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NRA

Thames Region

# ANNUAL REVIEW OF FISHERIES

1st April 1989/31st March 1990.

NATIONAL RIVERS AUTHORITY

THAMES REGION

# Annual Review of Fisheries

1st April 1989 / 31st March 1990

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# 1. INTRODUCTION

This third review of the activities of the fisheries section in the Thames Region covers the last months of responsibility under Thames Water, and from 1st September 1989 the new allegiance to the Thames Region of the National Rivers Authority. In the long term this transition is likely to have quite far reaching effects on the fishery work, but in the short term day to day operations have remained very much the same.

Development of the Fobney fish rearing site has continued, and the yield has risen to more than 30,000 fish, compared with 10,000 in the previous year. An additional number of staff has been recruited in order to meet regional rearing needs and realise the full potential of our farm sites.

The core of fishery management work remains the river survey programme, although this report summarises a variety of other activity ranging from advisory work to fish rescues. The survey programme has been under pressure from the requirement to meet emergencies, and has also been modified to provide answers to urgent questions. For example in the past twelve months we have examined the fish populations of two rivers which failed their EEC directive standards of water quality, and have looked at a number of sites on other rivers which may be affected by the temporary derogation of effluent standards following privatisation of sewage treatment. The effect of these changes was to concentrate most of the new survey effort onto non designated rivers rather than EEC designated fisheries. Overall reports were completed for more than 500 km of waters during the year. Reports for another 600 km are at various phases of completion.

Following the problems of the previous year we were fortunate that no further outbreaks of Spring Viraemia of Carp were reported in the region. Extensive testing by MAFF of the previously infected sites also proved negative.

The first sponsored fish pass to be built in the salmon rehabilitation programme was formally opened at Shepperton Weir by Consolidated Gold Fields. The actual run of recorded salmon was however only 132 compared with a record of 323 in the previous year. This was attributed to the rather poor quality conditions which prevailed in the Tideway for the summer weeks which should have seen the biggest influx of returning fish.

The enforcement work showed a drop on both the number of licences checked and the number of prosecutions, but the target of checking a number of anglers equivalent to 15% of the numbers of licences sold was achieved.

Overall this has been a year of steady progress for the fisheries function in the Thames Region.

## 2. The Regional Fisheries Advisory Committee

The Committee met on four occasions during the year. On the first occasion it was reporting to the Board of Thames Water, the three subsequent meetings were part of the Thames Region with a reconstituted Committee and terms of reference. Since there has been a considerable degree of continuity the whole work of the Committee for the year has been reviewed together.

The formation of the NRA, its committee structure, their terms of reference, the financial arrangements, were all discussed at the June and September meetings. A number of suggestions were put forward by the Committee to the NRA Advisory Committee on questions of Committee Structure and terms of reference. The proposal to transfer the fisheries function in the catchments of the Darent and Cray to NRA Southern Region was opposed, and when the decision was eventually confirmed, was noted with regret.

The Committee reaffirmed their wish to see fisheries remain financially self-supporting in the Thames Region. The primacy of the new Regional Rivers Advisory Committee in environmental matters was recognised, but in view of the crucial importance for fisheries of environmental pressures, the Committee maintained a strong interest in a number of topics in this area. Members received a review of water quality in 1988, and made comments particularly on tideway quality. They were assured that such reports would continue to be available to them. The potential problems of motorway drainage were noted, and the Committee suggested that local councils should be reminded annually of the need for interceptor cleaning. The study of low flows in a number of Thames watercourses was discussed again, and there was dismay at the lack of progress in taking action to implement some of the proposals. Reports on the effects of the hot dry summer on fisheries and general ecology were received.

On a more local scale, the Committee opposed a major development proposal at Foxley Wood in north Hampshire and requested that a number of points be brought to the attention of the Secretary of State. The Committee were concerned about current arrangements for flow division on the River Wey at Woking and requested an investigation. The possibility of ecological and fishery damage at Brooklands Lake, Dartford from the discharge from a contaminated borehole were discussed. A special meeting was arranged for a group of members to discuss the potential effects on the tideway fisheries of a new power station proposal.

