

# Environmental Drivers for AMP4

ENVIRONMENT AGENCY  
COUNTRYSIDE COUNCIL FOR WALES  
ENGLISH NATURE

## **Introduction**

This paper was produced by the Environment Agency. The parts that deal with nature conservation were prepared with English Nature and the Countryside Council for Wales.

The paper identifies established and potential drivers for improvements to the environment that might require action on water industry assets from 2005 to 2010 and, in some cases, beyond. This includes statutory drivers, current policy requirements, and things that might be required by Ministers, for example when the content of some Directives is clearer.

The purpose of the paper purpose is to inform the draft business plans of water companies for the 4<sup>th</sup> Periodic Review of Prices (PR04, or AMP4).

Section A sets out obligations that we presume would be met in the absence of any environmental drivers. After this we list the drivers in Section B.

## **A. Maintain Planned Level of Environment Protection**

This section describes established and planned obligations, largely set up for the 3<sup>rd</sup> Periodic Review (AMP3). The companies must maintain and achieve these through AMP4.

1. deliver the National Environment Programme approved by Ministers for AMP3;
2. comply with the consents in force at the end of AMP3;
3. ensure compliance with these legal consents in the future;

4. achieve tighter<sup>1</sup> permit limits in cases of applications to discharge more flow<sup>2</sup>, in cases where permit limits were required to be tighter<sup>3</sup> than needed for the Urban Waste Water Treatment Directive or other established statutory Uniform Emission Standards, in order to meet Environmental Quality Standards in River Quality Objectives or Directives to the agreed level of reliability (This amounts to No Deterioration through no increase in permitted load);
5. comply with the Agency's 2002 policy for Dangerous Substances;
6. comply with the Agency's 2001 policy on measuring flows;
7. comply with the Agency's 2001 policy on for Urban Pollution Management (for the control of intermittent discharges);
8. achieve all the standards and conditions that apply to new discharges by all drivers and all Directives;
9. achieve all the standards and conditions required by all drivers as a consequence of increase in Population Equivalent through any planned rationalisation of sewage treatment that leads, for example, to the closure or some works and the diversion of flow to other works;
10. comply with flow conditions in discharge consents, including cases where the improved measurement of flow indicates non-compliance or a risk of non-compliance;
11. ensure no intermittent discharges are "unsatisfactory" (except those classed and listed as "unsatisfactory" for AMP3 that are covered under New Requirements (Section C));
12. comply with Conditional Notices issued under the Groundwater Regulations to control the loss of Listed Substances to underground waters;
13. meet the requirements of Section 101A of the Water Industry Act 1991 (as amended by the Environment Act 1995), which places a duty upon the sewerage undertaker to provide connection to the foul sewer where certain criteria are met;
14. reduce the number of pollution incidents resulting from foul discharges to public surface water sewers.
15. ensure that new abstractions and discharges do not adversely affect a site designated under the Habitats Directive, with the exception of cases where overriding public interest is supported.

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<sup>1</sup> Reductions in concentrations that compensate for the increases in flow

<sup>2</sup> Including cases where improved measurement of flow indicates non-compliance or a risk of non-compliance with the permitted flow

<sup>3</sup> Or will be under the new flow

## **B. New Requirements**

These are presented below as tables. The tables are not in priority order, but within each table, the known statutory items, or the more certain requirements, tend to be listed first<sup>4</sup>.

Each item will be the subject of guidance that spells out the way in which schemes are developed.

For sewage works, for example, we assume initially that layers of work could need to cover, as if in cumulative sequence, the chosen level of work for:

- the Directive on Urban Waste Water Treatment Directive;
- requirements from Environment Quality Standards (like the Freshwater Fish Directive and River Quality Objectives);
- further requirements for the Habitats Directive and other nature conservation drivers; and,
- the Water Framework Directive

This means that we shall start out by assuming for each table, and each item in a table, that a scheme will cover the requirements added because of that item and table. Work for the Habitats Directive should presume, in the first instance, that the work for the Freshwater Fish Directive goes ahead. This stance, which is spelt out in many of the tables, will require a review of the content of schemes. For example, if an assumed level of work for the Freshwater Fish Directive turns out to be unnecessary some of that work might then be required for the Habitats Directive.

