

Factsheet No.7 in the Environment Agency educational series



Environmental Management

- Local Environment Agency Plans
- Environmental Impact Assessment
- Water Quality
- Preventing Pollution
- Environmental Enhancement



ENVIRONMENT
AGENCY

Rivers like the Thames have been used and altered by human activities for thousands of years but, today, they are under increasing pressure from many different groups.

Some people want to take water from rivers while others want to discharge waste into the water. At the same time many people are worried about the possibility of flooding while others are concerned at falling water levels because the amount of water found in rivers, already reduced by **abstraction** (when water is taken from the river) may be further reduced by drought.

If too much water is taken from a river it can lead to problems of water quality as rivers, already affected by low flow, are at greater risk of pollution from agriculture and industry which puts aquatic life at risk. It is the responsibility of the Environment Agency to maintain and improve the water environment, ensuring that aquatic life is protected, in a practical way that is not too costly.

LOCAL ENVIRONMENT AGENCY PLANS

In order to achieve its aims, the Environment Agency produces **Local Environment Agency Plans (LEAP)**, based on river catchments. A catchment is not only a river and its **tributaries** (the smaller streams that join the main river), but all the land and underground water connected with it. The Agency has been divided into catchment systems - some of these are based on a single river system (eg River Mole) while some group together several rivers and streams (eg Upper Thames). Consultation Reports and Action Plans have been completed for a number of catchments, the remainder will be drawn up by 1998. Each plan is the result of a complex procedure involving an investigation of all the major uses of water within the catchment, consultation with all interested parties and with the public, and the production of Action Plans with specific targets for improving the environment.

ENVIRONMENTAL IMPACT ASSESSMENT

Any development can greatly affect a river catchment. In the past, such developments have had unexpected results, causing great damage to the environment, so developers must now produce an **Environmental Impact Assessment (EIA)**. This will consider the possible effects of any development giving the Agency an opportunity to be actively involved in preventing potential problems. In order to carry out an EIA it is necessary to consider the impact of any development on the following:-

- human beings

- plants and animals
- soil, water and air
- local climate
- landscape
- cultural heritage

Priority attention is given when the proposed development is in an area of national or international importance, such as the Cotswolds.

WATER QUALITY

In considering the impact of a development, the Environment Agency's particularly interested in water quality. The quality of many rivers and canals may be affected by discharge such as **effluents** (waste water) and **run-off** (when rain washes loose materials such as chemicals off the land and into rivers). Since 1994 water quality has been classified under the **General Quality Assessment** scheme (GQA). This consists of several different assessments of water quality including:

1. Chemical grading - this is assessed by measuring the concentrations of Biochemical Oxygen Demand (BOD), Dissolved Oxygen (DO) and Ammonia. These have been selected

because they are indicators of the extent to which waters are affected by wastewater discharges and contaminated water running off the land.

BOD is a measure of

the amount of dissolved oxygen consumed by microbes in the decomposition of organic material, and is a clear indicator of water quality, for example:-

Clean river water - less than 5 milligrams per litre (mg/l).

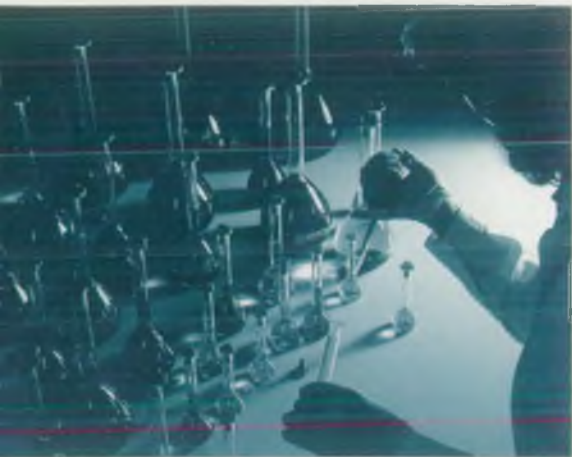
Untreated human sewage - 350 mg/l.

Animal slurry - 30,000 mg/l.

Oxygen is vital for all life, so the measurement of DO is a test of the health of a river. Ammonia is a water soluble chemical compound, produced by the decomposition of organic material.



2. Biological grading - some animals and plants are more sensitive to pollution than others, so the variety and number of animal and plant life is measured.



Chemical samples are taken at 'typical' sites along a stretch of river at least 12 times per year. Thousands of measurements have been taken by the Agency, who have set up a

database that gives a comprehensive picture of the state of all main rivers throughout Britain. In order to avoid inaccurate or misleading figures, the assessment is calculated on readings taken over three years. Once an assessment has taken place, the water is then given a 'grade'. Grades **A** and **B** represent water of 'good' quality, while grades **C** and **D** mean that the water is of 'fair' quality and grades **E** and **F** represent 'poor' and 'bad' respectively.

