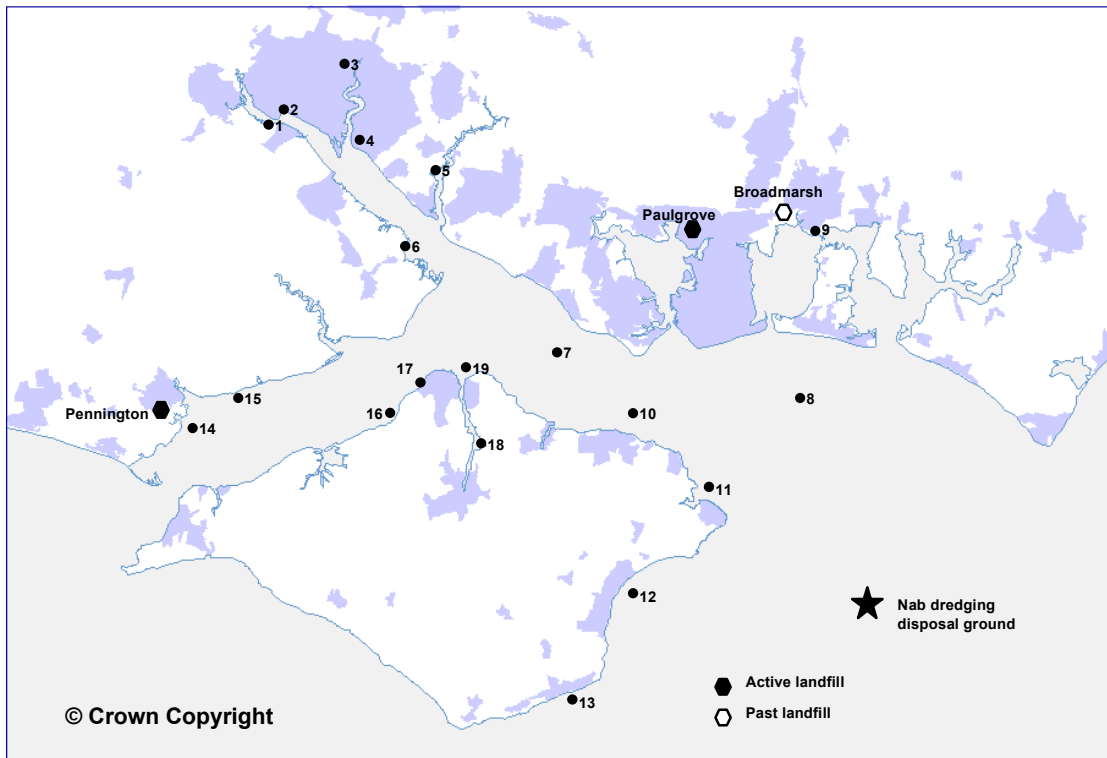


## ENVIRONMENTAL QUALITY

Long-term aim: 'to support the maintenance of high standards of water and environmental quality within the Solent, and improvements where appropriate'.



### Sewage discharges

- |                |                          |              |
|----------------|--------------------------|--------------|
| 1. Slowhill    | 8. Eastney               | 15. Norton   |
| 2. Millbrook   | 9. Budds Farm            | 16. Thorness |
| 3. Portswood   | 10. Ryde                 | 17. Woodvale |
| 4. Woolston    | 11. Bembridge            | 18. Fairlee  |
| 5. Bursledon   | 12. Sandown              | 19. Cowes    |
| 6. Ashlett     | 13. Ventnor (3 outfalls) |              |
| 7. Peel Common | 14. Pennington           |              |

### Industrial discharges

- |                    |           |
|--------------------|-----------|
| A. SW Tar          | F. Esso 1 |
| B. Bitmac          | G. Esso 2 |
| C. Hythe chemicals | H. Esso 3 |
| D. Rechem          |           |
| E. Enichem         |           |

### KEY FACTS:

- Consented sewage discharges to the Solent total 300 million litres per day.
- Of seventeen bathing beaches in the Solent, over 90% meet European standards consistently.

### The Position

Environmental quality is the term used to embrace the quality of air, water and land. Within the Solent the prime issues are water quality within the inshore waters and estuaries.

