off to reduce poaching	R Teme - source to conf Ffwdwen Bk to conf R Clun	2010	Environment Agency
Sediment (as direct pollutant)	Installation of in-stream deflectors and riparian habitat works to improve flow and morphology of river	R Leadon - source to conf Preston Bk	Implemented	Environment Agency
Sediments (as a direct pollutant); Habitat Manipulation (restoration/improvement); Nitrate; Phosphate	Promote land use change in the River Isbourne catchment to deliver flood risk and environmental benefits	Warwickshire Avon Catchment	Implemented	Natural England; Environment Agency; Environmental NGOs
Investigations				
Abstraction	Investigate opportunities for retrieving un-used abstraction licences and or downward variations	Shropshire Middle Severn Catchment	Implemented	Environment Agency
Abstraction	Investigate revoking licences that have not been used in the last seven years or 4 years if not	Severn Vale Catchment; Warwickshire Avon Catchment	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	used since 2003 (Water Act)			
Abstraction and other artificial flow pressures	Improve flow estimates for surface water bodies	Severn RBD	2012	Environment Agency
Abstraction and other artificial flow pressures	Investigations at sites identified under the Restoring Sustainable Abstraction Programme	Severn RBD	2012	Environment Agency
Abstraction and other artificial flow pressures	Review and improve Environmental Flow Indicators	Severn RBD	2012	Environment Agency
Acidification; Microbiology; Nutrients; Organic pollutants; Physical modification; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Undertake investigations to better understand problems in waterbodies where extended deadlines have been put in place and identify actions to resolve them where possible	Severn RBD	Implemented	Environment Agency
Alien species	Seek sustainable and cost-effective methods for managing established invasions, such as biological control	Severn RBD	2012	Environment Agency; Central Government
Alien species	Survey work to update knowledge of invasive non-native crayfish distribution implemented in conjunction with the South West White-Clawed Crayfish Conservation Project	Bristol Avon & North Somerset Streams Catchment	Implemented	Environment Agency
Ammonia; Colour	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-	R Severn - conf R Worfe to conf R Stour	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	year catchment action plan can be considered			
Biota removal (including commercial fish take and weed control)	Assess habitat and obstructions to fish migration to identify opportunities for river enhancements	South East Valleys Catchment	Implemented	Fisheries and Angling Interests; South East Wales Rivers Trust; Environment Agency Wales
Biota removal (including commercial fish take and weed control)	Investigate sources of siltation and impacts on survival of salmon embryos in rivers Lugg and Arrow	Usk Catchment; Wye Catchment	2012	Environment Agency
Biota removal (including commercial fish take and weed control)	Weekly examination of trash screens at Oldbury Power Station on the Severn Estuary to quantify smolt and shad mortality	SEVERN MIDDLE	Implemented	Environment Agency
Chemicals - Specific pollutants; Nutrients; Organic pollutants	Improve understanding of sources of pollution on the Morlais Brook (Merthyr) by carrying out detailed investigation of sewerage system and CSOs and quantifying impacts from each on water quality, aesthetic and ecological quality	Nant Morlais - source to conf R Taff; South East Valleys Catchment	Implemented	Environment Agency; Dwr Cymru
Chemicals - Specific pollutants; Organic pollutants	Attempt to identify misconceptions, overflows and hydraulically overloaded sewers. Sources of information could include Severn Trent Water's GIS drainage network, the Environment Agencies pluvial	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Warwickshire Avon Catchment; Worcestershire Middle	2012	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	flooding database and local authority GIS layers	Severn Catchment		
Chemicals - Specific pollutants; Physical modification; Sediments (as a direct pollutant)	Assess mineral restoration schemes for potential for delivering Water Framework Directive benefits including revenue and funding streams from the Aggregate Levy Sustainability Fund, Landfill Tax and waste levies for restoration research and possible schemes	Severn RBD	2010	Local Authorities; Natural England; Land managers and owners; Environmental NGOs; Environment Agency
Chemicals - sheep dip	Reduce impacts from sheep dip by implementing a strategic approach to gathering evidence on sheep dip usage and disposal of waste dip. Target mobile dippers and farms that are purchasing sheep dip and do not hold a groundwater authorisation for disposal	Usk Catchment; Wye Catchment	Implemented	Environment Agency
Chemicals - sheep dip	Reduce impacts from sheep dip by using sheep dip survey work to target Environment Agency pollution prevention visits	Severn Uplands Catchment; Usk Catchment; Wye Catchment	Implemented	Environment Agency
Colour	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can	Draycote Water	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	be considered			
Direct biological pressures	Improve salmon stock run assessment through deployment of counters on Rivers Severn and Teme	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Worcestershire Middle Severn Catchment	2010	Environment Agency
Direct biological pressures	Improve salmon stock run assessment, through operation of anglers catch card scheme	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Worcestershire Middle Severn Catchment	Implemented	Environment Agency
Fish stocking (including disease and predation)	Monitoring parasites and diseases in the wild to prevent collapse of fish communities and detriment to status	Severn RBD	Implemented	CEFAS
Organic pollutants	Identify intermittent polluting discharges from industrial premises in the South East Valleys catchment	R Taff - conf Rhondda R to Castle Street	Implemented	Environment Agency
Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Monitor the recovery of the Taf Fechan following the 2006 pollution incident	Taf Fechan - source to conf Afon Taf Fawr; South East Valleys Catchment	Implemented	Environment Agency; Merthyr Tydfil Angling Association

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Pesticides; Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone. Water industry catchment investigation to establish source of pollutant	River Leam - conf R Itchen to conf R Avon; 'R Severn - conf R Worfe to conf R Stour	2010	Environment Agency
Physical modification	Assess eel populations in the Caldicot and Wentlooge Reen system	South East Valleys Catchment; Usk Catchment; Wye Catchment	Implemented	Environment Agency
Physical modification	Continue to monitor effectiveness of eel passes	Severn RBD	2012	Environment Agency
Physical modification	Investigate feasibility of re-aligning flood defences at Slimbridge on the Severn Estuary to create inter-tidal and freshwater habitat	SEVERN MIDDLE	Implemented	Environment Agency; Environmental NGOs
Physical modification	Investigate new solution for building improved fish passage at Blakeney weir	Blackpool Bk - source to conf Cinderford Bk	2012	Awre Parish Council
Physical modification	Investigate opportunities for improved habitat connectivity through flood defences by managed re-alignment or changes to flap gate design or operation	SEVERN LOWER; SEVERN MIDDLE ; SEVERN UPPER; Severn Vale Catchment; Worcestershire Middle Severn Catchment	2010	Environment Agency; Internal Drainage Boards
Physical modification	Investigate the installation of elver passes on tilting weirs	Severn RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	Investigations into the ecological outcomes of measures to mitigate against effects of 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	Severn RBD	2010	Environment Agency
Physical modification; Abstraction and other artificial flow pressures; Nutrients; Organic pollutants; Sediments (as a direct pollutant)	Investigation into reasons for diatom and fish failures	Bristol Avon & North Somerset Streams Catchment	2012	Environment Agency
Physical modification; Biota removal (including commercial fish take and weed control)	Survey work to quantify eel population dynamics	Severn RBD	Implemented	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Investigate discharges from abandoned metal mines and prioritise sites for inclusion in Head Office agreement with metal mine partner organisations for the following substances as appropriate: copper (total dissolved) ug/l(hardness0-50), lead and its compounds, zinc (total dissolved) ug/l	Severn Uplands Catchment; Shropshire Middle Severn Catchment; Teme Catchment	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Sediments (as a direct pollutant)	Improve evidence base for sediments by identifying and using available sources of data, e.g. from Highways Agency to identify hot spots	Usk Catchment; Wye Catchment	2010	Environment Agency
Sediments (as a direct pollutant)	Improve understanding of the origins of and solution to diffuse pollution by carrying out local investigations	Usk Catchment; Wye Catchment	Implemented	Environment Agency
Sediments (as a direct pollutant)	Investigation into the cause of sediment impact	Severn RBD	2012	Environment Agency
Sediments (as a direct pollutant); Organic pollutants; Nutrients	Investigate removal localised pollution caused at Taff-Nant Clydach by inadequate septic tank shared by a number of properties by installation of a new sewer	South East Valleys Catchment	2012	Environment Agency; Dwr Cymru
Natura 2000 and SSSI plans & programmes				
Abstraction and other artificial flow pressures	Contribute to achievement of favourable condition on Aqualate Mere SSSI by revoking or amending abstraction licences	Shropshire Middle Severn Catchment	2012	Environment Agency
Abstraction and other artificial flow pressures; Physical modification	Contribute to achievement of favourable condition on Biddle Street, Yatton SSSI, Puxton Moor SSSI and Tickenham, Nailsea and Kenn Moors SSSI by implementing water level	Bristol Avon & North Somerset Streams Catchment	2010	Environment Agency; North Somerset Internal Drainage Board; West Mendip Internal Drainage Board

