



FISHERIES FACT FILE 1/9

“Thriving fish are signs of a thriving river. Our aim is to maintain and improve the health of both - for everyone’s benefit and enjoyment.”



ENVIRONMENT
AGENCY

the environment agency



The Environment Agency for England and Wales is one of the most powerful environmental regulators in the world. It provides a comprehensive approach to the protection and management of the environment, emphasising prevention, education and vigorous enforcement wherever necessary. The Agency's creation on the 1st April 1996 was a major step, merging the expertise of the National Rivers Authority, Her Majesty's Inspectorate of Pollution, the Waste Regulation Authorities and several smaller units from the Department of the Environment.

Thames Region

England and Wales are divided into eight Environment Agency regions. Thames Region is responsible for the protection of a 13,000 square km area of great diversity. The Region extends from Cirencester in the west to Southend in the east and from Luton in the north to the Surrey Downs in the south. Because this area contains a fifth of the nation's population, development pressures and demands on natural resources, particularly water, are greater than elsewhere in England and Wales. Thames Region is subdivided into three areas (West, North East and South East) which are the first point of contact for local issues.

Fisheries, the subject of this leaflet, is one of our key responsibilities. The others - Conservation, Environmental Quality, Flood Defence, Navigation, Recreation, Water Resources, Waste Regulation and Integrated Pollution Control - are covered in separate leaflets.

In reality, we can't treat these responsibilities separately. Whatever we do must be done in the context of the whole catchment.

This means that the work of one specialist department can only be effectively carried out in collaboration with others. (So it's a

good idea to read all the leaflets, and not just this one. In that way you'll get a better understanding of what we are trying to do.)

The collaboration extends well outside the Environment Agency. We work closely with the Regional Fisheries Advisory Committee, whose membership is drawn from local and national bodies with specific expertise in fish and fisheries. The Committee's meetings are open to the public.

But the most important collaboration is with individual members of the public.

Newspapers, magazines, TV and radio help by keeping people informed about the water environment. Local groups can highlight any threats. But only public opinion can ensure that the water environment continues to be given the care and attention it needs. That is why your interest and support is so critical.

"We also receive valuable guidance from the Thames Regional Fisheries Advisory Committee. Membership is drawn from a wide range of local and national bodies. Meetings of this committee are open to the public".

Some of our 'external' partners

- Sea Fisheries Committee.
- Fisheries Consultatives.
- Fishery owners - who might be private clubs and individuals or local authorities.
- Angling Clubs - angling is Britain's most popular participant sport; their support is essential to us.
- English Nature, the statutory body responsible for nature conservation in England.

- Countryside Commission, the statutory body responsible for the conservation of landscape and promoting access to the countryside.
- National Trust.
- Royal Society for Nature Conservation (The Wildlife Trusts Partnership).
- Royal Society for the Protection of Birds.

And, most importantly, thousands of individuals owning land on or near our rivers.

"As with any other Environment Agency activity, cooperation is the key."

Fish - recipe for success

Our role in the Fisheries section of the Environment Agency Thames Region can be stated quite simply. It is to safeguard the fish in all the waters of our Region, protect their habitat and, where appropriate, work to increase their numbers.

Simple to state - more complex to carry out!

As with every other Environment Agency activity, cooperation is the key. We join with other specialist departments in the Region to improve water quality and quantity. We also work with colleagues to ensure that flood defence works and other capital and maintenance projects are designed and implemented to enhance rather than damage fish habitats. The emphasis is on pro-active development.

Collaboration with other water users is vital, most of all anglers and angling associations.

Pass the fish

Since 1989, including the Thames Salmon Trust programme, some 50 fish passes have been built, improving the ability for fish to migrate throughout the Region. We are continuing to build more fish passes at every opportunity including eel passes.

The Thames Salmon Trust has virtually completed its programme of salmon passes on the Thames. Twenty-two were required, and all of them have been financed by outside sponsors. The final pass will be opened in 1998. Salmon will then have access to all the main rivers with potential spawning and nursery tributaries, but more work will be needed to help salmon actually reach the spawning grounds.