The proposed schemes will be appraised to ensure the selection of the most cost-effective way of achieving the agreed and final package of environmental outcomes.

### **Directive on Urban Waste Water Treatment (UWWTD)**

This Directive imposes standards on sewage effluents. The stringency depends on the size of the discharge and on the type of water to which it is discharged. These schemes are statutory.

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<sup>4</sup> Though in many cases the items towards the ends of the lists are options rather than a hierarchy

The Directive may require “additional” treatment for certain discharges that are thought to contribute to eutrophication in specified Sensitive Areas. This mainly affects freshwaters. Extra treatment is also required for discharges to freshwaters that have high concentrations of nitrate and are abstraction points for supplies of drinking water.

Some of these schemes may also be part of the Agency’s Strategy on Eutrophication and contribute to the aims of other Drivers.

Section A	Ongoing achievement of the basic requirements for sewage treatment and sewerage. Intermittent discharges newly found to be unsatisfactory.
U1	Discharges that through growth of population must achieve more of the Directive’s standards, including those for existing Sensitive Areas.
U2	More stringent treatment, which would have an effect on the level of eutrophication, at treatment works (above 10,000 pe) whose discharges to the catchment of existing Eutrophic Sensitive Areas do not already receive appropriate further treatment
U3	Discharges associated with new inland Eutrophic Sensitive Areas (Phosphorus)
U4	Discharges associated with new inland Sensitive Areas (Nitrate)
U5	Discharges associated with new estuarine/coastal Eutrophic Sensitive Areas (Nitrogen and/or Phosphorus)

## Sewage Sludge Treatment

It is Government policy that in most cases the Best Practicable Environmental Option (BPEO) for the management of sewage sludge is recycling to agricultural land. The use of sewage sludge in agriculture is regulated through The Sludge (Use in Agriculture) Regulations (1989).

The Regulations are being revised to improve the standards of treatment for sewage sludge used in agriculture. A substantial part of the work required to meet these improved standards should be delivered through AMP3, although implementation of the revised Regulations has been delayed.

The EU is revising the 1986 Sludge Directive and developing a Composting Directive. When finalised, both will have an impact on how the water companies manage sewage sludge. At this stage the time-scales and requirements for implementing either Directive is not clear,

though proposed standards for metals and organic pollutants may put further pressure on the agricultural option for sewage sludge management.

The timetables for much of this will not be specified in time for AMP4. For these and requirements of similar uncertainty we shall aim to map out what might be required, and leave until later in the AMP4 timetable the decision on what should be planned for, what schemes may be needed and when, and how it should be funded.

The Nitrate Directive may reduce the land available for sewage sludge recycling because of an increase in the area of land designated as Nitrate Vulnerable Zones. As a result there may be a move towards other management options, particularly incineration.

Additional requirements for nutrient removal, for example as a result of the UWWT and Habitats Directives, over and above that resulting from AMP3, will result in additional volumes of sludge to be treated. This should be considered under the drivers that generate the additional work.

Section A	Ongoing achievement of the basic requirements for sewage sludge treatment and disposal of the volume of sewage sludge given in Table 4S Company Supplementary Report by the end of 2005 to the standards set down in ADAS's 'Safe Sludge Matrix.'
SL1	Revised EU Sludge Directive: Additional treatment and disposal over and above Section A to meet any new obligations if they arise (unlikely to be adopted before 2003)
SL2	New EU Composting Directive: Additional treatment and disposal over and above Section A to meet any new obligations if they arise
SL3	New EU Incineration Directive: Additional alterations to allow new and existing incinerators to meet requirements of the Directive
SL4	The Contaminated Land Regulations
SL5	Restrictions on the spreading of sludge because of the gathering ground around reservoirs, or around boreholes. (Improvements here because of SSSIs will be listed under the heading for SSSIs and not under Sewage Sludge Treatment).

## Groundwater

Several of the other drivers will be relevant to groundwater, for example, the reviews under the Habitats Directive. In addition there are drivers which have specific relevance to groundwater protection.

The Groundwater Regulations require no entry of List I Substances and no pollution by List II Substances. Discharges of Listed Substances require prior investigation and authorisation, leading to conditions to prevent a breach of the Regulations. Water companies may need to undertake schemes to:

- investigate the impacts; and,
- undertake consequent improvements.