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	management plans			
Direct biological pressures; Nutrients; Physical modification	Contribute to achievement of favourable condition on Marton Pool, Chirbury SSSI, Aqualate Mere SSSI, Fenemere SSSI, Sweat Mere and Crose Mere SSSI, White Mere SSSI, Bomere, Shomere and Betton Pools SSSI and Westwood Great Pool SSSI by implementing lake restoration project	Severn Uplands Catchment; Shropshire Middle Severn Catchment; Worcestershire Middle Severn Catchment	2012	Natural England; Environment Agency
Nutrients	Contribute to achievement of favourable condition on the Aqualate Mere SSSI and River Teme SSSI by revoking or amending discharge consents	Shropshire Middle Severn Catchment; Teme Catchment	2010	Environment Agency
Nutrients; Sediments (as a direct pollutant)	Contribute to achievement of favourable condition on Tickenham, Nailsea and Kenn Moors SSSI, Marton Pool, Chirbury SSSI, Montgomery Canal, Aston Locks - Keeper's Bridge SSSI, Fenemere SSSI, Sweat Mere and Crose Mere SSSI, White Mere SSSI, River Teme SSSI, Bomere, Shomere and Betton Pools SSSI, Puxton Moor SSSI, Aqualate Mere SSSI, Coombe Hill Canal SSSI,	Bristol Avon & North Somerset Streams Catchment; Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Worcestershire Middle Severn Catchment	2012	Natural England; Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	Westwood Great Pool SSSI and Maer Pool SSSI by developing a pollution action plan			
Sediments (as a direct pollutant)	Contribute to achievement of favourable condition on Aqualate Mere SSSI by land drainage consent	Shropshire Middle Severn Catchment	Implemented	Environment Agency
Sediments (as a direct pollutant); Physical modification; Abstraction and other artificial flow pressures	Contribute to achievement of favourable condition on Gordano Valley SSSI and Aqualate Mere SSSI by undertaking specific management works	Bristol Avon & North Somerset Streams Catchment; Shropshire Middle Severn Catchment	Implemented	Natural England; Environment Agency
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; organic pollutants; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through licences/consents (see Annex D)	Severn RBD	2012	Countryside Council for Wales, Environment Agency
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; organic pollutants; physical modification; sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through undertaking review of consents (see Annex D)	Severn RBD	2012	British Waterways, Environment Agency, Local Authorities, National Parks
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through other competent authority functions (see Annex D)	Severn RBD	2012	British Waterways, Countryside Council for Wales, Environment Agency, Forestry Commission Wales, Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through specific habitats works (see Annex D)	Severn RBD	2012	British Waterways, Countryside Council for Wales, Defence Estates, Environment Agency, Local Authorities, National Parks, National Trust, RSPB, Water companies, Welsh Assembly Government, Wildlife Trusts
Abstraction and other artificial flow pressures; direct biological pressures; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through enforcement (see Annex D)	Severn RBD	2012	Countryside Council for Wales, Environment Agency, Police
Abstraction and other artificial flow pressures; physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through undertaking a remediation programme for flood risk and drainage impacts (see Annex D)	Severn RBD	2012	Environment Agency, Local Authorities, Welsh Assembly Government
Direct biological pressures	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through invasive species control programme to address invasive species pressures (See Annex D)	Severn RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Direct biological pressures; physical modification	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through fisheries enhancement projects (see Annex D)	Severn RBD	2012	Environment Agency
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through agreed mitigation within shoreline management plan (See Annex D)	Severn RBD	2010	Local Authorities; Environment Agency
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Flood Management Programme (See Annex D)	Severn RBD	2012	Environment Agency; Local Authorities
Physical modification; 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)	Severn RBD	2012	Environment Agency; Farmers

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Investigations - Natura 2000 plans & programmes				
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; Priority Hazardous Substances; Priority Substances and Specific Pollutants; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through investigation and monitoring (see Annex D)	Severn RBD	2012	Countryside Council for Wales, Environment Agency
Abstraction and other artificial flow pressures; Physical modification; Sediments (as a direct pollutant); Nutrients	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through investigations to address water quality, invasive species and hydrology pressures (See Annex D)	Severn RBD	2010	Natural England; Environment Agency

C.8 Industry, manufacturing and other business

The key economic sectors in the district are business services, wholesale and distribution, public administration and health. Transport equipment and manufacturing are also important industrial sectors as is the minerals and aggregates industry. The agriculture sector is extensive but only makes up a small part of the economy. Business services, health and retailing are the largest employers in the Severn RBD.

Quarrying, mainly for limestone, and its associated industries are very important especially in the East Mendips. The Avonmouth industrial complex covers a large area and the drainage is directly into the Severn Estuary.

All businesses have some environmental footprint by emitting pollution, using water, producing waste or simply using power. Regional Economic Strategies for the South West and West Midlands and the equivalent strategies for Wales are key documents to manage the impact of future economic growth by aiming to demonstrate that this growth can be secured within environmental limits to bring prosperity to the English Regions and Wales.

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	
Abstraction	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	Severn RBD	Implemented	Environment Agency; Regional Development Agencies; Water companies
Abstraction	Reduction of demand through labelling scheme for water efficient products	Severn RBD	2012	Industry leads; Defra
Abstraction	Reduction of demand through offering of tax incentives (enhanced Capital Allowances) for the purchase and use of efficient plant and fittings by commercial organisations	Severn RBD	Implemented	Defra; HM Revenue and Customs

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction	Water efficiency requirements in Environmental Permitting Regulation (EPR) permits	Severn RBD	Implemented	Environment Agency
Biota removal (including commercial fish take and weed control)	Achieve 40% escapement of silver eels and sustainable elver exploitation - Eel Management Plans	Severn RBD	2012	Environment Agency
Biota removal (including commercial fish take and weed control)	Reduce illegal eel and elver fishing in estuaries, rivers and stillwaters	Severn RBD	2010	Environment Agency
Biota removal (including commercial fish take and weed control)	Reduce illegal fishing in estuaries, rivers and stillwaters	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Comply with local authority contaminated land legislation Notices. Make use of site specific notices to remove pollution risk to groundwater	Severn RBD	Implemented	Local Authorities; Land managers and owners
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Development planning - influence location of development to protect groundwater	Severn RBD	Implemented	Environment Agency; Water companies
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Groundwater protection advice to Veterinary Medicines Directorate products approvals process	Severn RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Provide development planning standing advice in England	Severn RBD	Implemented	Environment Agency

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	Re-engineer existing discharges to avoid direct discharges of pollutants to groundwater	Severn RBD	Implemented	Environment Agency; Water companies
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Comply with Environment Agency Notice (WRA S86 and S161, Groundwater Regulations). Make use of site specific notices to remove pollution risk to groundwater	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	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	Severn RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	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	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Comply with environmental permit conditions	Severn RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Development planning: land contamination - site specific advice and required action for remediation of contaminated land through planning liaison	Severn RBD	Implemented	Local Authorities; Environment Agency

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	Environmental Permitting – effluent discharges to ground	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Environmental Permitting - Process Industries Regulation	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Environmental Permitting - waste disposal	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow Petrol Retailing Code of Practice (Groundwater Regulations) - comply with published advice for operators	Severn RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow Solvents Code of Practice (Groundwater Regulations) - comply with published advice for operators	Severn RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow the SUDS (sustainable drainage systems) Interim Code of Practice - comply with published advice for operators.	Severn RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	In England, implement DCLG Planning Policy Guidance Statement 23 (PPS23) on controlling pollution of groundwater that may arise from development of land	Severn RBD	Implemented	Local Authorities

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	Implement Groundwater Protection: Policy & Practice - External education on groundwater pollution prevention	Severn RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Implementation of 'oil-filled cables' operating agreement with electricity transmission companies	Severn RBD	Implemented	Industry leads; Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Local authority contaminated land legislation Notice powers – Make use of site specific notices to remove pollution risk to groundwater	Severn RBD	Implemented	Local Authorities
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Local pollution prevention campaigns & education to include emphasis on solvent use	Warwickshire Avon - Coal Measures Coventry	2010	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Local pollution prevention campaigns & education to include emphasis on solvent use	Worcestershire Middle Severn - PT Sandstone	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Proposed oil pipelines Operating Agreement(s)	Severn RBD	2012	Environment Agency; Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Total Oil Operating agreement	Severn RBD	Implemented	Environment Agency; Industry leads

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Indeno (123-cd) pyrene; Fluoranthene; Benzo(a)pyrene; Benzo (ghi) perylene	EU Restriction on use of PAH content in oil used in the manufacture of tyres	Severn RBD	Implemented	EU
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	Severn RBD	Implemented	Environment Agency
Nitrate	Comply with Environment Agency Notice (WRA S86 and S161, Groundwater Regulations, contaminated land legislation)	Severn RBD	Implemented	Land managers and owners
Nitrate	Development planning - planning liaison. Site specific groundwater pollution prevention advice and recommendations	Severn RBD	Implemented	Local Authorities
Nitrate	Waste exemptions - low risk approach to waste regulation activities	Severn RBD	Implemented	Environment Agency
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	NetRegs (Environmental Guidance to Business) - External education on groundwater pollution legislation	Severn RBD	Implemented	Environment Agency
Organic pollutants; Chemicals - Specific pollutants	Reduce pollution through campaign on local industrial estate draining to River Swilgate	R Swilgate - source to conf R Avon	2010	Environment Agency
Organic pollutants; Chemicals - Specific pollutants	Reduce pollution through campaigns on industrial estates. Look at recent pollution incidents and sources to target pollution reduction activity	South East Valleys Catchment; Usk Catchment; Wye Catchment	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	Improve eel passage at Blackweir on the River Taff (Cardiff Bay)	Cardiff Bay	Implemented	Environment Agency; Cardiff Harbour Authority
Priority Hazardous Substances, Priority Substances and Specific Pollutants	General guidance to improve Pesticide use through the Amenity Forum	Severn RBD	Implemented	Amenity Forum
Priority Substances and Specific Pollutants; 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)	Severn RBD	2012	Industry leads; Land managers and owners; Water companies; Environment Agency
Saline intrusion	CAMS – Implement abstraction licensing controls to minimise and manage risks from saline intrusion	Severn RBD	Implemented	Environment Agency; Water companies
Sediments (as a direct pollutant); Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants	Bristol City Council information pack on sustainable drainage systems and green roofs	Bristol Avon & North Somerset Streams Catchment	2012	Bristol City Council
Trichloroethylene	EU-wide ban on use	Severn RBD	Implemented	EU
Investigations				
Dredging and trawling (commercial fishing and shellfish)	Investigation into the impact of 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	Severn RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	application.			
Physical modification	Continue to monitor effectiveness of eel passes	Severn RBD	2012	Environment Agency
Physical modification	Investigate the installation of elver passes on tilting weirs	Severn RBD	2012	Environment Agency
Physical modification; Biota removal (including commercial fish take and weed control)	Survey work to quantify eel population dynamics	Severn RBD	Implemented	Environment Agency
Tributyltin (TBT) compounds	Investigate emissions from installations and appraise options (to reduce at source or treat, up to BAT) to meet EQS and reduce/cease emissions in this or subsequent rounds, focussing on ship yards, timber treatment plants or treated timber storage areas (imported timber)	R Wye - Bredwardine Br to Hampton Bishop	2012	Industry