Investment in infrastructure to improve environmental quality lies principally in the hands of those whose activities could cause environmental damage. Within the Solent, the principal responsibilities lie within the private sector - including Southern Water, Enichem, Esso, Exxon, BP, the Ministry of Defence and a number of smaller companies. However all those who use the Solent have the potential to cause pollution, for example, through discarding litter or pouring oil down drains. Whilst it is unlikely that individuals cause significant impacts, cumulative impacts can be locally significant.

Regulation of environmental quality lies within the public sector, with much responsibility in the hands of the Environment Agency. The basis of the approach to environmental regulation is to set legal standards for the regulation of human activity and to ensure that they are achieved or exceeded. The main actions of the Environment Agency within the coastal zone are as follows:

- regulating discharges of sewage and trade effluent to water by the imposition and, enforcement of discharge consents;
- monitoring the quality of waters;
- licensing the disposal of wastes on land;
- licensing discharges to air, and monitoring air quality from authorised sources.

A number of areas of environmental regulation lie and outside the Environment Agency, including:

- shellfish hygiene - the EC Shellfish Hygiene Directive is effectively implemented by Ministry of Agriculture, Fisheries and Food (MAFF) and Department of Health, with responsibilities for the enforcement given to the Port Health Authorities (part of local government Environmental Health functions);
- dumping at sea - where activities are licensed by MAFF through the issuing of licences under the Food & Environment Protection Act;
- responsibility for land-use planning aspects of waste disposal and treatment, which are handled by the Minerals and Waste Planning Authorities (County and Unitary Councils);
- litter, where the principal responsibilities lie with District Councils;
- discharges from shipping, a number of which are regulated under the international MARPOL convention. Annexes I (oil), II (noxious liquids), III (harmful packaged goods) and V (litter) are in force within the UK. Annex IV (sewage) has yet to be ratified. Annex VI (exhaust to atmosphere) is currently being drawn up by the International Maritime Organisation. The responsibilities for enforcement lie with the Marine Safety Agency;
- there are also some unregulated discharges - principally those from recreational craft;
- English Nature have a statutory duty with regard to the impact of proposals on sites of European nature conservation importance.

The trend in environmental quality over the last century has been for a long term decline due to urbanisation and a lack of inadequate investment in waste management. More recently there has been improvements in environmental quality due to the implementation of environmental legislation. The trend will be for a continued decrease in the amount of pollution discharged to the marine environment, particularly through the implementation of the EC Urban Water Directive (UWWD), which is driving the investment programme in sewage treatment and disposal.

Within the water industry there have been major structural changes following the *Water Act, 1989*. This act resulted in the privatisation of the water authorities and the creation of two independent regulatory bodies - the Environment Agency (formerly the National Rivers Authority) for environmental matters, and OFWAT as the overall regulator of pricing and the water 'market'. The programme of investment in water quality improvements is driven by both UK and European legislation, as discussed in the 'Summary of Information'.

The process requires the identification of statutory obligations, which are agreed between the water companies and the Environment Agency. OFWAT's role is to define the costs which the companies may pass on to their customers, and to ensure that funds are used in an efficient manner. The statutory process by which the obligations are achieved within a given timescale is the Asset Management Plan (AMP) - which must conform to national guidance. An AMP normally represents an

agreed five year programme of investment: AMP1 was completed in 1995, and AMP2 has been agreed and is being implemented running to 2005, but with a interim review in the year 2000. The agreed AMP provides the basis for agreement with OFWAT over the charges for investment which can be passed onto the customer (the so-called k-factor). The AMP process is regarded as the implementation of national policy, and is not subject to public consultation. There is scope for water companies to carry out investment to increase standards over-and-above the statutory requirements.