G1	Investigations and improvements for sewage treatment works which discharge directly to ground
G2	Investigations and improvements for sewage treatment works which discharge to ground via rivers
G3	Investigations and improvements for combined sewage overflows and similar intermittent discharges from sewerage systems

Schemes may be required to investigate risks to groundwater from contaminated sites and subsequently to carry out remedial works. These can be enforced by:

- Remediation Notices under the Contaminated Land Regulations where contaminated soils may continue to impact on groundwater; or,
- Works Notices, where groundwater is contaminated but the soils are no longer a source.

G4	Investigations and schemes for contaminated soils or groundwater
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There may be cases where the unsustainable abstraction of groundwater is shown to have too great an impact on water quality. A reduction in abstraction may be required and water companies may have to seek an alternative source.

G5	Unsustainable abstraction of groundwater that affects water quality where replacement sources may be required
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There are cases where water companies are taking special measures to control the spread of historic pollution

G6	Continued pumping and treatment of contaminated sources in order to prevent the spread of pollution
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There are some currently acceptable direct discharges to groundwater by that will have to cease on implementation of the Water Framework Directive. These will have to be turned into indirect discharges, or treated.

WFG3	Discharges to groundwater that will be prohibited under the Water Framework Directive (Improvements here will be listed under the heading for the Water Framework Directive and not under "Groundwater" )
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### **Best Available Technology (Use of Energy etc)**

This might be considered as guidelines for the design of schemes or as a driver in its own right.

EN1	Changes to assets or operations [(over and above R, U etc)] considered necessary for any Government strategy on sustainable development, waste, water resources, water re-use, climate change or air quality
EN2	Changes to assets or operations [over and above R, U, EN1 etc)]considered necessary for the Agency's strategies and vision. This could include developments of Sustainable Urban Drainage Systems (SUDS) and the prevention or remediation of infiltration to sewers.

### **Integrated Pollution Prevention and Control**

This might be considered as guidelines for the design of schemes or as a driver in its own right.

IPPC	Changes to assets or operations [over and above R, U, SL etc)]considered necessary for the Directive on Integrated Pollution Prevention and Control: <ul style="list-style-type: none"> <li>■ Discharges to sewer;</li> <li>■ Sludge incineration and landfill</li> </ul>
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## Dangerous Substances

This covers any extra action that may be required over and above the Agency's 2002 policy on Dangerous Substances.

This could arise, for example, where the companies cannot achieve the discharge standards required to Environmental Quality Standards, through their options to control Trade Effluents. It could be that additional treatment is required by the companies to deal with more diffuse sources of pollution.

D1	Extra work to secure compliance with List I and List II statutory standards
D2	Extra work to secure compliance with non-statutory Environmental Quality Standards

## Chemicals

This covers extra action that may be required to control chemicals.

C1	Investigations into the effectiveness of risk reduction options for removing endocrines for selected high risk sites
C2	Schemes resulting from the Agency's Chemicals Strategy (over and above R, F, D and H and strategies of the Oslo and Paris Convention (OSPAR)), including agreed policy on Direct Toxicity and possible action to remove endocrines and pharmaceuticals

## Intermittent Discharges

Discharges threatening statutory targets and RQOs in other drivers are to be listed under those other drivers. These may arise where modelling studies under the Urban Pollution Manual show that problem overflows need improving if objectives under other drivers are to be met.

Section A	"New" unsatisfactory overflows
UID1	Unsatisfactory overflows known at AMP3 but not included on the spreadsheets signed by Ministers as the Annex to 'Achieving the Quality' or in agreed updates

UID2	Improvements to the sewerage infrastructure to prevent surcharge of ingressed surface water that would lead to emergency discharges to controlled waters
UID3	Thames Tideway scheme

## Directive on Freshwater Fish

The purpose of this Directive is to protect and improve the quality of surface waters to standards to allow freshwater fish to live in favourable conditions.

There are two sets of standards, the Imperative (leading to Statutory schemes) and the Guide Standards. The UK has discretion about how the Guide Standards have to be observed and the time by which action is taken to meet them.

It is planned that progress towards Guide Standards will be managed through the use of Operational Standards. These are indicators of current quality based on the Directive's Standards.

Where waters require further improvement to move towards a Guide Standard, we have to take account of costs and the wider benefits to people and the environment.