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 twenty two unitary authorities within, or partly within, the Severn 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 eleven county councils and thirty six district 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	Availability of grants for construction of irrigation and industrial supply reservoirs	Severn RBD	Implemented	Regional Development Agencies; Welsh Assembly Government
Abstraction	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	Severn RBD	Implemented	Environment Agency; Regional Development Agencies; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	separation			
Abstraction and other artificial flow pressures	Include strong water efficiency policies in Spatial Strategies and Local Development Plans / Frameworks	Severn RBD	Implemented	Local Authorities; Regional Assemblies; Welsh Assembly Government
Alien species	Tackle invasive weeds in a coordinated way through the Bristol Avon Invasive Weed Forum	Bristol Avon & North Somerset Streams Catchment	2012	Bristol City Council
Habitat Manipulation (restoration/improvement)	Deliver improvements to riparian habitat, reduce the impact of alien species and promote community involvement on the Bristol Avon and River Frome through the Avon Frome Partnership (Bristol CC, Bath & North East Somerset Council, South Glos. Council and Environment Agency)	Bristol Avon & North Somerset Streams Catchment	2012	Local Authorities; Environment Agency
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	In England, implement DCLG Planning Policy Guidance Statement 23 (PPS23) on controlling pollution of groundwater that may arise from development of land	Severn RBD	Implemented	Local Authorities
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Fire service Memorandum of Understanding (MoU) on implementing pollution control measures in emergencies	Severn RBD	Implemented	Local Authorities; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Nitrate; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Faecal indicator organisms; Phosphate	Provide co-ordinated advice to farmers on complying with agricultural and environmental regulations through the Green Futures initiative in the West Midlands	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Warwickshire Avon Catchment; Worcestershire Middle Severn Catchment	Implemented	West Midlands Rural Hubs
Organic pollutants; Nutrients; Faecal indicator organisms	Get on Board, a multi partnership campaign to protect and improve the Floating Harbour environment in Bristol	Bristol Avon & North Somerset Streams Catchment	Implemented	Bristol City Council
Physical modification	Produce costed feasibilities to influence improved fish passage at Diglis, Bevere, Holt, Lincomb weirs on the River Severn navigation with particular reference to Shad if legislative or other opportunities arise.	Severn Vale Catchment; Worcestershire Middle Severn Catchment	2012	Environment Agency; Local Authorities; Natural England; British Waterways
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	Severn RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	ensure that new and existing schemes and management activities will take into consideration WFD requirements and will results in minimal ecological damage.			
Physical modification	Work with aggregate companies to provide greater channel and flood plain diversity, off stream fish refuges and fry habitat on completion of extraction, for example with CEMEX at Ripple sand and gravel quarries on the River Severn	R Severn - conf R Teme to conf R Avon	2012	Worcestershire CC; Environment Agency; CEMEX
Physical modification; Alien species; Habitat Manipulation (restoration/improvement)	Warwickshire Wildlife Trust Living Landscape projects including the River Avon Snipe project and River Stour Vision biodiversity project. Delivery involves working with Stratford DC, schools and landowners to improve riparian habitat and river ecology and re-establish wetlands at identified sites	Warwickshire Avon Catchment	Implemented	Environmental NGOs; Local Authorities
Priority Hazardous Substances, Priority Substances and Specific Pollutants	General guidance to improve Pesticide use through the Amenity Forum	Severn RBD	Implemented	Amenity Forum

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; Organic pollutants; Nutrients	Operation Streamclean, a partnership project to identify and correct sewerage misconnections at domestic properties	Bristol Avon & North Somerset Streams Catchment	Implemented	Bristol City Council; Environment Agency; Wessex Water
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants; Nutrients; Abstraction	Protect and seek improvements to the water environment through local authority Water Cycle Studies (includes Surface Water Management Plans)	Severn RBD	2010	Environment Agency; Local Authorities
Sediments (as a direct pollutant); chemicals – metals; Organic pollutants	Reduce diffuse pollution by developing examples and promoting awareness of best practice use of Sustainable Drainage Systems	Severn RBD	Implemented	Environmental NGOs; Local Authorities
Sediments (as a direct pollutant); Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants	Bristol City Council information pack on sustainable drainage systems and green roofs	Bristol Avon & North Somerset Streams Catchment	2012	Bristol City Council
Investigations				
Abstraction and other artificial flow pressures	Assess opportunities for surface water storage areas on new development sites as a potential source for re-use in the development and to reduce the need for abstraction	Severn RBD	2012	Local Authorities
Organic pollutants	Identify intermittent polluting discharges from industrial premises in the South East	R Taff - conf Rhondda R to Castle Street	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	Valleys catchment			
Physical modification	Investigate new solution for building improved fish passage at Blakeney weir	Blackpool Bk - source to conf Cinderford Bk	2012	Awre Parish Council
Physical modification	Investigations into the ecological outcomes of measures to mitigate against effects of 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	Severn RBD	2010	Environment Agency
Natura 2000 and SSSI plans & programmes				
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; organic pollutants; physical modification; sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through undertaking review of consents (see Annex D)	Severn RBD	2012	British Waterways, Environment Agency, Local Authorities, National Parks
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through	Severn RBD	2012	British Waterways, Countryside Council for Wales, Environment Agency, Forestry

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
direct pollutant)	other competent authority functions (see Annex D)			Commission Wales, Local Authorities
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through specific habitats works (see Annex D)	Severn RBD	2012	British Waterways, Countryside Council for Wales, Defence Estates, Environment Agency, Local Authorities, National Parks, National Trust, RSPB, Water companies, Welsh Assembly Government, Wildlife Trusts
Abstraction and other artificial flow pressures; physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through undertaking a remediation programme for flood risk and drainage impacts (see Annex D)	Severn RBD	2012	Environment Agency, Local Authorities, Welsh Assembly Government
Physical modification; 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 enforcement or revocation of planning permission to address public access, drainage, hydrology and navigation pressures (See Annex D)	Severn RBD	2010	Local Authorities

C.10 Mining and quarrying

The varied geology of the Severn River Basin means that there has been considerable production of industrial and constructional minerals from quarries and underground mines. Cheddar, Frome and the Mendips are the biggest limestone quarrying areas in the UK and the Severn river valley is also a major source of sand and gravels. The Wye valley is one of very few sources of high polished stone used in high performance roads. The most important environmental issues are to do with water and sediment management.

Pressure associated with historical metal mining activities are evident in parts of the district, most notably in mid-Wales, but also from historic coal mining around the Welsh Valleys, Telford, Coventry and the Forest of Dean. Uncontrolled discharges from former mine workings are often acidic and contain metals and other toxic substances and can have significant impacts on ecology. Ochreous discharges are prominent in the Welsh Valleys typified by orange staining of rivers.

Current mining and quarrying activity is well regulated. Dealing with the environmental legacy of historic activities will be expensive and presents a major technical challenge. Although progress will be made, it is likely that in places the impacts will continue 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	
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)	Severn RBD	2012	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Hazardous substances and non-hazardous pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Priority Substances and Specific Pollutants (Metals)	Implementation of best practice controls and remediation at abandoned coal mines (subject to prioritisation)	Afon Lwyd - source to conf Dowlais Bk; Ebbw R - conf Ebbw Fach R to Maes-glas; Ely R - source to conf Nant Mychydd; Nant Clydach - source to conf R Taff; Rhondda R - source to conf Afon Rhondda Fach; Rhymney R - conf Nant Cylla to Chapel Wood; Rhymney R - Nant Bargod Rhymni to conf Nant Cylla; Rhymney R - source to conf Nant Bargod Rhymni; Sirhowy R - Rock Villas to conf Afon Ebwy; Sirhowy R - source to Rock Villas	2015	Coal Authority
Hazardous substances and non-hazardous pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Priority Substances and Specific Pollutants (Metals)	Implementation of best practice controls and remediation at abandoned metal mines (subject to prioritisation)	Afon Clywedog - Clywedog Dam to R Severn	2015	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Coal Authority minewater preventative and remediation programme to restore river quality	SE Valleys Carboniferous Coal Measures; Severn RBD	Implemented	Coal Authority
Hazardous substances and non-hazardous pollutants; Priority	Coal Authority minewater pumping schemes to prevent intrusion of poor quality water into clean	Severn RBD	Implemented	Coal Authority

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Substances and Specific Pollutants (Metals)	aquifers			
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	Severn 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 legislation). Make use of site specific notices to remove pollution risk to groundwater	Severn RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Comply with local authority contaminated land legislation Notices. Make use of site specific notices to remove pollution risk to groundwater	Severn RBD	Implemented	Local Authorities; Industry leads
Physical modification	Work with aggregate companies to provide greater channel and flood plain diversity, off stream fish refuges and fry habitat on completion of extraction, for example with CEMEX at Ripple sand and gravel quarries on the River Severn	R Severn - conf R Teme to conf R Avon	2012	Worcestershire CC; Environment Agency; CEMEX

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 and deliver Pollution Prevention advice to landowners and users on abandoned metal mines and coal mines	Severn Uplands Catchment; South East Valleys Catchment; Usk Catchment; Wye Catchment	2012	Environment Agency Wales
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)	Severn RBD	2012	Industry leads; Land managers and owners; Water companies; Environment Agency
Investigations				
Arsenic	Further monitoring to confirm risk of failure of WFD Article 7	Chew Valley lake	2010	Environment Agency; Water companies
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Metal Mine Discharges: Investigation of impact & remediation in accordance with new national Environment Agency priority remediation list	Severn Uplands - Secondary Combined	2012	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Co-ordinate research and develop sustainable and integrated remediation options for: a) use of heat from minewater, b) alternate uses for ochre, and c) co-treatment of minewater and sewage	Severn RBD	Implemented	Industry; Coal Authority

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; Hazardous substances and non-hazardous pollutants	Investigate discharges from abandoned metal, and other non-coal mines. Prioritise for inclusion in national agreement with relevant mines partner organisations	Afon Banwy - conf Afon Gam to Afon Vyrnwy; Afon Cerist - conf Afon Trannon to conf R Severn; Afon Cerist - source to conf Afon Trannon; Afon Dulas - source to conf R Severn; Afon Eirth - source to conf Afon Tanat; Afon Iwrch - source to conf Afon Tanat; Afon Rhaeadr - source to conf Afon Tanat; Afon Trannon - source to nr Argoed; Cannop Bk - source to R Severn Estuary; Minsterley Bk - source to conf Rea Bk; R Severn - conf Afon Dulas to conf R Camlad; R Severn - source to conf Afon Dulas; R Wye - conf Afon Bidno to conf Afon Marteg; R Wye - conf to conf Afon Marteg to conf Afon Elan; R Wye - conf Walford Bk to Bigsweir Br; R Wye - source to conf Afon Tarenig	2012	Environment Agency
Sediments (as a direct pollutant); Chemicals - Specific pollutants; Physical modification	Assess mineral restoration schemes for potential for delivering Water Framework Directive benefits. Explore revenue and funding streams from the Aggregate Levy Sustainability Fund, Landfill Tax and waste levies for restoration research and possible schemes	Severn RBD	2010	Environmental NGOs; Land managers and owners; Local Authorities; Natural England; Environment Agency

C.11 Navigation

Ports and marinas provide important regional infrastructure supporting local economies and businesses. Ports handle approximately 95 per cent 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 Severn Estuary has several important commercial ports at Avonmouth, Portbury, Cardiff, Newport and Sharpness. Examples of key trades at Bristol include coal, cars, petroleum products and animal feed. 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. Immediate entrances to docks require regular maintenance dredging because of the high siltation rates in the Severn Estuary. Dredging and disposal are highly regulated activities to minimise harm to the environment. Metal concentrations in estuarine sediments and levels of chemicals used as anti-foulants can be high and this contamination can be released into the water as a result of dredging or disturbance, leading to localised water quality issues. However, this is not thought to be a significant water management issue in the Severn Estuary.