Within the Solent, Southern Water Services plc (SWS), is the water company responsible for sewage treatment and disposal. Under AMP2, SWS have an agreed programme of investment which will provide secondary treatment for all sewage discharges into the Solent. They may relocate some discharges to the south-east of the Isle of Wight, and these may require only primary treatment. As with all AMP investment, the programme is driven by statutory requirements, principally under the UWWD and the Bathing Waters Directive. There are some uses within the Solent for which there is currently no legislation requiring investment to be made. The most notable are:

- shellfisheries: designated shellfish waters designated under Directive 79/923/EEC (Directive on the quality required of shellfish waters) are a driver for investment, although not all shellfish harvesting areas classified by MAFF under Directive 91/492/EEC (Shellfish Hygiene Directive) are within these designated areas;
- sea fisheries (although works for discharges are subject to FEPA licence);
- water recreation: the bathing waters directive applies only to designated bathing beaches, and not to offshore activities. If improvements to conditions for these activities occur within the investment programme, they are coincidental.

The implementation of proposals under AMP requires co-operation between SWS, EA and others. Major proposals for investment in waste water treatment will require planning permission accompanied by an Environmental Assessment. The Waste Planning Authorities are the consenting authorities for proposals for water quality investment requiring planning permission, and Government planning Circular 17/91: 'Waste Water Investment: Planning Considerations' provides a framework for local authorities to work within. There are a number of statutory consultees on investment proposals including English Nature, Sea Fisheries Committees and MAFF with regard to environmental impacts on European wildlife sites and on the sea-bed. Effective co-ordination between these agencies is essential if the achievement of the investment programme is not to be delayed.

Industrial discharges to the Solent have grown in the latter half of the twentieth century. Since the *Control of Pollution Act, 1974* they have been subject to regulation and monitoring, which is now the responsibility of the Environment Agency. Compliance with discharge consents is regarded by the Agency as good, and the levels of all toxic substances in the water column are within required limits - with the exception of organotin, which consistently exceeds levels with little prospect of recovery in the immediate future. Some areas of land, intertidal and sub-tidal mud are contaminated with residues of activities from earlier in the century, and use or disturbance of these areas has the potential to expose such contaminants.

Organic tin has been incorporated as (TBT (tri-butyl-tin)) in anti-fouling paints for nearly thirty years, and has been found to have significant toxic impacts on the marine environment. In 1987, when TBT paints were banned from use in small boats (<25m), Southampton Water and its estuaries constituted one of the most highly contaminated areas in the UK. Levels in Solent Waters have now declined, but still exceed the proposed standard, which is met consistently only outside the Solent boundary. Levels of TBT associated with surface sediments are several orders of magnitude greater than water levels; they are declining at a lower rate and may provide a long-term TBT reservoir affecting deposit feeding shellfish.

There is believed to have been a long-term enrichment in the nutrients within the Solent, and the possible sources for this include both point discharges (such as sewage) and agricultural run off. The result of nutrient enrichment has been to increase the growth of algal species - particularly in Langstone and Chichester Harbours - resulting in a change in the ecology of the areas. Studies are currently underway to determine whether the Solent should be designated as 'sensitive' under the UWWD. If such a status is assigned, this could require nutrient stripping from significant sewage discharges. There is currently no statutory mechanism for regulating diffuse sources of pollution such as run-off.

There has been a history of land use and reclamation of intertidal areas for landfill waste disposal within the coastal zone, principally on the Hampshire Coast at Pennington (Western Solent - active at present), Paulsgrove (Portsmouth Harbour) and Broadmarsh (Langstone Harbour). There are a number of adverse effects which may take place on the environment as a result of landfill, and concern has been expressed about the impact of leachate from some sites. Coastal litter results from land-based visitors, sea-borne deposits and natural sources. The extent of litter pollution on the Hampshire coast is currently subject to survey by the Solent Water Quality Conference and Coastwatch UK.

The general level of public concern about environmental quality has increased markedly in recent years, with media attention focussed on illnesses attributed to poor water quality. Bathing beaches maintain a particularly high profile, with a number of award schemes operating to attempt to give good information about quality. Schemes operated in the Solent include the EC (Blue Flag), Tidy Britain Group (Seaside Award), Marine Conservation Society/Readers Digest (Good Beach Guide) and the Solent Water Quality Conference (Solent Water Quality Award).