Section A	Schemes to ensure no increase in permitted load when application is made to discharge more flow
F1	Schemes to correct reported failures with Imperative Standards for existing designated reaches not covered by AMP3
F2	Schemes to ensure Imperative standards are met for new designations
F3	Schemes to correct risk of future failure with Imperative Standards not covered by AMP3
F4	Schemes to correct reported failures with Operational Standards at existing and new designations
F5	Schemes to maintain reliable compliance with Operational Standards at existing and new designations
F6	Further schemes to meet Guide Standards at existing and new designations, and to maintain compliance

## River Quality Objectives (RQO)

Every classified stretch of river has its own River Quality Objective (RQO).

This defines aspects of water quality needed to protect the needs of fish, the use of the river for recreation and to ensure water quality for abstractions for water supplies, industry and agriculture. These standards augment those required in EC Directives to protect the special needs of individual rivers.

RQOs were established and agreed with Government in 1997. They are non-statutory but subject to Government targets<sup>5</sup> that give the 1997 RQOs a requirement, at present, that falls not far short of statutory. They may be seen as a contribution to the progress required by the Water Framework Directive and as a more effective way of meeting the aims of the Freshwater Fish Directive.

It is policy to set discharge standards at the values needed to meet RQOs. The following drivers can be identified for controls on the sewage and sewerage system:

Section A	Schemes to ensure no increase in permitted load when application is made to discharge more flow
R1	Achieve the required reliability of compliance with the 1997 RQOs (for example: <ul style="list-style-type: none"> <li>● through the requirement to apply first time limits on Ammonia because of increased discharge flow as a result of growth, or</li> <li>● because of updated knowledge of upstream river flow or quality)</li> </ul>
R2	Forestall future risk of failure to meet the 1997 RQOs (for example the requirement to apply first time limits on Ammonia because of increased discharge flow as a consequence of growth)
R3	Any extensions to R1 or R2 above that would arise if there were a change to the national target for the percentage of rivers complying with their RQO ('Achieving the Quality' acknowledges this.)
R4	Any requirement to upgrade RE5 objectives to RE4 and achieve them (perhaps as preparation for the Water Framework Directive)
R5	Any requirement to upgrade RE4 objectives to RE3 and achieve them (perhaps as preparation for the Water Framework Directive)

<sup>5</sup> Public Sector Agreements  
AMP4 Drivers 1.0

R6	Other upgraded objectives set as part of planning for the Water Framework Directive
R7	Improve RQO compliant rivers which show non-compliance with biological targets (BQOs)
R8	Set and achieve RQOs for smaller (unclassified) rivers, adding these to the national set of RQOs

## Directive on Bathing Waters

The Directive sets water quality standards at well used beaches to protect public health and the environment. Like some other Directives, there are two sets of standards. There are Imperative Standards which the Government has told us must be met (these schemes are statutory) and Guide Standards which we should endeavour to meet.

Where Guide Standards have already been achieved our duty is to ensure that the present quality is maintained. Where quality is below the Guide Standards, the UK has discretion over further improvements, taking into account likely costs and benefits.

Section A	Schemes to ensure no increase in permitted load when application is made to discharge more. This includes maintaining compliance with Guide Standards
B1	Discharges affecting new coastal Bathing Waters
B2	Discharges judged to be causing failure to meet the Imperative standards at existing Bathing Waters (Few)
B3	Discharges affecting new inland Bathing Waters
B4	Schemes to achieve a proposed target of 85% of bathing waters achieving compliance with Guide Standards <sup>6</sup>
B5 <sup>7</sup>	Schemes to meet the requirements of the revised Bathing Water Directive
B6	Investigations of the impact of water company assets on Bathing Water quality
B7	Schemes to achieve a proposed target of 95% of bathing waters achieving compliance with Guide Standards
B8	Event and duration monitoring on intermittent discharges impacting on Bathing Waters, where not already installed

<sup>6</sup> Achieving the Quality' states "further progress is likely to require more action on sources of pollution not operated by the water companies."