The large network of canals and navigable waterways such as the Rivers Severn, Wye and Avon are an important feature of the district and have significant social and economic value. The main environmental issues for canal navigation arise from dredging contaminated sediments which can release pollutants into the water, maintaining adequate water supplies for the canals and some operational structures which physically alter watercourses and can limit the ecology.

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

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
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)	Severn RBD	2012	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Alien species	Support the all Wales and establish Severn RBD invasive non-native species fora to coordinate priorities and implement control measures	Severn RBD	2012	Wales Biodiversity Partnership; Environment Agency
Dredging (sediment management)	Apply national guidance framework on dredging and dredged material disposal (ports sector) to 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) and refine local measures as appropriate (where not disproportionately costly or technically infeasible)	BRISTOL AVON; SEVERN LOWER; SEVERN MIDDLE ; SEVERN UPPER; USK; WYE	2012	Environment Agency
Navigation (boat traffic)	Awareness raising / information boards (invasive species) - A programme of awareness raising will be implemented by April 2011	Grand Union Canal, Leamington Spa to Warwick trough pound; Grand Union Canal, Warwick to Solihull	2011	British Waterways
Nutrients	Tackle eutrophication problems in Bittell Reservoirs caused by diffuse inputs of nutrients by undertaking partnership project to implement solutions	Warwickshire Avon Catchment	Implemented	Environment Agency; British Waterways
Organic pollutants; Nutrients; Faecal indicator organisms	Get on Board, a multi partnership campaign to protect and improve the Floating Harbour environment in Bristol	Bristol Avon & North Somerset Streams Catchment	Implemented	Bristol City Council

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Physical modification	Consent to and follow best practice in all dredging activities within the River Severn during key salmon migration periods i.e. April to September	Severn Vale Catchment; Shropshire Middle Severn Catchment; Worcestershire Middle Severn Catchment	Implemented	Environment Agency; British Waterways
Physical modification	Maintain and improve eel passage at identified obstructions on Severn, Wye, Usk, Taff and Lyd	Severn RBD	2011	Environment Agency
Physical modification	Produce costed feasibilities to influence improved fish passage at Diglis, Bevere, Holt, Lincomb weirs on the River Severn navigation with particular reference to Shad if legislative or other opportunities arise.	Severn Vale Catchment; Worcestershire Middle Severn Catchment	2012	Environment Agency; Local Authorities; Natural England; British Waterways
Physical modification	Work with British Waterways on issue of delayed salmon migration caused by navigation weirs and development of plan to improve fish passage as part of maintenance regime	Severn Vale Catchment; Worcestershire Middle Severn Catchment	2012	Environment Agency; British Waterways
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Develop national guidance framework on dredging to inform Programme of Measures to meet WFD objectives	BRISTOL AVON; SEVERN LOWER; SEVERN MIDDLE ; SEVERN UPPER; USK; WYE	2010	Welsh Assembly Government; Defra
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	BRISTOL AVON; SEVERN LOWER; SEVERN MIDDLE ; SEVERN UPPER; USK; WYE	2010	Welsh Assembly Government; Defra

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	Apply national guidance framework on dredging to refine local measures as appropriate (where not disproportionately costly or technically infeasible)	BRISTOL AVON; SEVERN LOWER; SEVERN MIDDLE ; SEVERN UPPER; USK; WYE	2012	Marine and Fisheries Agency; Welsh Assembly Government; 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)	BRISTOL AVON; SEVERN LOWER; SEVERN MIDDLE ; SEVERN UPPER; USK; WYE	2012	Marine and Fisheries Agency; Welsh Assembly Government; Defra
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Review existing controls for dredging inside and outside harbour limits as appropriate	BRISTOL AVON; SEVERN LOWER; SEVERN MIDDLE ; SEVERN UPPER; USK; WYE	2012	Marine and Fisheries Agency; Welsh Assembly Government; Defra
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Review existing controls for disposal of dredgings inside and outside harbour limits as appropriate	BRISTOL AVON; SEVERN LOWER; SEVERN MIDDLE ; SEVERN UPPER; USK; WYE	2012	Marine and Fisheries Agency; Welsh Assembly Government; Defra
Tributyltin (TBT) compounds	EU-wide ban on marketing of TBT as a biocide in the EU	Severn RBD	Implemented	EU
Tributyltin (TBT) compounds	EU-wide non-application of TBT to 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	Severn RBD	Implemented	EU
Tributyltin (TBT) compounds	Help prevent illegal use of old TBT containing products	Severn RBD	Implemented	British Marine Federation; British Waterways; Environment Agency;

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
				Royal Yachting Association
Investigations				
Tributyltin (TBT) compounds	Investigate the reason for failure: to assess the contribution from dredging or disposal activities on EQS compliance as appropriate	Ebbw R - conf Ebbw Fach R to Maes-glas; Nant y Aber - source to conf Rhymney R; R Avon (Brist) - conf Semington Bk to Netham Dam; R Avon conf Workman Br, Evesham to conf R Severn; R Frome - conf R Mells to conf R Avon (Brist); R Severn - conf Bele Bk to conf Sundorne Bk; R Severn - conf R Avon to conf Upper Parting; R Sowe - conf Smite Bk to conf R Avon; R Stour (Worcs) - conf Smestow Bk to conf R Severn; R Taff - conf Rhondda R to Castle Street; R Teme - conf R Onny to conf R Severn; R Tern - conf R Roden to conf R Severn; R Usk - conf R Gavenny to conf Olway Bk; R Wye - Bredwardine Br to Hampton Bishop; R Wye - conf Walford Bk to Bigsweir Br; Rhymney R - conf Nant Cylla to Chapel Wood	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Natura 2000 and SSSI plans & programmes				
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; organic pollutants; physical modification; sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through undertaking review of consents (see Annex D)	Severn RBD	2012	British Waterways, Environment Agency, Local Authorities, National Parks
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through other competent authority functions (see Annex D)	Severn RBD	2012	British Waterways, Countryside Council for Wales, Environment Agency, Forestry Commission Wales, Local Authorities
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through specific habitats works (see Annex D)	Severn RBD	2012	British Waterways, Countryside Council for Wales, Defence Estates, Environment Agency, Local Authorities, National Parks, National Trust, RSPB, Water companies, Welsh Assembly Government, Wildlife Trusts

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Direct biological pressures; Sediments (as a direct pollutant)	Contribute to favourable condition on Aqualate Mere SSSI by management of vegetation	Shropshire Middle Severn Catchment	Implemented	British Waterways
Sediments (as a direct pollutant)	Contribute to favourable condition on Montgomery Canal, Aston Locks - Keeper's Bridge SSSI by implementing appropriate dredging programme	Severn Uplands Catchment; Shropshire Middle Severn Catchment	Implemented	British Waterways

C.12 Urban and transport

Just over 5 million people live in the Severn River Basin District. Although predominantly rural in character the district contains several major urban centres such as Bristol, Bath, Cardiff, Coventry, Telford, Shrewsbury, Gloucester and Worcester.

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 rivers. Substantial planned 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.

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	
Alien species	Support the all Wales and establish Severn RBD invasive non-native species fora to coordinate priorities and implement control measures	Severn RBD	2012	Wales Biodiversity Partnership; Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Comply with Environment Agency Notice (WRA S86 and S161, Groundwater Regulations) Make use of site specific notices to remove pollution risk to groundwater	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and	Comply with Environment Agency Notice (WRA S86 and S161, Groundwater Regulations, contaminated land legislation). Make use of site	Severn RBD	Implemented	Land managers and owners

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Specific Pollutants	specific notices to remove pollution risk to groundwater			
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Comply with new EC Sustainable Use of Pesticides Directive to control use of Plant Protection Products	Severn RBD	2012	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Comply with WRA consent conditions	Severn RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow Pesticides Code of Practice - comply with published advice for operators on control of plant protection products	Severn RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow the SuDS (sustainable drainage systems) Interim Code of Practice - comply with published advice for operators	Severn RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Groundwater protection advice to Veterinary Medicines Directorate products approvals process	Severn RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Highways Agency Programme to investigate soakaways	Severn RBD	Implemented	Highways Agency

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	Implementation of Network Rail Pesticide protocol	Severn RBD	Implemented	Industry leads; Environment Agency
Microbiology; Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Environment Agency and Highways Agency Memorandum of Understanding (MoU) and associated initiatives	Severn RBD	Implemented	Highways 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	Severn RBD	Implemented	National Fire Service
Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Facilitate the setting up of new River Flylife Partnerships and provide guidance to those groups once they are up and running	South East Valleys Catchment; Usk Catchment; Wye Catchment	Implemented	Environment Agency
Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Improve detection of pollution incidents by using River Flylife partnerships to have more frequent monitoring of river macroinvertebrates	South East Valleys Catchment; Wye Catchment	Implemented	Environment Agency

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 results in minimal ecological damage.	Severn RBD	2010	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants	General guidance to improve Pesticide use through the Amenity Forum	Severn RBD	Implemented	Amenity Forum
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants; Nutrients	Operation Streamclean, a partnership project to identify and correct sewerage misconnections at domestic properties	Bristol Avon & North Somerset Streams Catchment	Implemented	Bristol City Council; Environment Agency; Wessex Water
Priority Substances and Specific Pollutants; 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)	Severn RBD	2012	Industry leads; Land managers and owners; Water companies; Environment Agency
Sediments (as a direct pollutant); chemicals – metals; Organic pollutants	Reduce diffuse pollution by developing examples and promoting awareness of best practice use of Sustainable Drainage Systems	Severn RBD	Implemented	Environmental NGOs; Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Investigations				
Chemicals - Specific pollutants	Improved understanding by carrying out local investigations into origin and causes of and solutions to pollution	South East Valleys Catchment; Usk Catchment; Wye Catchment	Implemented	Environment Agency
Diuron	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this.	River Leam - conf R Itchen to conf R Avon; R Frome - Slad Bk to R Severn; R Teme - conf R Onny to conf R Severn	2010	Central Government; Environment Agency
Glyphosate	Further monitoring to confirm risk of failure of WFD Article 7	R Frome - Slad Bk to R Severn; R Teme - conf R Onny to conf R Severn	2010	Environment Agency; Water companies
Glyphosate	Further monitoring to confirm risk of failure of WFD Article 7. Water industry catchment investigation to establish source of pollutant	River Leam - conf R Itchen to conf R Avon	2010	Environment Agency; Water companies
Physical modification	Investigations into the ecological outcomes of measures to mitigate against effects of 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.	Severn RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Natura 2000 and SSSI plans & programmes				
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through enforcement (S34 Road Traffic Act) to address erosion pressures (See Annex D)	Severn RBD	2010	Local Authorities

C.13 Water industry

There are five water and sewerage service companies operating in the Severn river basin district; Dwr Cymru Welsh Water, Severn Trent Water, Wessex Water, Thames Water and United Utilities. In addition, two water supply-only companies also operate in the District, South Staffordshire Water and Bristol Water. All Bristol Water customers are within the Severn RBD. Only a small proportion of United Utilities, Thames Water and South Staffordshire Water customers are within the district, although South Staffordshire Water abstract water from the River Severn. Together the companies provide water and sewerage services to around 2 million households as well as commercial and business sites. There are a large number of area's which remain unsewered; relying on septic tanks and private package treatment plants, where appropriate these may be considered for sewerage schemes.