## **What do we need to do?**

### **1. Establish an agreed position and policy statement for water quality in the Solent**

It would be helpful to establish a clear agreed position statement on water quality within the Solent and the standards which should be sought. The implementation of the Urban Waste Water Directive represents a substantial challenge in its own right. It will result in significantly less pollution load within the Solent proper, and has implications for areas outside the Solent. A clear position statement would provide a basis for debate over how ambitious standards can (and should) be for future water quality in the Solent and its adjacent waters. Key issues to be considered could include:

- what water quality standards should be met within the Solent, by when, and are the legal requirements sufficient?
- are higher standards than the legal minimum justified, practical and affordable? Is there a cost-effective response which will work?
- are higher standards what the customers want? What will the response be to public demands for higher water quality, and will individual water companies see commercial as well as environmental benefits in providing higher standards?
- who pays? How willing are customers to pay for standards above the statutory requirements, and how much of a voice are they having in those decisions?

**LEAD ROLE:** The Solent Water Quality Conference provides an appropriate vehicle to co-ordinate such a statement, in close liaison with the Environment Agency.

### **2. Ensure that the proposals for investment in water quality under the Asset Management Plan are fully understood by those organisations affected by them**

The AMP represents an implementation of national policy, so is not subject to local consultation and negotiation - but this can cause problems in achieving support for the standards and measures proposed. One of the particular problems which can arise through lack of consensus, is a delay to the implementation of proposals because local people and local authorities may question and object to them. It must be a common objective for implementation of agreed schemes to improve water quality under the Urban Waste Water Directive to be achieved with the minimum possible delay, and ensure that the local authorities, Southern Water Services and the Environment Agency work closely together to achieve this. Since the effects of the implementation of the AMP are felt locally, there is a need for a greater exploration of how a local and democratic view can be given an earlier input into proposals - particularly where local planning permissions are important to the process.

**LEAD ROLE:** Environment Agency and Southern Water Services, possibly using the Solent Water Quality Conference as a mechanism for discussion and dissemination.

### **3. Ensure sites for investment in water quality infrastructure have the capacity for expansion to meet increased standards in the future**

Decisions on improving investment in environmental quality, to meet current standards, need to be mindful of the probability of increased standards in the future and better technology becoming available. There is a need to ensure that the current programme of investment in environmental

quality provides the best scope and capacity for continued improvements in the future. In particular, investment should be supported at sites which are suitable for the implementation of further development and better treatment.

**LEAD ROLE:** Southern Water Services and local authorities.

#### **4. Ensure that the industrial discharges to the Solent continue to meet acceptable standards**

Continued monitoring of standards of discharges will be maintained by the Environment Agency, working in conjunction with industry. The Agency will keep under review the standards to ensure that they are adequate.

**LEAD ROLE:** Environment Agency.

#### **5. Maintain close regulation of tri-butyl-tin (TBT), reducing its use wherever possible**

Levels of TBT in the Solent are well above acceptable levels, with recovery unlikely in the foreseeable future. The continuing use of TBT for protection of large vessels must be a subject for continued scrutiny given the UK requirement for sustainable development. Continued strict regulation of the use of TBT on commercial and military shipping is required, particularly at maintenance areas which provide the greatest potential for release of toxins to the environment. Promotion of less toxic alternatives to TBT, combined with a possible extension of restrictions on TBT use should be pursued. There do not appear to be technically feasible solutions to reducing the existing pollution load within sediments beyond the natural rate.

**LEAD ROLE:** Environment Agency.

#### **6. Ensure that environmental quality information is reported to the public**

It is important that the results of environmental monitoring are reported to the public through effective use of publications, site information, meetings and the media, and that public feedback on the standards which are being achieved is secured. The information needs to be in a form which can be readily understood and is meaningful.

**LEAD ROLE:** Solent Water Quality Conference and the Environment Agency.



**SOLENT FORUM ACTION:** The State of the Solent Report (Flagship Project 3) and Solent Outreach (Flagship Project 4) will provide two mechanisms for environmental reporting. The Solent Forum will work with the Environment Agency and the Water Quality Conference to identify and disseminate relevant monitoring information.

The range of different award schemes about beach quality risks public confusion, and there are arguments for rationalising them. The Solent Water Quality Awards have provided a useful pioneering award for water quality, but they now compete with the national scheme of Seaside Awards, and there is a need to review how these two schemes relate to each other. The possibility of developing awards related to uses other than bathing should be considered.