<sup>7</sup> For driver B5, candidate schemes have already been identified with water companies as part of the study commissioned by DEFRA to assess the implications of the new Directive

B9	Impact of any review of the spill-frequency design standard of 3 spills per bathing season on average for schemes designed to achieve compliance with Guide Standards
B10	Impact of any review of the design standards for schemes to improve continuous and intermittent discharges designed to achieve the Guide Standard for faecal streptococci

## Directive on Shellfish Waters

This Directive lays down standards for waters designated as shellfisheries and aims to ensure a suitable environment for shellfish growth. There are two sets of standards, the Imperative (leading to statutory schemes) and the Guide Standards.

The UK has discretion about how the Guide Standards have to be observed and the time by which action is taken to meet them.

It is planned that progress towards Guide Standards will be managed through the use of Operational Standards. These are indicators of current quality based on the Directive's Standards.

Where waters require further improvement to move towards a Guide Standard, we have to take account of costs and the wider benefits to people and the environment.

A related Directive, the Shellfish Hygiene Directive, lays down conditions for the production and marketing of shellfish intended for human consumption. Government policy is for all designated shellfish waters to achieve the bacteriological quality necessary to achieve at least category B in the shellfish harvesting beds.

Section A	Schemes to ensure no increase in permitted load when application is made to discharge more flow. This should maintain present confidence of compliance with Guide Standards and Category A/B status in so far as the risk of failure is attributable to water industry discharges
S1	Schemes to correct reported failures with Imperative standards not covered by AMP3. This would include schemes to meet any review of Imperative standards for metals or organohalogenes.

S2	Any additional schemes required to achieve the Government's aim of meeting bacteriological standards in designated waters which will allow harvesting areas to achieve at least category B target. Improvements to continuous and intermittent discharges identified as part of AMP3 investigation programme by water companies (Anglian Water and Welsh Water). Improvements to additional CSOs, identified during design of AMP3 schemes, for which funding was not available during the AMP3 programme.
S3	Schemes for discharges affecting new Shellfish Waters to meet Imperative standards and to achieve the Government's target of category B
S4	Schemes to correct reported failures with Operational Standards
S5	Schemes to maintain reliable compliance with Operational Standards
S6	Further Schemes to meet Guide Standards
S7	Upgrade all intermittent discharges impacting on shellfisheries not improved under AMP3 to meet the requirements of the Agency' standards for achieving the requirements of the Shellfish Waters Directive (microbiological quality)
S8	Event and duration monitoring on intermittent discharges, and telemetry for emergency discharges impacting on Shellfish Waters, where not already installed.
S9	Schemes to control nutrients implicated in algal blooms that may cause Persistent Synthetic Pollutants (PSP), over and above that required under U.
S10	Further schemes at selected shellfish waters of significant economic importance or significant commercial development potential with very good underlying water quality to achieve category A under the Shellfish Hygiene Directive. <i>Achieving category A gives access to UK supermarkets.</i>
S11	Achieve category A under Shellfish Hygiene Directive for all designated shellfisheries where improvements/elimination of point source sewage discharges are likely to achieve this aim
S12	Real time notification of all spill events from all CSOs known to impact on shellfisheries
S13	Real time notification of the discharge volume from CSOs having greatest impact on shellfisheries
S14	Schemes required following the Commission's review of the Shellfish Hygiene Directive

## Directive on Surface Water Abstraction (SWAD)

Surface water abstracted for public water supply has to comply with standards which depend upon the classification of the waters abstracted and the type of treatment provided following abstraction. There are Imperative (leading to statutory schemes) and Guide Standards and the Agency has discretion about how to meet the latter.

It is planned that progress towards Guide Standards will be managed through the use of Operational Standards. These are indicators of current quality based on the Directive's Standards.

Where waters require further improvement to progress towards meeting Guide Standards, we will again have to take into account costs and the wider benefits to people and the environment.

Section A	Schemes to ensure no increase in permitted load when application is made to discharge more flow
W1	Schemes to correct reported failures with Imperative Standards not covered by AMP3
W2	Schemes to correct risk of future failure with Imperative Standards not covered by AMP3
W3	Discharges affecting any new designated points of abstraction
W4	Schemes to correct reported failures with Operational Standards
W5	Schemes to maintain reliable compliance with Operational Standards
W6	Further Schemes to meet Guide Standards, and to maintain compliance

## Habitats and Birds Directives

The Habitats and Birds Directives have been implemented in Great Britain by the Conservation (Natural Habitats &c.) Regulations 1994, commonly known as the Habitats Regulations. The purpose of these Directives is to identify and safeguard the most valuable nature conservation sites and threatened species in the European Union.