In the mean time, salmon are already moving upstream more successfully than ever and the Trust, together with the Millennium Commission and the Agency is turning its attention to providing passes on the River Kennet - a major chalkstream tributary with the most potential for spawning and nursery area of any of the Thames tributaries. The programme will build 17 passes by the year 2000, giving salmon access beyond Newbury.

Pressure on the natives

Exotic species sound exciting but could be a threat to our native fish. It is, in fact, an offence to stock exotic species in any UK fishery without prior permission from the Environment Agency and the Ministry of Agriculture, Fisheries and Food. The relevant legislation is the Salmon and Freshwater Fisheries Act 1975 and the Wildlife and Countryside Act 1981.

Exotic species as the name implies, are not native to this country. They may carry parasite fauna or diseases that are dangerous to our native species or may present unwanted competition for limited resources. Most exotic species are 'one-off' accidental escapees from fish farms, garden centres or private collections. Sometimes, the risk is great and the culprit is identified - and penalised. The next paragraph explains further:

The law can bite

In a recent test case, a well-known fly-fishing club was awarded £10,000 damages plus interest against former owners of a trout farm. It was alleged that the farm had allowed thousands of rainbow trout to escape into a prime stretch of river famous for its brown trout. The rainbow trout 'stole' the food naturally and normally available for

the brown trout. There was a serious risk that the river's ecology would be seriously damaged.

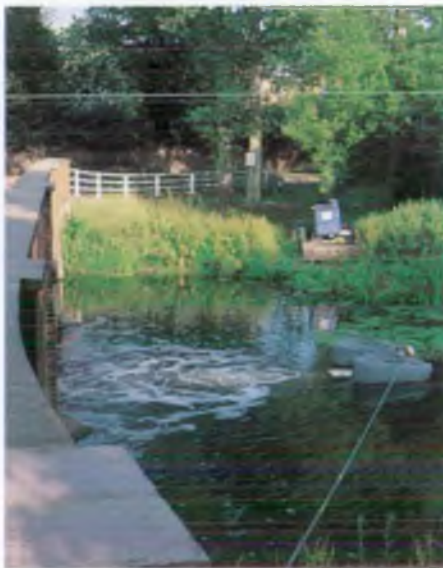
After the case, the Anglers Cooperative Association said that the judgement allowed them to go ahead with similar prosecutions in other parts of the country.



Distress response

Hot dry weather can create distress in fish. Water levels are lowered, so are oxygen levels. And there may be problems with algal blooms - which also help to reduce oxygen levels. In the past, the answer would have been to remove the fish to safer waters, but the experience can be stressful, and often fatal.

Portable aerators now provide a much better response both in lakes and rivers. The aerators can raise oxygen levels from a disastrous 5% to an acceptable 25% within a few hours - sufficient to keep the fish alive and undistressed until conditions return to normal.



Up at eels

Eels have been fished in the Thames for thousands of years. Before industrialisation and sewage blighted the river and its banks, shoals of eels making their way up-river were one of the great sights of spring. By the end of the last century, the building of major navigational weirs and a devastating reduction

in water quality virtually ended eel migration.

Thankfully, during the last 30 years, continued improvement in water quality has encouraged the eels and elvers to return. Since the early 1980's a commercial eel fishery has developed on the Thames. There has been a slow recovery of eels in the freshwater river upstream of Teddington, however the Environment Agency has helped by restocking five rivers with 160,000

elvers. Re-colonisation will be a slow process, and it is unlikely that there will ever again be sufficient stock to permit large scale commercial exploitation in the non-tidal river. But anglers, otters and herons should continue to do better every year.

Research for better development

We continue to improve our techniques and our equipment. We must also deepen our knowledge and understanding of our fish species and their habits.

Research, and the better development that follows, are national responsibilities within the Environment Agency.