In dealing with the more technical aspects of fisheries, the Committee received reports on fish rearing and proposals to expand rearing were approved. Alterations to the survey programme, to take account of the possible effects on rivers and fisheries of the derogated standards at a number of sewage treatment works, were approved. The current position on the status of native Crayfish was noted and the Committee requested that letters urging positive action should be sent to the DoE and to MAFF.

The Committee received a report on proposals for the management of research and development within the NRA and approved a paper suggesting a project to look at the links between fishery status and water quality. The progress of salmon rehabilitation and fruitful links with the Thames Salmon Trust and its fund-raising work were noted.

The committee also received regular reports on the progress of rod licence sales, on enforcement, and regulation under the Salmon and Freshwater Fisheries Act.

## 3. Financial Performance

The surplus of income over expenditure for the year was £97,000. This was larger than expected in the second year, in which licence fees have been held steady. A summary of the financial performance is given in Table 1.

Sales of rod licences have remained buoyant and the take-up of second rod licences at the concessionary rate has increased significantly. The figure for sales in the table includes £1,031,000 for sales during the year and £65,000 held-over from late returns of monies from the previous year.

Free fifteen-day licences were again offered to tackle dealers for inclusion in the Angling Foundation's starter licence scheme. The level of usage remained at about 1,000 over the course of the year.

Overall expenditure came very close to the revised estimate, and costs have been held in check. The main increase, in financing costs, reflects the effort to improve the infrastructure available to fisheries, particularly for fish rearing and holding facilities.

TABLE 1. Income and Expenditure

| | Original Budget 1989/90 £000 | Revised Budget 1989/90 £000 | Probable Actual 1989/90 £000 | Variance from Revised Budget £000 |
|---|---|---|---|---|
| **Income** | | | | |
| Rod Licences | 916 | 1,002 | 1,096 | 94 |
| Miscellaneous Income | 15 | 15 | 23 | 8 |
| | 931 | 1,017 | 1,119 | 102 |
| **Expenditure** | | | | |
| Operating Costs | 649 | 675 | 667 | 8 |
| **Divisional Support** | | | | |
| Regional Costs | 128 | 132 | 131 | 1 |
| HQ Costs | - | - | 7 | (7) |
| Research | 16 | 16 | 20 | (4) |
| Rod Licence Commission | 63 | 71 | 68 | 3 |
| Financing Costs | 75 | 90 | 97 | (7) |
| Interest Received | - | - | (1) | 1 |
| | 931 | 984 | 989 | (5) |
| Surplus (deficit) | - | 33 | 130 | 97 |

## 4. Review of Operational Fisheries Work

### a) Fishery Management

Fishery management forms an important part of the National Rivers Authority's statutory duties to maintain, improve and develop fisheries within the Thames region. This section deals with the practical management work carried out by the East and West sections of Thames NRA fisheries department. The work includes stocking, fish culls and the taking of fish health samples.

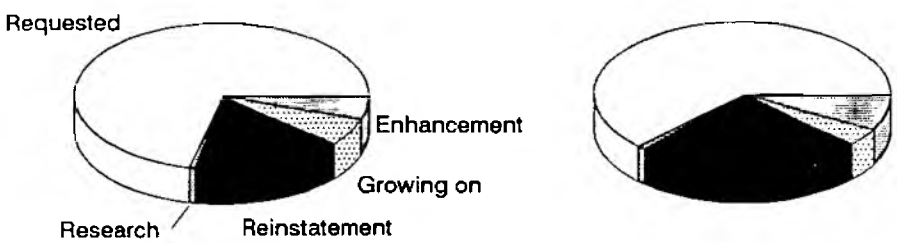
#### i) Stocking

A summary of Thames Region NRA's stocking during 1989/90 is provided in Table 2 and is compared with the previous years stocking. This excludes stocking for the Salmon Rehabilitation Scheme which is covered in Section 6 of the report. Full details of all Authority stockings are provided in Appendix 3.