These European sites, Special Protection Areas (SPAs) and Special Areas of Conservation (SACs), form a network known as *Natura 2000*. Sites are proposed to the European Commission by Government and the devolved administrations.

In addition, as Government policy, sites designated under the Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar sites), are afforded the same protection as a matter of policy as sites designated under the Birds and Habitats Directives.

The Habitats Directive introduces a robust site protection process for SACs and SPAs. A plan or project likely to have significant effect on a site must be assessed to decide whether it would adversely affect the nature conservation interest for which the site had been designated. If it would, the plan or project may go ahead only where there is no alternative solution and where it must be carried out for imperative reasons of overriding public interest. In these circumstances necessary compensatory measures must be taken to ensure the coherence of the *Natura 2000* network. There is also a requirement to review decisions given prior to the site becoming a European site.

The Habitats Directive requires the Government to report to the European Commission on the measures it has taken to implement the Directive and meet its objectives. The next report is due with the Commission in 2006 and then 2010.

The timetable will not be specified in time for AMP4. For these and requirements of similar uncertainty we shall aim to map out what might be required, and leave until later in the AMP4 timetable the decision on what should be planned for, what schemes may be needed and when, and how it should be funded.

The Habitats Regulations state that every competent authority (which includes Ministers, Ofwat, the Agency and water companies), in the exercise of any of its functions, shall have regard to the requirements of the Habitats Directive, so far as they might be affected by those functions.

English Nature and the Countryside Council for Wales are working with the Agency on its review of consents to identify SPAs and SACs considered to be adversely affected by abstractions or discharges by water companies. The Agency's timetable for this review is to complete so called Appropriate Assessments for high, medium and low priority sites by 2004, 2006 and 2008 respectively, with any necessary revocations or variations in permits identified and planned within two years of these dates.

## Water Quality

Section A	Schemes to ensure no increase in permitted load when application is made to discharge more flow
H1	Discharges where there is a requirement to remove more phosphorus than required by U
H2	Discharges where there is a requirement to more nitrogen than required by U
H3	Discharges where there is a requirement to remove phosphorus at discharges that are too small for U
H4	Discharges where there is a requirement to remove nitrogen at discharges that are too small for U
H5	Discharges where there a requirement to remove more BOD, Suspended Solids or Ammonia than required by U, R or F
H6	Discharges where there is a requirement for controls on other determinands in excess of D or C
H7	Discharges where there is a requirement for discharges to be re-located
H8	Investigations to assess the impact of water company assets on the requirements of the Directive

Some of these schemes may also be part of the Agency's Strategy on Eutrophication.

## Water Resources

Section A	Ensure that new sources do not adversely affect the designated site, with the exception of cases where overriding public interest is supported
Hw1	Existing abstractions where as a result of investigations, there is a requirement to revoke or vary a licence to achieve favourable conservation status
Hw2	Existing abstractions where as a result of investigations, there is a requirement to revoke or vary a licence to protect the currently favourable conservation status of a site
Hw3	Investigations to assess the impact of water company assets on the requirements of the Directive

## Sites of Special Scientific Interest (SSSIs)

The conservation agencies (English Nature and the Countryside Council for Wales) notify Sites of Special Scientific Interest (SSSIs). SSSIs represent the core network of protected sites designated on the basis of their national importance for conservation. A significant amount of SSSI land is internationally important and designated as *Natura 2000* sites under the Birds and Habitats Directives, or as Ramsar sites.

Part III of the Countryside and Rights of Way Act 2000 strengthens the protection afforded to SSSIs. This includes new duties on public bodies, including Ofwat, the Agency and water companies, to take reasonable steps to further the conservation and enhancement of SSSIs<sup>8</sup>.

The Government has set a Public Service Agreement target that 95 per cent of the area covered by SSSIs in England is in favourable condition by 2010.

As at 31 March 2001 42% of the SSSIs in England were judged by English Nature to be in an unfavourable condition (60% of bogs, 50% of rivers and streams, 34% of standing water and canals and 29% of fen, marsh and swamp). This is in part due to water quality and abstraction.