Rivers support a diverse ecology as well as providing water for use as a commodity and recreation. Protecting 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 challenges faced by individual companies vary across the District. The level of rainfall is higher in the west of the district and the proportion of water available for supply from surface water and groundwater sources varies between company areas meaning companies operate in different ways to provide a secure high quality water supply.

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 receive 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	
PR04 (AMP4) Water Industry Investment Programme (2005-2010)				
Ammonia, BOD	Improvements to water company assets under AMP4 at 9 locations in the Bristol Avon and North Somerset Streams catchment through completing the current round of investment to be undertaken by Wessex Water. The improvements include:- Improve discharges from Tockington Storm Tank, Calne Sewage Treatment Works (STW) Storm Tank, Pucklechurch Storm Tank/ Combined Sewer Overflow (CSO) at Marsh Farm, Freshford Storm Tank, Filton Stoke Brook CSO, Portishead Pumping Station (PS) CSO, Ashton Avenue PS and Kingshill CSO (Nailsea) through resolving unsatisfactory intermittent discharges.- Improve discharges from Portway (Plimsole Bridge) under a residual scheme from Asset Management Plan (AMP) 3	Bristol Avon & North Somerset Streams Catchment	2010	Wessex Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Ammonia; BOD	Improvements to water company assets under AMP4 at 10 locations in the Usk catchment through completing the current round of investment to be undertaken by Dwr Cymru Welsh Water. The improvements include: Improve discharges from Maesygartha Pumping Station (PS), Aberbaiden STW Storm Overflow, Trecastle STW Storm Overflow, Underwood PS Storm Tank, Bullpit Meadow Combined Sewer Overflow (CSO) Crickhowell, Clydach CSO, Usk STW Storm Overflow, Newport Chepstow Road, Llangynidr PS, Bettws Lane Newport PS through resolving unsatisfactory intermittent discharges	Usk Catchment	2010	Dwr Cymru
Ammonia; BOD	Improvements to water company assets under AMP4 at one location in the Severn Vale catchment through completing the current round of investment to be undertaken by Dwr Cymru Welsh Water. The improvements include; - Improve discharges from Cannop Road Pumping Station through resolving unsatisfactory intermittent discharges	Severn Vale Catchment	2010	Dwr Cymru

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Ammonia; BOD	Improvements to water company assets under AMP4 at one location in the Shropshire Middle Severn catchment through completing the current round of investment to be undertaken by Severn Trent Water. The improvements include:- improve discharges from Maer Village Drain to meet the minimum requirements of the Urban Waste Water Treatment Directive that are not covered by other drivers	Shropshire Middle Severn Catchment	2010	Severn Trent Water
Ammonia; BOD; Phosphate	Improvements to water company assets under AMP4 at 11 locations in the Wye catchment through completing the current round of investment to be undertaken by Dwr Cymru Welsh Water. The improvements include: Improve discharges from Station Road, Howey Ivy Cottage, Ithon Road CSO and Llanwrttyd Wells SSO on trunk sewer through resolving unsatisfactory intermittent discharges, - Improve discharge from Leominster STW where there is a requirement agreed by the conservation agencies and the Environment Agency to remove more phosphorus than required by the	Wye Catchment	2010	Dwr Cymru

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	Urban Waste Water Treatment Directive (UWWTD), - Improve discharges at Bromyard STW, Kington STW, Llandrindod Wells STW and Moreton STW where there is a requirement agreed by the conservation agencies and the Environment Agency to remove phosphorus at discharges that are too small for UWWTD, - Improve discharges at Rotherwas STW and Leominster STW where there is a requirement agreed by the conservation agencies and the Environment Agency to remove more BOD, Suspended Solids or Ammonia than required by UWWTD			
Ammonia; BOD; Phosphate	Improvements to water company assets under AMP4 at 3 locations in the Worcestershire Middle Severn catchment through completing the current round of investment to be undertaken by Severn Trent Water. The improvements include - Improve discharges from Worcester STW Storm Tanks, Bridgnorth Road Wolverhampton, through resolving unsatisfactory intermittent discharges - Improve discharge at Bromsgrove	Worcestershire Middle Severn Catchment	2010	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	STW where there is a need for extra improvements to secure compliance with List I and List II statutory standards			
Ammonia; BOD; Phosphate	Improvements to water company assets under AMP4 at 5 locations in the Teme catchment through completing the current round of investment to be undertaken by Severn Trent Water. The improvements include - Improve discharges from Church Stretton STW Storm Tanks through resolving unsatisfactory intermittent discharges, - Improve discharges from Bucknell STW where there is a requirement agreed by the conservation agencies and the Environment Agency to remove phosphorus at discharges that are too small to be covered by Urban Waste Water Treatment Directive - Improve discharges at Knighton STW, Church Stretton STW and Craven Arms STW where there is a requirement agreed by the	Teme Catchment	2010	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	conservation agencies and the Environment Agency to remove more or different nutrients than required by UWWTD, Habitats Directive, Biodiversity Action Plans or OSPAR			
Ammonia; BOD; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Improvements to water company assets under AMP4 at 28 locations in the South East Valleys catchment through completing the current round of investment to be undertaken by Dwr Cymru Welsh Water. The improvements include;- Improve discharges from 27 combined sewer overflows through resolving unsatisfactory intermittent discharges, - improve discharge from Western District Pumping Station where improvement is not eligible under any other driver but is of significant local importance	South East Valleys Catchment	2010	Dwr Cymru
Ammonia; BOD; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Phosphate	Improvements to water company assets under AMP4 at 3 locations in the Warwickshire Avon catchment through completing the current round of investment to be undertaken by Severn Trent Water. The improvements include, - Improve discharges from Prince's Drive CSO through resolving unsatisfactory	Warwickshire Avon Catchment	2010	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	intermittent discharges - Improve discharges at Long Lawford STW where there is a requirement agreed by the conservation agencies and the Environment Agency to remove more or different nutrients than required by UWWTD, Habitats Directive, Biodiversity Action Plans or OSPAR, - Improve discharge at Astwood Bank STW where there is a need for extra improvements to secure compliance with List I and List II statutory standards.			
BOD; Ammonia	Improvements to water company assets under AMP4 at one location in the Severn Uplands catchment through completing the current round of investment to be undertaken by Severn Trent Water. The improvements include: Improve discharges from The Flash CSO in Shrewsbury through resolving unsatisfactory intermittent discharges	Severn Uplands Catchment	2012	Severn Trent Water
PR09 (AMP5) Water Industry Investment Programme (2010-2015)				
Abstraction and other artificial flow pressures	Actions under PR09 (AMP5) Water Industry Investment programme - Modification of Abstraction licence to ensure no adverse effect on integrity of Natura 2000 site & to prevent fish	USK; Usk Catchment	2015	Environment Agency; Dwr Cymru

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	entrainment: River Usk SAC			
Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Improve ammonia levels at sewage treatment works discharges to help achieve good status, Two sewage treatment works at Edmond STW, Oswestry (Drenewydd) STW	Common Bk - source to conf R Perry; Pipe Strine - source to conf R Strine; Shropshire Middle Severn Catchment	2012	Severn Trent Water
BOD; Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure compliance with the Groundwater Directive and Groundwater daughter Directive Schemes to improve / re engineer the discharges to avoid the direct discharge of pollutants to groundwaters at five sewage treatment works, St Arvans STW, Ffordlas STW, Abbeycwmhir STW, Cefn Gorwydd STW, Pontshill (Woodview) STW	Usk and Wye Southern Carboniferous Limestone; Wye Minor; Wye Catchment	2012	Dwr Cymru
BOD; Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure compliance with the Groundwater Directive and Groundwater daughter Directive Schemes to improve / re engineer the discharges to avoid the direct discharge of pollutants to	Severn Vale - Jurassic Limestone Cotswold Edge South; Severn Vale Catchment	2012	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	groundwaters at one sewage treatment works; Birdlip STW			
BOD; Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure compliance with the Groundwater Directive and Groundwater daughter Directive Schemes to improve / re engineer the discharges to avoid the direct discharge of pollutants to groundwaters at one sewage treatment works; Nescliffe STW	Severn Uplands Catchment	2012	Severn Trent Water
BOD; Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure compliance with the Groundwater Directive and Groundwater daughter Directive Schemes to improve / re engineer the discharges to avoid the direct discharge of pollutants to groundwaters at one sewage treatment works; Suckley Rectory Lane STW	Teme - Secondary Combined; Teme Catchment	2012	Severn Trent Water
BOD; Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure compliance with the Groundwater Directive and Groundwater daughter Directive Schemes to improve / re engineer the	Shropshire Middle Severn - PT Sandstone East Shropshire; Shropshire Middle Severn Catchment	2012	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	discharges to avoid the direct discharge of pollutants to groundwaters at one sewage treatment works; Suckley Rectory Lane STW			
BOD; Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure no deterioration of receiving water quality due to increased consented discharge flows at nine sewage treatment works; Norton Lindsey STW, Whichford STW, Brinklow STW, Broadway STW, Cherington STW, Gaydon STW, Kimcote STW, Kineton STW, Swinford STW	Badsey Bk - source to conf Bretforton Bk; R Avon (Warks) - source to Claycoton-Yelvertoft Bk; R Dene - conf Radway Bk to conf unnamed trib; R Dene - source to conf with Radway Bk; R Stour (Warks) - source to conf Nethercote Bk; R Swift source to conf Avon; Sherbourne Bk - source to conf R Avon; Smite Bk - source to conf R Sowe; Warwickshire Avon Catchment	2015	Severn Trent Water
BOD; Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure no deterioration of receiving water quality due to increased consented discharge flows at one sewage treatment works Hallow STW	Laughern Bk - source to conf R Teme; Teme Catchment	2015	Severn Trent Water
BOD; Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure no deterioration of receiving water quality due to increased	Cage Bk - source to conf R Wye ; R Monnow - conf Afon Honddu to conf R Wye; Worm Bk - source to conf R	2012	Dwr Cymru