Table 2 - Reasons for Stocking

| Reason for Stocking | Weight (kg) | | % | No. of Fish | | % |
|---|---|---|---|---|---|---|
| | (88-89) | 89-90 | | (88-89) | 89-89 | |
| Request | (6886) | 13755 | 71.1 | (54490) | 145443 | 62.3 |
| Reinstatement | (2014) | 3301 | 17.1 | (24543) | 58916 | 25.2 |
| Growing On | (289) | 1143 | 5.9 | (4979) | 8928 | 3.8 |
| Enhancement | (432) | 1031 | 5.3 | (11516) | 18144 | 7.8 |
| Research | (100) | 114 | 0.6 | (1740) | 2200 | 0.9 |
| TOTAL | (9721) | 19344 | | (97268) | 233631 | |

# Figure 1 - Reasons for Stocking




**Weight (kg)** **No.of Fish**

Requests: Applications from angling clubs and riparian owners, for stock. The applications are judged on merit, and if justified, free stock is provided.

Research: Stocking undertaken as part of a specific investigation, e.g. fish movements.

Reinstatement: Stocking undertaken after a fishery has suffered a mortality.

Growing On: Fish stocked to ponds which the Authority has an interest in. The fish can be retrieved and used at a later date.

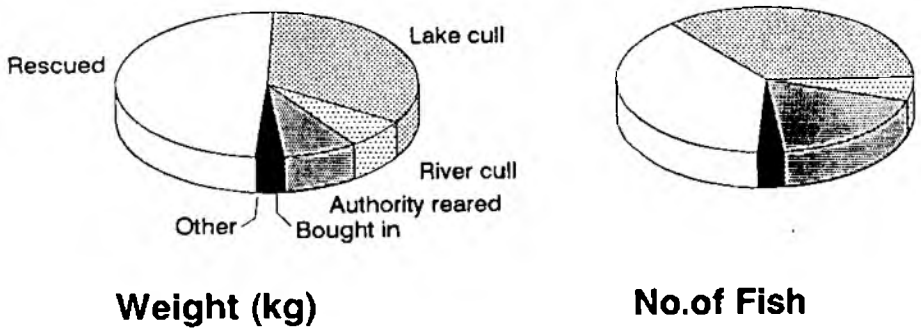
Enhancement: Stocking undertaken to improve an existing fishery.

Details concerning the source of the stocked fish are provided in Table 3.

**Table 3 - Source of Stocked Fish**

| Source | Weight (kg) | | % | No. of Fish | | % |
|---|---|---|---|---|---|---|
| | (88-89) | 89-90 | | (88-89) | 89-90 | |
| Fish Rescue | (5113) | 9524 | 49.2 | (24511) | 89391 | 38.2 |
| Lake Cull | (2317) | 6436 | 33.3 | (39777) | 82676 | 35.4 |
| Authority Reared | (1805) | 1538 | 8.0 | (26646) | 42620 | 18.2 |
| River Culls | (130) | 1263 | 6.5 | (1250) | 12291 | 5.3 |
| Bought | (354) | 309 | 1.6 | (5060) | 4348 | 1.9 |
| Other | (2) | 274 | 1.4 | (24) | 2305 | 1.0 |
| Total | (9721) | 19344 | | (97268) | 233631 | |

## Figure 2 - Source of Stocked Fish




A total of 19.3 tonnes of fish were stocked during 1989/90 (a 99% increase by weight and 140% increase by number over the previous year). 14 tonnes (72.5%) were introduced to stillwaters and 5.3 tonnes (27.5%) to rivers and canals. The high percentage stocked to still waters is due to an increasing number of still water rescues providing 9.5 tonnes (49%) of stocked fish, and an increase in activity in stillwater culls providing a further 6.4 tonnes (33%) of stocked fish. The third main source of fish for stocking is Authority reared. In 1989-90 this source provided 1.5 tonnes (8.0%) of stocked fish, a decline of 17% over the previous year. However, the number of fish stocked has increased by 60%.

The main reasons for stocking in 1989/90 were again angling club requests, the clubs were provided with 13.8 tonnes (145,000) fish, an increase in weight of 100% over the previous year. The second major category was reinstatement of damaged fisheries, which accounted for 17% of the stocking. These fisheries received 3.3 tonnes (59,000) fish, an increase in weight of 65% over the previous year.