English Nature, the Countryside Council for Wales, with the Agency, will identify SSSIs that may be affected by abstractions, discharges or the spreading of sewage sludge<sup>9</sup> by water companies and suggest action to be taken by the water companies.

### Water Quality

Section A	Schemes to ensure no increase in permitted load when application is made to discharge more flow
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<sup>8</sup> s28G of the Wildlife and Countryside Act 1981 (as inserted by Sch 9 of CROW 2000, which was attached to Part III

<sup>9</sup> the duty in s28 applies to activity inside or outside the SSSI

I1	Discharges where there is a requirement to remove more or different nutrients than required by U, H, BAP and OSPAR
I2	Discharges where there is a requirement to remove BOD, Suspended Solids or Ammonia than U, R, F or H
I3	Discharges where there is a requirement for controls on other determinands
I4	Discharges where there is a requirement for discharges to be re-located
I5	Investigations of the impact of assets on the requirements of the Directive

Some of these schemes may also be part of the Agency's Strategy on Eutrophication. We can add the following item that is similar to one listed above under the heading "Sewage Sludge Treatment" (SL5).

I6	Restrictions on the spreading of sludge because of an impact on a Site of Special Scientific Interest
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### Water Resources

Section A	Ensure that new sources do not adversely affect the designated site, with the exception of where a case of overriding public interest is supported
Iw1	Existing abstractions where as a result of investigations there is a requirement to revoke or vary a licence to achieve favourable conservation status
Iw2	Existing abstractions where as a result of investigations there is a requirement to revoke or vary a licence to protect the currently favourable status of a site
Iw2	Investigations of the impact of assets on the requirements of the Directive

## United Kingdom's Biodiversity Action Plan

This is a commitment to biodiversity through the Government's signing of the Rio Convention. It is being implemented in the UK through the development and implementation of Biodiversity Action Plans for key species and habitats.

These plans identify targets against which progress will be measured. They seek to reverse decline wherever possible. They are long-term, looking to 2010 and beyond; and realistic because, being costed, the resource commitments are clear from the outset.

The action plans require a range of national and local actions to reduce threats and impacts to sites and species. Water management has been identified as the third most significant threat facing BAP species and habitats, after agriculture and inappropriate habitat management.

Habitat Action Plans for reedbeds, chalk rivers, lowland raised bog, mesotrophic standing water, coastal and floodplain grazing marsh, fens and eutrophic standing waters may require schemes in AMP4.

### Water Quality

Local action plans are to be introduced by 2005 under the eutrophic standing waters Habitat Action Plans. It is unlikely that many standing waters are affected by inputs from sewage treatment works, so this may not be a big AMP4 driver.

BAP1	Changes to consents the conservation agencies and the Agency beyond the requirements of H, U, R, and F required under the United Kingdom's Biodiversity Action Plan
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### Water Resources

BAPw1	Action agreed by the conservation agencies and the Agency beyond the requirements of Hw and lw required under the United Kingdom's Biodiversity Action Plan
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## The Marine Wildlife Conservation Bill

The Marine Wildlife Conservation Bill went to Report stage in the House of Commons in March 2002. The Bill proposes that English Nature and the Countryside Council for Wales should have the power to notify Marine Sites of Special Interest (MSSIs). It proposes that MSSIs should extend from mean low water out to 12 miles.

Competent authorities will have a duty to further the nature conservation of these sites. (Competent authorities are likely to be those defined in the Habitats Regulations.)

If the Bill is successful, and once MSSIs are confirmed by the Secretary of State, management schemes will be prepared by the relevant authorities. These will identify consented activities that might require a review (although there will be no obligation to review existing consents). This would include consents to discharge sewage effluent.

MWB1	Any action, beyond other Drivers, required for this
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## Oslo and Paris Commission (OSPAR) and North Sea Action Plan

This deals with hazardous substances and nutrients. An OSPAR Strategy to Combat Eutrophication (of marine and coastal waters) was adopted in 1998 and is now being rolled out across Europe via a Comprehensive Procedure which will identify, by 2002, "problem areas", "potential problem areas" and "non problem areas".

If "problem areas" are identified, these come with a requirement to reduce inputs of phosphorus and nitrogen by 50 per cent. If some large embayments, estuaries or coastal areas come out as "problem areas", this might drive nutrient removal at large discharges in their catchments.