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	consented discharge flows at three sewage treatment works, Pontrilas STW, Much Dewchurch STW, Kingstone STW	Monnow; Wye Catchment		
BOD; Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure no deterioration of receiving water quality due to increased consented discharge flows at two sewage treatment works, Rhydlafar STW, Rhiwsaeson STW	Nant Clun - source to conf Ely R; Nant Dowlais - source to conf Ely R; South East Valleys Catchment	2012	Dwr Cymru
BOD; Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure no deterioration of receiving water quality due to increased consented discharge flows at two sewage treatment works; Chaddersley Corbett STW, Cutnall Green STW	Hadley Bk - source to conf R Salwarpe; Worcestershire Middle Severn Catchment	2015	Severn Trent Water
BOD; Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure no deterioration of receiving water quality due to increased consented discharge flows at two sewage treatment works; Longhope STW, Coaley STW	The Cam R source to conf Glos and Sharpness Canal; Wbury Bk - source to mouth; Severn Vale Catchment	2015	Severn Trent Water
BOD; Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure no deterioration of receiving water quality due to increased	Afon Cain - conf Nant Fyllon to conf The Brogan; Weir Bk - source to conf R Severn; Severn Uplands Catchment	2015	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	consented discharge flows at two sewage treatment works; West Felton STW, Llanfyllin STW			
BOD; Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Improve BOD & ammonia levels at sewage treatment works discharges to help achieve good status, One sewage treatment works at Lower Penn STW	Merryhill Bk - source to conf Wom-Penn Bk; Worcestershire Middle Severn Catchment	2012	Severn Trent Water
Nutrients; Phosphate	Actions under PR09 (AMP5) Water Industry Investment programme - To ensure compliance with Urban Waste Water Treatment directive Sensitive area designation, phosphates will be removed from six sewage treatment works discharges at Drotwich STW, Bromsgrove STW, Kidderminster STW, Lower Gornal STW, Trescott STW, Wombourne STW	Bobs-Holbeche Bk - source to conf Smestow Bk; R Salwarpe - conf Elmbridge Bk to conf R Severn; R Salwarpe to conf Elmbridge Bk; R Stour (Worcs) - conf Smestow Bk to conf R Severn; Smestow Bk - source to conf Wom-Penn Bk; Wom-Penn Bk - conf Merryhill Bk to conf Smestow Bk; Worcestershire Middle Severn Catchment	2014	Severn Trent Water
Nutrients; Phosphate	Actions under PR09 (AMP5) Water Industry Investment programme - To ensure compliance with Urban Waste Water Treatment directive Sensitive area designation, phosphates will be removed from three sewage treatment works discharges at Blackminster	Badsey Bk - conf Bretforton Bk to conf R Avon; R Itchen - conf R Stowe to conf R Leam; R Swift source to conf Avon; Warwickshire Avon Catchment	2014	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	STW, Itchen Bank STW, Lutterworth STW			
Nutrients; Phosphate	Actions under PR09 (AMP5) Water Industry Investment programme - To ensure compliance with Urban Waste Water Treatment directive Sensitive area designation, phosphates will be removed from three sewage treatment works discharges at Newport STW, Market Drayton STW, Rushmoor STW	R Tern - conf Coal Bk to conf Bailey Bk; R Tern - conf R Meese to conf R Roden; Strine Bk - source to conf Wall Bk; Shropshire Middle Severn Catchment	2014	Severn Trent Water
Phosphate	Actions under PR09 (AMP5) Water Industry Investment programme - Improvement of Continuous Sewage Discharges phosphates will be removed from one sewage treatment works discharge to meet requirements of Habitats Directive RoC, Talgarth STW	Afon Llynfi - conf Dulas Bk to conf R Wye; Wye Catchment	2015	Dwr Cymru
Investigations - PR09 (AMP5) Water Industry Investment Programme (2010-2015)				
Abstraction and other artificial flow pressures	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation to determine cost effective action to manage abstraction to support good ecological potential, and local measures: River Sherbourne, North Kilworth	R Sherbourne - source to conf R Sowe; Warwickshire Avon - Coal Measures Coventry; Warwickshire Avon - Secondary Mudrocks; Warwickshire Avon Catchment	2012	Severn Trent Water; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction and other artificial flow pressures	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation to determine cost effective action to manage abstraction to support good ecological status: Biss Brook	Biss Bk - source to conf unnamed trib; Bristol Avon & North Somerset Streams Catchment	2012	Environment Agency; Wessex Water
Abstraction and other artificial flow pressures	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation to determine cost effective action to manage abstraction to support good status: Worcestershire Middle Severn - PT Sandstone	Worcestershire Middle Severn - PT Sandstone ; Severn RBD	2012	Severn Trent Water; South Staffordshire Water; Environment Agency
Abstraction and other artificial flow pressures	Investigations under PR09 (AMP5) Water Industry Investment programme - Programme of investigation of ecological impacts of managed flows in HMWBs with Water supply use	Severn RBD	2012	Environment Agency; Water companies
Abstraction and other artificial flow pressures	Investigations under PR09 (AMP5) Water Industry Investment programme -Investigation at BAP site perceived to be adversely affected by abstraction : EII Brook	EII Bk - source to conf R Leaddon; Severn Vale - PT Sandstone Newent; Severn Vale Catchment	2012	Environment Agency; Severn Trent Water
Abstraction and other artificial flow pressures	Investigations under PR09 (AMP5) Water Industry Investment programme -Investigation to determine cost effective action to manage abstraction to support good ecological status: Afon Cownwy	Afon Cownwy - source to conf Afon Vyrnwy; Severn Uplands Catchment	2012	Severn Trent Water; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction and other artificial flow pressures	Investigations under PR09 (AMP5) Water Industry Investment programme -Investigation to determine cost effective action to manage abstraction to support good ecological status: Cinderford Brook, River Leadon	Cinderford Bk - source to conf Blackpool Bk; R Leadon - conf Preston Bk to conf Glynch Bk; Severn Vale - PT Sandstone Newent; Severn Vale Catchment	2012	Severn Trent Water; Environment Agency
Abstraction and other artificial flow pressures	Investigations under PR09 (AMP5) Water Industry Investment programme -Investigation to determine cost effective action to manage abstraction to support good ecological status: Lonco Brook, River Tern	Lonco Bk - source to conf R Meese; R Tern - source to conf Loggerheads Bk; Shropshire Middle Severn - PT Sandstone East Shropshire; Shropshire Middle Severn Catchment	2012	Environment Agency; Severn Trent Water
Abstraction and other artificial flow pressures	Investigations under PR09 (AMP5) Water Industry Investment programme -Investigation to determine cost effective action to manage abstraction to support good ecological status: Stratford Brook, Albrighton Brook, Burlington Brook, Hadley Brook, Merryhill Brook, Battlefield Brook	Albrighton Bk/R Worfe to conf Wesley Bk; Battlefield Bk - source to conf Spadesbourne Bk; Burlington Bk - source to conf Neachley Bk; Hadley Bk - source to conf R Salwarpe; Merryhill Bk - source to conf Wom-Penn Bk; Stratford Bk - source to conf Hilton Claverley Bk; Warwickshire Avon - PT Sandstone Bromsgrove South; Worcestershire Middle Severn - PT Sandstone ; Worcestershire Middle Severn Catchment	2012	Environment Agency; Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
BOD; Ammonia	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of impact of Sewage discharges / assets on the requirements of the CROW Act at two sites	Ely R - conf Nant Clun to Allot Gardens, Ely; South East Valleys Catchment	2012	Dwr Cymru
BOD; Ammonia; Faecal indicator organisms; Phosphate	Action & Investigations under PR09 (AMP5) Water Industry Investment programme - Improvement and investigation of water company assets in the Bristol Avon and North Somerset Streams Catchment. These include: - Better bathing water quality as a result of schemes carried out to improve discharges from Weston-Super-Mare Sewage Treatment Works (STW) and Black Rock Combined Sewer Overflow (CSO), alongside related investigations at Western Main and Uphill Slipway Bathing Water- A number of improvements to intermittent discharges in Bristol under the Urban Waste Water Treatment Directive	Bristol Avon & North Somerset Streams Catchment	2010	Wessex Water
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigate emissions from STWs and appraise options (to reduce at source or treat at STW) to meet EQS	R Chelt - source to conf Leigh Bk; Severn Vale Catchment	2012	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	and reduce / cease emissions in this or subsequent rounds at one Sewage treatment works; Hayden STW			
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigate emissions from STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce / cease emissions in this or subsequent rounds at two sewage treatment works; Lower Gornal STW, Gospel End STW	Bobs-Holbeche Bk - source to conf Smestow Bk; Wom-Penn Bk - source to conf Merryhill Bk; Worcestershire Middle Severn Catchment	2012	Severn Trent Water
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigate emissions from STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce / cease emissions in this or subsequent rounds. Two sewage treatment works; Dunchurch STW, Honeybourne STW	Cow Honeybourne Bk - source to conf Bretforton Bk; R Leam - conf Rains Bk to conf R Itchen; Warwickshire Avon Catchment	2012	Severn Trent Water
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of drinking water source catchments to identify problems and appraise options to facilitate compliance with Article 7 of WFD at five drinking water sources in the Shropshire Middle Severn	Severn Uplands - PT Sandstone Knockin; Shropshire Middle Severn - PT Sandstone East Shropshire; Shropshire Middle Severn Catchment	2012	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	catchment			
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of drinking water source catchments to identify problems and appraise options to facilitate compliance with Article 7 of WFD at four drinking water sources in the Warwickshire Avon catchment	River Leam - conf R Itchen to conf R Avon; Warwickshire Avon - Coal Measures Coventry; Warwickshire Avon - PT Sandstone Bromsgrove South; Warwickshire Avon - Secondary Mudrocks; Warwickshire Avon Catchment	2012	Severn Trent Water
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of drinking water source catchments to identify problems and appraise options to facilitate compliance with Article 7 of WFD at sixteen drinking water sources in the Worcestershire Middle Severn catchment	R Severn - conf R Worfe to conf R Stour; Severn Vale - PT Sandstone Newent; Worcestershire Middle Severn - PT Sandstone ; Worcestershire Middle Severn Catchment	2012	Severn Trent Water; South Staffordshire Water
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of drinking water source catchments to identify problems and appraise options to facilitate compliance with Article 7 of WFD at two drinking water sources in the Severn Uplands	R Severn - conf Bele Bk to conf Sundorne Bk; Shropshire Middle Severn - PT Sandstone East Shropshire; Severn Uplands Catchment	2012	Severn Trent Water