Among the areas currently under urgent review by our research and development teams are:

- How can we enhance the condition and numbers of salmon and sea trout entering our rivers?
- What are the critical factors that restrict coarse fish populations in lowland rivers?
- Is disease in fish an indicator of poor water quality?
- What is the most effective way of introducing hatchery-reared fish into rivers?
- Are there more accurate ways of counting fish stocks?
- What are the 'best-practice' techniques for improving and enhancing fish habits?
- Can we develop new ways of restoring the land environment that will improve the water environment and restore damaged fisheries?

Ideal homes

We spend £500,000 every year on improving fish habitats and creating new ones. This is funded by other functions because everything we do in the Environment Agency is done with the environment in mind. So, in Fisheries, we work with our colleagues to improve water quality and quantity. We also ensure that any improvements carried out on our rivers - for flood defence, navigation or recreation - result in better fisheries. After all, the Environment Agency's overall remit is to create a healthy environment and this includes healthy rivers. The best indicators of healthy rivers and a good reflection of the overall state of the environment are healthy fish populations!

Licence to fish

Anyone who goes fishing must have an Environment Agency rod licence, renewable every year. In addition, a permit from the riparian owner will also be needed. (A riparian owner, in this case the owner of land on the bank of a non-tidal river, also owns the land up to the centre of the river or as far as the other bank and has legal rights over the water itself.)

Environment Agency licences are available through all post offices and from a limited number of other outlets.

We also sell 'Lock and Weir' fishing permits allowing anglers to enjoy their sport at locks along the length of the Thames from Oxfordshire to Surrey.

"We have about 200,000 rod licence holders in Thames Region. They are our customers."

We have about 200,000 rod licence-holders

in Thames Region. They are our customers. We take great pains to ensure that neither their sport nor the fishery in general is spoiled by anglers fishing without a licence.

Our Bailiffs continually patrol the fisheries throughout the region, and have the right to insist on seeing any angler's licence. They continue to operate during the close seasons to enforce regulations.

When required, our Bailiffs are assisted by local police officers.

Moving fish

Anyone transferring fish from one water to another, risks transferring disease too. There's also the risk of attracting fish from other parts of the river to fill the 'gap' created - and thus disturbing other people's fishing. The law says that no fish can be moved without our written consent - and we look with great caution on all applications.

Applications to introduce fish often come about because of some dissatisfaction with the fishery. A more positive reaction is to remove the cause of dissatisfaction. We are always pleased to offer our help and expertise.

Family planning - Environment Agency style

We are continually looking for new ways of encouraging the right fish to breed more successfully in the wild - and in as natural a way as possible.

Innovative techniques for enhancing stocks of brown trout have been effectively tested in Cotswold rivers.

Artificial spawning beds have been constructed in three rivers with successful results, and as a result the development of further spawning beds in the future is now likely.

Trout incubation boxes are also proving very successful. The boxes, just over half a cubic metre in capacity, are placed on the river's edge. Water upwells through upto 50,000 eggs which are laid among the gravel inside the box. When the eggs have hatched, the young fish (called 'alevins') survive on their yolk sacs until, as fry, they seek the light and swim out through the two small pipes that overhang the river. In this way they stock themselves and are virtually 'natural fry'.

A third technique seeks to aid natural spawning by breaking up hard limestone 'pans' that form on the river bed and prevent trout reaching the spawning gravels easily. Alternatively, a tractor-mounted rotovator (a kind of revolving rake) can be used to break up the pans. Natural flows can then remove the silt.

Restocking the watercourses



National fish farms produce a variety of both coarse and game fish which we use for stocking rivers. In most cases, the fish are used to reinstate fisheries that have been affected by pollution events. Chub, dace, barbel, tench, roach and crucian carp are among the coarse fish species reared and released. Some are also used to help improve and develop existing fisheries.

Each year Salmon fry and smolts are stocked as part of the Thames Salmon Rehabilitation Scheme - a long-term project to try and reintroduce salmon to the river. In addition to young fish reared from eggs obtained from outside sources (e.g Ireland) we obtain eggs from our own broodstock - fish that have returned to the River Thames after a one to two year sojourn at sea.