The UK might introduce any agreed actions through designations under the Directive on Urban Waste Water Treatment and the Nitrate Directive.

O1	Action beyond the requirements of H, U, R, F and BAP required to meet OSPAR strategies
O2	Action beyond the requirements of H, U, R, F, BAP and OSPAR required to meet the North Sea Action Plan

## Water Resources Investigations

Where investigations funded through AMP3 show that a water company abstraction adversely impacts on the environment it may be appropriate for action to be taken for AMP4 or subsequent programmes. Additionally a programme of investigations is required for AMP4 where water company abstractions are thought to be having an unacceptable environmental impact.

INVw1	Develop and implement solutions to remove the adverse impact of water company abstraction licences where these are demonstrated through the AMP3 funded investigations
INVw2	Investigations of existing licensed abstractions thought to be having an unacceptable impact on the environment

## Local Priority

### Water Quality

This covers improvements to discharges that are not eligible under any other heading, but are of significant, local importance.

Section A	Schemes to ensure no increase in permitted load when application is made to discharge more flow
L1	All schemes not covered by any other drivers including those resulting from the Agency's Eutrophication Strategy not covered by U, H, S, BAP or OSPAR. This could include: <ul style="list-style-type: none"><li>■ No Deterioration for discharges covered only by U;</li><li>■ No Deterioration for loads increased as a consequence of controls on plumbosolvency.</li></ul>
L2	Schemes needed over and above U, R, H etc in order that available water resources and deployable outputs from licensed abstractions remain sustainable where flow is augmented by discharges

### Water Resources

This covers investigations to assess the impact of water company abstractions on sites of local importance and changes to abstraction regimes, where necessary. Such work should not be at the expense of progressing sites with other statutory drivers.

Lw1	Existing abstractions where the Agency agrees with water
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	companies that as a result of investigations there is a requirement to revoke or vary and abstraction licence having an unacceptable impact on the local environment
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## Water Framework Directive

The Directive introduces an integrated approach to water management in Europe. It rationalises and updates existing legislation by setting common EU wide objectives for water.

Its objectives are to:

- prevent further deterioration and protect and enhance aquatic ecosystems and associated wetlands;
- promote sustainable water consumption, and;
- contribute to mitigating the effects of floods and droughts.

The Directive takes a holistic approach looking at water as it flows through a catchment from lakes, rivers and groundwaters to estuaries and the sea. Surface and groundwater are to be considered together, for quality and quantity.

Member States are to achieve "good surface water status" and "good groundwater status", and prevent deterioration in the quality of waters which are already "good". Member States are also required to develop a "programme of measures" detailing plans to achieve "good status".

Although improvements do not have to be completed until after AMP4, it may be cost effective to identify options during AMP4, as part of, or extensions to, improvements required under other drivers.

### Water Quality

Until definitions of good ecological and chemical status are available, no deterioration might be based on current measures of biological and chemical quality.

WF1	Investigations of the impact of assets the requirements of the Water Framework Directive
WF2	Improvements to discharges to ensure no deterioration in good ecological status or good chemical status
WF3	Investigations required to develop a programme of measures to deliver good ecological status or good chemical status
WF4	Improvements to discharges to help deliver or move towards good ecological status or good chemical status as required by

	the Water Framework Directive, over and above improvements required by H,U, R, F, OSPAR, S, BAP
WF5	Any consequences from the negotiation, agreement and implementation of the list of Priority Hazardous Substances

### Groundwater Quality

WFG1	Improvements to discharges to ensure no deterioration in good groundwater status
WFG2	Improvements to discharges to help deliver or move towards good groundwater status or good chemical status as required by the Water Framework Directive, over and above improvements required by G
WFG3	Discharges to groundwater that will be prohibited under the Water Framework Directive
WFG4	Any consequences from the negotiation, agreement and implementation of the proposed revised Groundwater Directive

### Water Resources

WFw1	Schemes to ensure no deterioration in good ecological status or good chemical status
WFw2	Investigations required to develop a programme of measures to deliver good ecological status or good chemical status
WFw3	Schemes to help deliver or move towards good ecological status or good chemical status as required by the Water Framework Directive, over and above improvements required by Hw, lw, or BAPw

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