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	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of drinking water source catchments to identify problems and appraise options to facilitate compliance with Article 7 of WFD at two drinking water sources in the Teme catchment	Teme - Secondary Combined; Teme Catchment	2012	Severn Trent Water
Phosphate	Investigations under PR09 (AMP5) Water Industry Investment programme - Local investigation of phosphates in two catchments	Usk Catchment; Wye Catchment	2012	Dwr Cymru
Pressures on groundwater (GW) balance; Abstraction	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation to determine cost effective action to manage abstraction to support good GW quantitative status	Bristol Avon Forest Marble; Severn RBD	2012	Environment Agency; Wessex Water
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Phosphate	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigate emissions from three STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce/cease emissions in this or subsequent rounds. Talgarth STW, Builth Wells STW, Kington STW	Afon Llynfi - conf Dulas Bk to conf R Wye; R Arrow - conf Gilwern Bk to conf R Lugg; R Wye - conf R Irfon to Brewardine Br; Wye Catchment	2012	Dwr Cymru
Other Water Industry Actions				
2,4-D	Address issue as priority action within this VI Pilot Catchment. Water industry	River Leam - conf R Itchen to conf R Avon	2010	Pesticides Voluntary Initiative

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	catchment investigation to establish source of pollutant			
Abstraction	Coordinated education and awareness on water efficiency and re-use to promote value of water	Severn RBD	2012	Water companies
Abstraction	Ensure the need for appropriate Water Cycle Strategies are included in regional and local plans, particularly in growth or high risk areas	Severn RBD	2012	Defra; Environment Agency; Ofwat; Regional Development Agencies; Water companies; 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)	Severn RBD	2012	Environment Agency; Water companies
Abstraction	Include strong water efficiency policies in Spatial Strategies and Local Development Plans / Frameworks	Severn RBD	2012	Regional Assemblies; Welsh Assembly Government; Local Authorities; Water companies
Abstraction	Reduction in demand and leakage through external metering in customer pipes, customer supply pipe repair, systematic pipe replacement and active leakage control.	Severn RBD	2010	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction	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	Severn RBD	Implemented	Environment Agency; Regional Development Agencies; Water companies
Abstraction	Reduction of demand for water through promotion of free household meters	Severn RBD	Implemented	Water companies
Abstraction	Reduction of leakage through increased rate of replacement of old or damaged pipes	Severn RBD	Implemented	Water companies
Abstraction	Schools based education and awareness campaigns for sustainable water use. E.g. Severn Trent Water led project in partnership with the Environment Agency to educate and install water saving equipment in schools in Telford & Wrekin, Worcestershire and Coventry local authority areas	Severn RBD	Implemented	Water companies; Environment Agency
Ammonia; Cryptosporidium; Phosphate	Address issue as priority action within this CSF catchment	Barrow Reservoir; R Axe-Stubbingham Rhyne to conf Brean Cross Sluice; Blagdon Lake	2010	Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Colour	Water industry scheme to address diffuse pollution in the catchment	Afon Cedig - source to Lake Vyrnwy; Afon Cownwy - source to conf Afon Vyrnwy; Afon Hirddu - source to Lake Vyrnwy; Afon Nadroedd - source to Lake Vyrnwy; Eunant - source to Lake Vyrnwy (Pont Eunant); R Vrynwy - Lake Vrynwy to conf Afon Cownwy; Severn Uplands Catchment	2010	Land managers and owners; Water companies
Cryptosporidium	Address issue as priority action within this CSF catchment	Cheddar Reservoir	2010	Natural England
Cryptosporidium; Phosphate	Address issue as priority action within this CSF catchment.	Chew Valley lake	2010	Natural England
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	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	Severn RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Comply with Local Authority Contaminated Land Remediation Notices. Make use of site specific notices to remove pollution risk to groundwater	Severn RBD	Implemented	Local Authorities
Hazardous substances and non-hazardous pollutants; Priority Substances and	Control of minewater intrusion by reducing groundwater abstraction	Severn RBD	Implemented	Water companies; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Specific Pollutants				
Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone. Proactive implementation of Metaldehyde Steering Group 'Get Pelletwise' measures . Water industry scheme to address diffuse pollution in the catchment	R Frome - Slad Bk to R Severn; Trimpley Reservoir; R Teme - conf R Onny to conf R Severn	2010	Metaldehyde Steering Group, Environment Agency, Water Companies
Metazachlor; Chlortoluron; Captan; Linuron; MCPB	Re-direct existing CSF resource to address issue.	Draycote Water	2010	Natural England
Nitrate	Address drinking water abstraction through Nitrates Action Programme in Nitrates Vulnerable Zone	River Leam - conf R Itchen to conf R Avon	2010	Environment Agency
Nitrate	Address issue as priority action within this England Catchment Sensitive Farming Initiative catchment. Nitrates Action Programme in Nitrate Vulnerable Zones will help address high nitrate concentrations in drinking water abstractionsProgramme in Nitrates Vulnerable Zone	Blagdon Lake	2010	Natural England
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Comply with discharge consent conditions	Severn RBD	Implemented	Water companies
Nutrients; Nitrate	Make use of site specific notices to remove nitrate pollution risk to groundwater. (WRA S86 and S161,	Severn RBD	Implemented	Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	Groundwater Regulations, contaminated land legislation)			
Nutrients; Nitrate	Provision of first time rural sewerage schemes	Severn RBD	Implemented	Water companies
Nutrients; Nitrate	Sludge Regulations - comply with published advice to operators	Severn RBD	Implemented	Water companies; Environment Agency
Nutrients; Nitrate	Sludge Regulations – monitoring and enforcement	Severn RBD	Implemented	Environment Agency; Water companies
Nutrients; Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Implement Groundwater Protection: Policy & Practice - External education on groundwater pollution prevention	Severn RBD	Implemented	Land managers and owners; Environment Agency
Organic pollutants	Development of a strategic approach to addressing the impact of diffuse pollution through education and awareness campaigns	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Warwickshire Avon Catchment; Worcestershire Middle Severn Catchment	2012	Environment Agency; Water companies
Organic pollutants	Development of a strategic approach to catchment management and the impact of climate change in partnership with water companies	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Warwickshire Avon Catchment; Worcestershire Middle Severn Catchment	2012	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Organic pollutants	Identify intermittent polluting discharges from industrial premises in the South East Valleys catchment	R Taff - conf Rhondda R to Castle Street; South East Valleys Catchment	Implemented	Environment Agency
Organic pollutants	Reduce impact from organic pollution by implementing a partnership project to tackle misconnections on the Yazor Brook	Yazor Bk - source to conf R Wye; Wye Catchment	2010	Dwr Cymru
Pesticides (total)	Re-direct existing CSF resource to address issue	R Wye - conf R Irfon to Brewardine Br	2010	Natural England
Pesticides; Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone	R Severn - conf R Teme to conf R Avon; Draycote Water	2010	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants	General guidance to improve Pesticide use through the Amenity Forum	Severn RBD	Implemented	Amenity Forum
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants; Nutrients	Operation Streamclean, a partnership project to identify and correct sewerage misconnections at domestic properties	Bristol Avon & North Somerset Streams Catchment	Implemented	Bristol City Council; Environment Agency; Wessex Water
Priority Substances and Specific Pollutants; 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)	Severn RBD	2012	Industry leads; Land managers and owners; Water companies; Environment Agency
Saline intrusion	CAMS – Implement abstraction licensing controls to minimise and manage risks from saline intrusion	Severn RBD	Implemented	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Other Water Industry Investigations				
2,4-D; Asulam; Triclopyr; MCPA	Further monitoring to confirm risk of failure of WFD Article 7	R Axe-Stubbingham Rhyne to conf Brean Cross Sluice	2010	Environment Agency; Water companies
Abstraction	Investigation to improve confidence in groundwater quantitative status result	Staffordshire Trent Valley - PT Sandstone Bishops Wood	2012	Environment Agency
Abstraction and other artificial flow pressures	Investigation at local nature conservation site perceived to be adversely affected by abstraction River Dore and tributaries	R Dore - source to conf Worm Bk; Wye Catchment	2012	Dwr Cymru; Environment Agency
Ammonia; Colour	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can be considered	R Severn - conf R Worfe to conf R Stour	2010	Environment Agency
Arsenic	Further monitoring to confirm risk of failure of WFD Article 7	Chew Valley lake	2010	Environment Agency; Water companies
Asulam; Dieldrin; Simazine; Diuron; Atrazine; Isoproturon	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	River Leam - conf R Itchen to conf R Avon	2010	Central Government; Environment Agency
Asulam; Isoproturon	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	Caban-coch Reservoir; Claerwen Reservoir	2010	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Atrazine; Isoproturon; Simazine	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	R Severn - conf R Worfe to conf R Stour	2010	Central Government; Environment Agency
Atrazine; Simazine; Isoproturon; Diuron	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	R Axe-Stubbingham Rhyne to conf Brean Cross Sluice	2010	Central Government; Environment Agency
Carbetamide	Further monitoring to confirm risk of failure of WFD Article 7	R Severn - conf R Worfe to conf R Stour	2010	Environment Agency; Water companies
Chemicals - all	Investigation of pollution incidents	Severn RBD	2012	Water companies
Chemicals - Specific pollutants; Nutrients; Organic pollutants	Improve understanding of sources of pollution on the Morlais Brook (Merthyr) by carrying out detailed investigation of sewerage system and CSOs and quantifying impacts from each on water quality, aesthetic and ecological quality	Nant Morlais - source to conf R Taff; South East Valleys Catchment	Implemented	Environment Agency; Dwr Cymru
Chemicals - Specific pollutants; Organic pollutants	Attempt to identify misconnections, overflows and hydraulically overloaded sewers. Sources of information could include Severn Trent Waters GIS drainage network, the Environment Agencies pluvial flooding database	Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Warwickshire Avon Catchment; Worcestershire Middle Severn	2012	Severn Trent Water; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	and local authority GIS layers	Catchment		
Chlortoluron	Further monitoring to confirm risk of failure of WFD Article 7	Chew Valley lake	2010	Environment Agency; Water companies
Chlortoluron; Diuron; Mecoprop; MCPA	Further monitoring to confirm risk of failure of WFD Article 7. Water industry catchment investigation to establish source of pollutant	R Severn - conf R Worfe to conf R Stour	2010	Environment Agency; Water companies