We have our own specialist contribution to make:

- We monitor the health and numbers of fish in all our waters - and we are responsible for over 1,500 kilometres of riverine fisheries - i.e: fishing from riverbanks.
- We improve fish habitats and create new ones - pools, ledges, covers, riffles, etc (riffles are mini rapids).
- We respond quickly to emergencies that may endanger fish or fisheries.
- Where fish are at risk, we try and help them on the spot (by removing the cause of pollution, for instance). As a last resort, we move them to safer waters.

• We use fish reared at National Agency farms or obtained from management activities to restock depleted rivers, or help develop new fisheries.

- We install fish ladders to help salmon, trout, coarse fish and eels to reach their spawning grounds.
- We monitor any kind of development that may damage the fisheries.
- We are constantly on guard against activity in or out of season that might interfere with the good health of our fisheries.

"But... there is absolutely no room for complacency."

Getting better - but we're not relaxing

In recent years, there have been significant improvements in the water quality of our rivers. The water environment as a whole has become more favourable to fish and fisheries. The return of salmon to the Thames and the huge increase in tideway fish populations is the most spectacular evidence of this improvement.

But... there is absolutely no room for complacency. The very fact that fish such as sole, bass, smelt and eels are now returning to rivers in the heart of London and other heavily built-up residential and industrial areas brings with it the risk of major pollution incidents. Thousands of fish could be killed and their habitat damaged.

We dare not relax our guard.

How do we know how many fish there are?

We carry out regular surveys on all the principal rivers in the Region. The aim is to determine not only the numbers of fish (and their species) but their condition too. We also carry out special investigations into fish stocks in response to specific demands - after a pollution emergency, for instance.

We use a variety of survey techniques. On most watercourses, we use conventional electro-fishing techniques. On very small tributaries which may contain large numbers of young fish migrating to and from the main river, and where conventional electric fishing equipment is unwieldy, we now use



specialised 'back pack' gear. (Note: in 'electro-fishing', fish within a few feet of the equipment are temporarily and harmlessly stunned. After a quick examination, they are returned to the water before they realise they've left it! Electro-fishing is, of course, illegal except when carried out under strictly controlled conditions for official purposes.)

At key sites on main rivers and the Thames Tideway, we use micro-mesh seine nets as well as trawl nets. ('Seine' nets hang vertically in the water with floats at the top and weights at the bottom.)

Salmon returns are monitored in traps at Molesey, Sunbury and Reading while commercial eel catches are also reviewed via returns from the fishermen.

Beam and Boom

Two other techniques are now used on the Thames - dual beam sonar (biosonics) and the 'boom boat'.

Dual beam sonar, previously used only at sea, and very successfully too, has been developed by us for use in rivers. It can report quickly on the numbers and distribution of the fish. However, it cannot distinguish between species.

For that, another Environment Agency development is needed - the boom boat. The boom boat can electro-fish in relatively wide and deep watercourses. Used in conjunction with the dual beam sonar, it gives us information about coarse fish that was previously unobtainable. As a result many kilometres of river where previously information did not exist have now been surveyed.



Fishing in the future

We can be reasonably certain that over the next decades the demands made on the environment in general and the water environment in particular will intensify. We shall have to increase our effectiveness simply to keep up. We intend to do better than that.

We should also take into account the possibility of climate change - though this, if it happens, will be on a much larger time scale.

But whatever the future holds, we can be absolutely certain that the principles which currently guide the Environment Agency will still apply.

So far as fishing and fisheries are concerned, those principles are: to increase water quality and quantity; to restore natural habits; and to manage fish stocks as efficiently as possible. The better we live up to those principles, the better fishing we will all enjoy the future.

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

MIDLANDS

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

SOUTH WEST

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

NORTH EAST

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

THAMES

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

NORTH WEST

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

WELSH

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



Environment Agency
Information Centre
Head Office



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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