Many introductions were made to club waters such as South Cerney Angling Club's Ashton Leyne Pit, which received 150 kilos (7500) roach and perch. The club also received 500 crucian carp for their Ham pool. Orpington and Districts, Ruxley Lakes received 90 kilos (5000) rudd (the lakes have been surveyed and are known to have a recruitment problem). Major reinstatement stockings were undertaken on the drought damaged River Darent, 614 kilos (11500) riverine fish were stocked into five sites in the affected stretch. 417 kilos (11100) of chub, roach, dace and carp were stocked into the River Roding/Cripsey Brook, following pollution damage. Further reinstatement stockings were undertaken on the Rivers Cole, Mole and Lee, the Oxford and Grand Union Canals and a variety of stillwaters.

Finally, Authority stocking increased significantly during 1989/90. This can be attributed to the drought conditions which existed during the year, and influenced the numbers of fish rescues carried out, and the receding threat of Spring Viraemia of Carp (SVC), which encouraged increased efforts at lake culling.

ii) Culling Operations

During 1989/90, 47 culling operations were carried out by the Authority. 34 of these were stillwater culls, and 13 were riverine culls (these operations produced a total of 7.7 tonnes (95,000) fish). There was a slight increase (12%) in effort in this field over the previous year. The major reason for culling was again the selective removal of excess fish from overstocked stillwaters. Other reasons for culling were the removal of pike and other coarse species from trout waters and the removal of coarse species from waters which have uses other than angling.

Examples of such operations are at the Coate Water Nature Reserve, which produced 770 kilos (6,500) of roach and bream, these were used to restock 4 different locations in the West area. The reason for the cull was to reduce fish populations and thereby reduce algal blooms, by increasing zooplankton grazing. A cull at Cut Mill Lake, provided Godalming A.S waters at Bramley Park with 750 kilos (2,300) of bream.

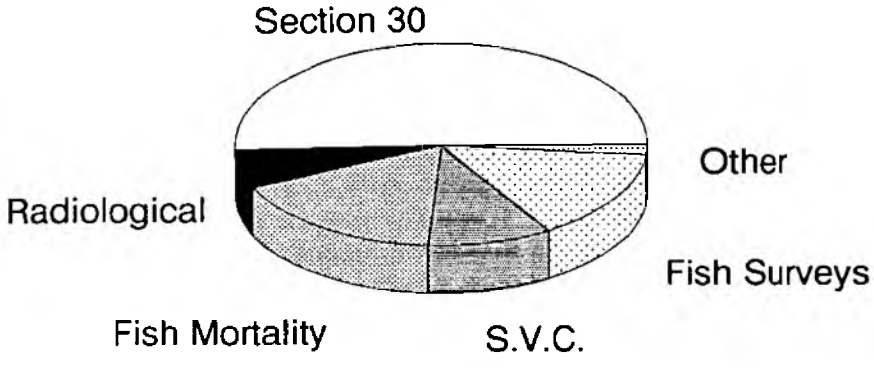
iii) Health Assessment

A summary of N.R.A. Thames Regions reasons for taking health samples is provided in Table 4.

Table 4 - Reasons for taking health samples

| Reasons for health sample | No. of samples | % |
|---|---|---|
| Section 30 | 56 | 50.5 |
| Fish Mortality | 19 | 17.1 |
| Fish Survey | 16 | 14.4 |
| S.V.C. | 11 | 9.9 |
| Radiological | 7 | 6.3 |
| Other | 2 | 1.8 |
| Total | 111 | |

# Fig 3 Reasons for Taking Health Samples




Section 30:- Angling clubs or individuals intending to stock fish into waters in the N.R.A Thames Region, need to satisfy the Authority that the fish are not carrying any serious disease before consent is given, under Section 30 of the Salmon and Freshwater Fisheries Act.

Fish Mortality:- Samples taken where there has been a serious fish mortality and disease is suspected as being the cause.

Fish Survey:- Samples taken in association with the Authorities programme of Riverine and Stillwater surveys.

S.V.C:- Samples taken on behalf of MAFF to test for the incidence of Spring Viraemia of Carp (this year the effort was directed towards re-testing previously notified S.V.C waters).

Radiological:- Samples taken for the MAFF radionuclide testing programme.

Other:- 2 samples taken in connection with the solvent contamination of a stillwater and a bacterial/viral sample sent to MAFF for their assistance.