Chlortoluron; Captan, 2,4-D; Terbutryn; Terbutryn; MCPB; MCPA; Linuron; Mecoprop; Carbetamide	Further monitoring to confirm risk of failure of WFD Article 7	R Teme - conf R Onny to conf R Severn	2010	Environment Agency; Water companies
Clopyralid; Fluroxypyr; Iprodione; Bentazone; Carbendazim; Metazachlor; Chlortoluron	Address issue as priority action within this VI Pilot Catchment. Water industry catchment investigation to establish source of pollutant	River Leam - conf R Itchen to conf R Avon	2010	Pesticides Voluntary Initiative, Environment Agency, Water companies
Colour	Further monitoring to confirm risk of failure of WFD Article 7	Barrow 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	Afon Nadroedd - source to Lake Vyrnwy, R Vyrnwy - Lake Vyrnwy to conf Afon Cownwy, Afon Cedig - source to Lake Vyrnwy, Afon Cownwy - source to conf Afon Vyrnwy, Afon Hirddu - source to Lake Vyrnwy, 'Eunant - source to Lake Vyrnwy (Pont Eunant)	2010	Environment Agency; Water companies
Colour	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year	Draycote Water	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	catchment action plan can be considered			
Dalapon	Further monitoring to confirm risk of failure of WFD Article 7. Water industry catchment investigation to establish source of pollutant	River Leam - conf R Itchen to conf R Avon	2010	Environment Agency; Water companies
Dalapon; Carbetamide	Further monitoring to confirm risk of failure of WFD Article 7	Draycote Water	2010	Environment Agency; Water companies
Geosmin; 2-methyl iso borneol	Further monitoring to confirm risk of failure of WFD Article 7	Caerfanell - source to conf R Usk	2010	Environment Agency; Water companies
Glyphosate	Further monitoring to confirm risk of failure of WFD Article 7	R Frome - Slad Bk to R Severn; R Teme - conf R Onny to conf R Severn; River Leam - conf R Itchen to conf R Avon	2010	Environment Agency; Water companies
Glyphosate; Mecoprop - p	Further monitoring to confirm risk of failure of WFD Article 7	Blagdon Lake	2010	Environment Agency; Water companies
Iprodione; Nitrate; Mecoprop - p; Mecoprop; MCPB; Geosmin; Chlortoluron; Chlortoluron; Colour; Cyfluthrin; Dalapon; Difenzoquat; MCPA; Asulam; Linuron; Ammonia; 2-methyl iso borneol; 2,4-D; Triclopyr; Glyphosate; Captan; Diuron; Terbutryn	Further monitoring to confirm risk of failure of WFD Article 7	Barrow Reservoir; Blagdon Lake; Caerfanell - source to conf R Usk; Chew Valley lake; Draycote Water; R Axe-Stubbingham Rhyne to conf Brean Cross Sluice; R Frome - Slad Bk to R Severn; R Severn - conf R Worfe to conf R Stour; R Teme - conf R Onny to conf R Severn; R Wye - conf R Irfon to Brewardine Br; River Leam -	2010	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
		conf R Itchen to conf R Avon		
Isoproturon	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	Barrow Reservoir	2010	Central Government; Environment Agency
Isoproturon; Atrazine; Trifluralin; Asulam; Simazine; Diuron	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	R Teme - conf R Onny to conf R Severn	2010	Central Government; Environment Agency
Isoproturon; Simazine; Atrazine	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this.	R Wye - conf R Irfon to Brewardine Br	2010	Central Government; Environment Agency
MCPA; Linuron; Colour; Iprodione; Difenzoquat; Cyfluthrin; Carbetamide; Mecoprop	Further monitoring to confirm risk of failure of WFD Article 7	R Wye - conf R Irfon to Brewardine Br	2010	Environment Agency; Water companies
Metaldehyde	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can be considered. Water industry catchment scheme to address diffuse pollution in	Blagdon Lake; Chew Valley lake	2010	Metaldehyde Steering Group; Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	the catchment. Proactive implementation of Metaldehyde Steering Group 'Get Pelletwise' measures			
Nitrate; Hazardous substances and non-hazardous pollutants; Phosphate; Priority Substances and Specific Pollutants	Investigation of Groundwater Dependent Terrestrial Ecosystems (GWDTEs) to assess if they have been significantly damaged as a result of groundwater pollution	Severn RBD	Implemented	Environment Agency
Nitrate; MCPA; Mecoprop - p; 2,4-D; Ammonia; Chlortoluron	Further monitoring to confirm risk of failure of WFD Article 7	R Frome - Slad Bk to R Severn	2010	Environment Agency; Water companies
Nutrients	Severn Trent Water catchment investigation at Bratch to establish source of pollutant	Worcestershire Middle Severn - PT Sandstone	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Brockhill to establish source of pollutant	Warwickshire Avon - PT Sandstone Bromsgrove South	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Bromsberrow to establish source of pollutant	Severn Vale - PT Sandstone Newent	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Brownhill Green to establish source of pollutant	Warwickshire Avon - Coal Measures Coventry	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Burcot to establish source of pollutant	Worcestershire Middle Severn - PT Sandstone	2012	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Nutrients	Severn Trent Water catchment investigation at Cosford to establish source of pollutant	Worcestershire Middle Severn - PT Sandstone	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Diddlebury to establish source of pollutant	Teme - Secondary Combined	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Dunhampton to establish source of pollutant	Worcestershire Middle Severn - PT Sandstone	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Eytton to establish source of pollutant	Shropshire Middle Severn - PT Sandstone East Shropshire	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Grindleforge to establish source of pollutant	Worcestershire Middle Severn - PT Sandstone	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Haseley Spring to establish source of pollutant	Warwickshire Avon - Secondary Mudrocks	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Lilleshall to establish source of pollutant	Shropshire Middle Severn - PT Sandstone East Shropshire	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Lizard Mill to establish source of pollutant	Worcestershire Middle Severn - PT Sandstone	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Oakley Farm to establish source of pollutant	Teme - Secondary Combined	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Ruyton II Towns to	Severn Uplands - PT Sandstone Knockin	2012	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
	establish source of pollutant			
Nutrients	Severn Trent Water catchment investigation at Sheriffales to establish source of pollutant	Worcestershire Middle Severn - PT Sandstone	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Shiffords Bridge to establish source of pollutant	Shropshire Middle Severn - PT Sandstone East Shropshire	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Shifnall to establish source of pollutant	Worcestershire Middle Severn - PT Sandstone	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Stoke on Tern to establish source of pollutant	Shropshire Middle Severn - PT Sandstone East Shropshire	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Tomhill to establish source of pollutant	Worcestershire Middle Severn - PT Sandstone	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Washingstocks to establish source of pollutant	Worcestershire Middle Severn - PT Sandstone	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Wellings to establish source of pollutant	Shropshire Middle Severn - PT Sandstone East Shropshire	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Whitford to establish source of pollutant	Worcestershire Middle Severn - PT Sandstone	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Wildmoor to establish source of pollutant	Worcestershire Middle Severn - PT Sandstone	2012	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Nutrients; Phosphate	R&D on fate and transport of phosphate in groundwater to determine impact on surface water	Severn RBD	2012	Environment Agency; Water companies
Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Monitor the recovery of the Taf Fechan following the 2006 pollution incident	Taf Fechan - source to conf Afon Taf Fawr; South East Valleys Catchment	Implemented	Environment Agency; Merthyr Tydfil Angling Association
Pesticides; Lead; Nutrients; Various	Investigation of catchment sources (River Leam)	Warwickshire Avon Catchment	2012	Severn Trent Water
Pesticides; Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone. Water industry catchment investigation to establish source of pollutant	R Severn - conf R Worfe to conf R Stour; River Leam - conf R Itchen to conf R Avon	2010	Environment Agency; Water companies
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Severn Trent Water catchment investigation at Tack Lane to establish source of pollutant	Worcestershire Middle Severn - PT Sandstone	2012	Water companies
Sediments (as a direct pollutant); Organic pollutants; Nutrients	Investigate removal localised pollution caused at Taff-Nant Clydach by inadequate septic tank shared by a number of properties by installation of a new sewer	South East Valleys Catchment	2012	Environment Agency; Dwr Cymru
Simazine; Isoproturon; Diuron	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this	Draycote Water; R Frome - Slad Bk to R Severn	2010	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Natura 2000 and SSSI plans & programmes				
Nutrients	Work towards favourable condition on the Aqualate Mere SSSI and River Teme SSSI by reviewing discharge consents and implementing regional action plan	Shropshire Middle Severn Catchment; Teme Catchment	2010	Environment Agency
Nutrients	Work towards favourable condition on Tickenham, Nailsea and Kenn Moors SSSI, Aqualate Mere SSSI and Maer Pool SSSI by implementing AMP 4 schemes	Bristol Avon & North Somerset Streams Catchment; Shropshire Middle Severn Catchment	2012	Severn Trent Water; Wessex Water
Nutrients; Sediments (as a direct pollutant)	Contribute to favourable condition on Tickenham, Nailsea and Kenn Moors SSSI, Marton Pool, Chirbury SSSI, Montgomery Canal, Aston Locks - Keeper's Bridge SSSI, Fenemere SSSI, Sweat Mere and Crose Mere SSSI, White Mere SSSI, River Teme SSSI, Bomere, Shomere and Betton Pools SSSI, Puxton Moor SSSI, Aqualate Mere SSSI, Coombe Hill Canal SSSI, Westwood Great Pool SSSI and Maer Pool SSSI by developing a pollution action plan	Bristol Avon & North Somerset Streams Catchment; Severn Uplands Catchment; Severn Vale Catchment; Shropshire Middle Severn Catchment; Teme Catchment; Worcestershire Middle Severn Catchment	2012	Natural England; Environment Agency; Water companies
Abstraction and other artificial flow pressures	Modification of Abstraction licence to ensure no adverse effect on integrity of Natura 2000 site & to prevent fish entrainment: River Wye SAC	Wye Catchment	2015	Severn Trent Water; Environment Agency; Dwr Cymru

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Date	
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	■ Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through specific habitats works (see Annex D)	Severn RBD	2012	British Waterways, Countryside Council for Wales, Defence Estates, Environment Agency, Local Authorities, National Parks, National Trust, RSPB, Water companies, Welsh Assembly Government, Wildlife Trusts
Abstraction and other artificial flow pressures; Nutrients; Physical modification	Work towards Favourable Conservation Status on Natura 2000 Protected Areas through Specific Management Works to address water quality and morphology pressures (See Annex D)	Severn RBD	2012	Natural England
Abstraction and other artificial flow pressures; Nutrients; Physical modification; Sediments (as a direct pollutant)	Work towards Favourable Conservation Status on Natura 2000 Protected Areas by review of consents, revoking or amending; abstraction licences, Discharge/PPC Consents & Implementing AMP Schemes (See Annex D)	Severn RBD	2012	Environment Agency