**LEAD ROLE:** Solent Water Quality Conference and the Tidy Britain Group.

#### **7. Ensure water quality investment requirements meet the needs of the natural environment**

There is a need to identify, and keep under review the implications of proposals for European wildlife sites (Special Protection Areas and Special Areas of Conservation). Any investment plans for improving water quality should ensure that the AMP considers any additional obligations under new regulations. The issue which may be of greatest concern to wildlife is the input of nutrients into the Solent, and continued investigation of the extent to which habitats are changing as a result of nutrient loading is required.

**LEAD ROLE:** Environment Agency and English Nature.

#### **8. Evaluate the impact of diffuse pollution inputs to the Solent and the need for their reduction**

There is concern, but little hard information about the possible effects of the nutrient load on the Solent, particularly within the eastern harbours. Whilst part of the nutrient load is from sewage discharges there may also be a recognisable contribution from diffuse inputs. For example, from agricultural run-off which needs to be researched and better understood - in order to determine whether it is significant and as a basis for possible management measures.

**LEAD ROLE:** Environment Agency.

**9. Ensure that the water quality requirements of the full range of uses of the Solent are taken into account**

A number of uses of the Solent have statutory weight in driving investment in water quality. There is a need to ensure that the areas identified as having these uses (bathing waters, shellfish waters) accurately reflect their full extent.

**LEAD ROLE:** Environment Agency and MAFF.

It is a cause of concern that some uses of the Solent do not receive the protection of statutory requirements for water quality. Local water quality impacts on recreational activities, sailing, windsurfing, canoeing and rowing in the river estuaries are perhaps of greatest concern. There is a need to identify whether the effects of environmental quality on these different uses are significant and, if so, to address them outside of the statutory requirements, at the very least by making users aware of any problems.

**LEAD ROLE:** Solent Water Quality Conference and the Environment Agency.

**10. Act to reduce the amount of marine litter and debris on the Solent shorelines**

Surveys of marine litter by Coastwatch UK indicate that there is a significant load on the Solent coastline, and that there has been no discernible improvement in recent years. There is a need to better understand the sources of litter and put in place appropriate education campaigns, reception facilities and other measures to reduce the extent and level of pollution. Continued promotion of the observation of the MARPOL convention is required amongst all forms of shipping activity.

**LEAD ROLE:** Solent Water Quality Conference, Port and Harbour Authorities, Shipping and Ferry Companies.

**11. Continue to research the effects of environmental quality on the health of the system and its users, feeding into practical proposals for action where necessary**

Continued focussed research on the environmental quality of the Solent will be required, to provide a greater understanding of the impacts of poorly understood pollution inputs, and to evaluate the effectiveness of existing standards. Some of these relate to national research needs.

**LEAD ROLE:** Environment Agency.

**12. Ensure minimal use of the coastal zone for waste disposal, and prevent any further use for landfill waste disposal in particular**

It is desirable that the use of the coastal zone for waste disposal is minimised, and this is an objective of the Ministry of Agriculture, Fisheries and Food in operating the FEPA licence system. MAFF policy is to seek disposal of waste materials on land, and only to consent to marine disposal at recognised sites where this is not possible. There are no marine disposal sites within the Solent, the nearest being the Nab disposal ground in its eastern approaches. The past use of the coast for landfill waste disposal has resulted in loss of habitats and may have ongoing environmental impacts. It is not a land-use which requires a coastal location, and planning policies should continue to prevent any further use of the coastal zone for this purpose.

**LEAD ROLE:** MAFF, Environment Agency and Local Authorities.

**KEY ORGANISATIONS: ENVIRONMENTAL QUALITY****Lead organisations**

Environment Agency  
MAFF  
Solent Water Quality Conference

**Other key organisations**

Department of the Environment Transport and Regions  
English Nature  
Southern Sea Fisheries Committees

Sussex Sea Fisheries Committee  
Hampshire County Council  
Southampton City Council  
Portsmouth City Council  
Isle of Wight Council  
West Sussex County Council  
Chichester District Council  
New Forest District Council  
Eastleigh Borough Council  
Fareham Borough Council  
Gosport Borough Council  
Havant Borough Council  
Solent Protection Society

Southern Water Services  
Private Sector Industry  
Coastwatch UK

Marine Conservation Society  
Tidy Britain Group.