GQA grades are awarded each year and are used to assess long-term changes in water quality. Targets are then established, known as **Water Quality Objectives** (WQOs), which specify minimum quality standards. These in turn lead to the production of a range of policies, projects and the Action Plans needed to achieve these targets. 52% of the cost of these assessments and tests is financed by the issue of licences for abstraction of clean water or discharge of waste water, and by forcing polluters to pay for clean up costs, while the remainder comes from the government.

PREVENTING POLLUTION

In order to achieve WQOs, the Environment Agency takes action to prevent pollution such as:

- pressing for regulations to make people, such as farmers, take action to prevent pollution
- prosecuting anyone causing pollution
- reviewing discharge consents, where abstraction or discharge of waste is permitted
- developing procedures for controlling and preventing occasional pollution incidents such as sewage overflows during storms
- promoting public awareness of the dangers of pollution and the steps to be taken to avoid it
- identifying Water Protection Zones, as stated under The Water Resources Act

As a result of all these actions there has been a 17% improvement in water quality since 1989.

ENVIRONMENTAL ENHANCEMENT

Of course, measurements of water quality, the setting of WQOs and action to prevent pollution are only one aspect of environmental management. The Environment Agency co-operates with many organisations interested in the protection and good management of the natural environment to produce a wide range of leaflets, booklets and videos, offering advice and guidance on how to avoid damaging the natural environment. There are also many practical ways in which the Agency seeks to enhance (or improve) the water environment including:

- Reducing abstraction to safeguard river flow or transferring water from one river to another.
- Offering a planned programme for improving river habitats. These include installing small fish weirs such as salmon passes. Fish stocks may be replenished, either by direct restocking of young fish or by planting fish eggs in suitable locations.
- Creating wetlands and ponds and restoring meandering watercourses.
- Improving riversides by the planting of young trees and bushes to create river habitats. Another method is to create a buffer zone or '**Green Corridor**' between the river and adjoining farmland. This usually involves encouraging landowners not to farm or build right up to the river bank top and can also help to prevent contaminated run-off.
- Controlling public uses of the water environment, making sure it is used wisely.
- Re-introducing traditional methods of environmental management, such as encouraging the re-creation of water meadows that allow native animals and plants to thrive, and help to control flooding.

The improvement of the natural environment and maintenance of the river ecosystem is a very complex and difficult task. There are external factors over which environmental managers, such as the Environment Agency, have no control, such as global climatic change. However, by working locally, identifying the needs of a small area, setting targets for conserving and improving the environment, and then taking action, the work of the Agency can have a beneficial effect.

THE ENVIRONMENT AGENCY

The Environment Agency was formed by a merger of the National Rivers Authority with Her Majesty's Inspectorate of Pollution and the Waste Regulation Authorities. This new organisation began operating on 1 April 1996, and has responsibilities for the environmental protection of water, land and air.

ENVIRONMENT AGENCY



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MANAGEMENT AND CONTACTS:

The Environment Agency delivers a service to its customers, with the emphasis on authority and accountability at the most local level possible. It aims to be cost-effective and efficient and to offer the best service and value for money.

Head Office is responsible for overall policy and relationships with national bodies including Government.

Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol BS12 4UD
Tel: 01454 624 400 Fax: 01454 624 409

ENVIRONMENT AGENCY REGIONAL OFFICES

ANGLIAN

Kingfisher House
Goldhay Way
Orton Goldhay
Peterborough PE2 5ZR
Tel: 01733 371 811
Fax: 01733 231 840

SOUTHERN

Guildbourne House
Chatsworth Road
Worthing
West Sussex BN11 1LD
Tel: 01903 832 000
Fax: 01903 821 832

NORTH EAST

Rivers House
21 Park Square South
Leeds LS1 2QG
Tel: 0113 244 0191
Fax: 0113 246 1889

SOUTH WEST

Manley House
Kestrel Way
Exeter EX2 7LQ
Tel: 01392 444 000
Fax: 01392 444 238

NORTH WEST

Richard Fairclough House
Knutsford Road
Warrington WA4 1HG
Tel: 01925 653 999
Fax: 01925 415 961

THAMES

Kings Meadow House
Kings Meadow Road
Reading RG1 8DQ
Tel: 0118 953 5000
Fax: 0118 950 0388

MIDLANDS

Sapphire East
550 Streetsbrook Road
Solihull B91 1QT
Tel: 0121 711 2324
Fax: 0121 711 5824

WELSH

Rivers House/Plas-yr-Afon
St Mellons Business Park
St Mellons
Cardiff CF3 0LT
Tel: 01222 770 088
Fax: 01222 798 555



NATIONAL LIBRARY &
INFORMATION SERVICE

THAMES REGION

Kings Meadow House, Kings Meadow
Road, Reading RG1 8DQ

For general enquiries please call your local Environment Agency office. If you are unsure who to contact, or which is your local office, please call our general enquiry line.

ENVIRONMENT AGENCY GENERAL ENQUIRY LINE

0645 333 111

The 24-hour emergency hotline number for reporting all environmental incidents relating to air, land and water.

ENVIRONMENT AGENCY EMERGENCY HOTLINE

0800 80 70 60



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