During 1989/90, 111 samples were taken, an increase of 158% over the previous year. The major reasons for taking the samples were, Section 30 consents, 56 (50.5%) and fish mortality investigations, 19 (17.1%). The reasons for the significant increase in workload are the relaxation of the Authorities stringent policy on the movement of fish as the threat of SVC receded and the drought conditions of 1989/90 which stressed fish populations and left them opens to opportunistic parasites. It should also be noted that 16.2% of the workload was MAFF lead ie. SVC and radiological sampling.

b) Fishery Surveys

Fishery surveys are the second and probably the most time-consuming aspect of operational fisheries work to be considered. The surveys can be split into the programmed riverine surveys of the five year programme, additional riverine surveys brought about by specific problems (i.e mortalities, relaxation of consents at sewage treatment works), and stillwater surveys.

i) Programmed and additional River Surveys

This report covers the fifth year of a five year programme. Survey progress for EEC designated and non-designated fisheries is illustrated in Appendix 5, the fishery survey map. A temporary halt has now been called before the start of the new programme to allow us to assess the information already gathered and to reassess the direction in which the programme has taken us. The original objective of the programme was to assess the 1200 km of river designated under EEC directive 75/659 which were considered feasible with current techniques. There are now 1526 km of EEC designated river (1039.6 km cyprinid, and 486.4 km salmonid) of which some 1300 km can now be surveyed.

This directive, issued in 1978, instructed all member states to designate watercourses capable of supporting salmonid (game) or cyprinid (coarse) fisheries. These watercourses are required to comply with stipulated water quality parameters in order to protect fish life. The N.R.A. Thames Region still uses the standard of service set by Thames Water for EEC designated fisheries, in the form of a minimum target biomass (weight of fish per area) of $20g/m^2$ for cyprinid and $15g/m^2$ for salmonid waters. An additional target is for 80% of EEC designated watercourses to comply with the relevant biomass figures. The importance of surveying non-designated waters is also recognised, many of these waters provide excellent fisheries, although these are not within the original formal survey programme.

Fish populations are affected directly and indirectly by a range of environmental factors including water quality, quantity and habitat structure. The response of fish populations to these factors provides an important biological indicator of environmental quality. The river survey programme provides biological monitoring to identify depressed fish populations which may result from factors such as poor water quality, land drainage operations, low flows and pollution incidents. The surveys also provide important baseline data which enables both short and long term changes to be assessed.

The details of the programmed and additional river surveys undertaken in 1989/90 are presented in Table 5 and a summary of the results is provided in Table 6. Two important points to note are, the large numbers of carry-over surveys reported, and also the tremendous increase in additional survey work for 1988-89, which delayed the formal survey programme.

Table 5

## Programmed River Surveys 1989/90

| Watercourse | Survey Length (km) | Length EEC Des.(km) | Length Non-EEC Des.(km) | No. Sites | No.EEC Des. Sites | Compliance With Target Biomass Sites | Length | % L |
|---|---|---|---|---|---|---|---|---|
| **Programmed Surveys 1989/90** | | | | | | | | |
| Tidal Thames | 112.0 | 0 | 112.0 | 0 | 0 | Totally Qualitative Survey | | |
| River Bourne N. | 21.0 | 6.5 | 14.5 | 3 | 2 | 2/2 | 6.5/6.5 | 100 |
| River Bourne S. | 22.0 | 0 | 22.0 | 9 | 0 | Report being compiled | | |
| Lower Wey & Nav. | 15.0 | 15.0 | 0 | 10 | 10 | Fieldwork incomplete | | |
| River Ray (Oxon) | 27.9 | 0 | 27.9 | 6 | 0 | Fieldwork incomplete | | |
| River Wye | 15.7 | 0 | 15.7 | 4 | 0 | Fieldwork incomplete | | |
| River Coln | 10.0 | 10.0 | 0 | 3 | 3 | Report being compiled | | |
| River Churn | 10.0 | 10.0 | 0 | 4 | 4 | Report being compiled | | |
| TOTAL | 233.6 | 41.5 | 192.1 | 39. | 19* | 2/2 | 6.5/6.5 | 100 |
| **Surveys carried over from previous years and completed** | | | | | | | | |
| Upper Colne | 20.0 | 1 | 19.0 | 6 | 1 | 0/1 | 0/1 | 0% |
| River Misbourne | 23.0 | 5.5 | 17.5 | 6 | 2 | 0/2 | 0/5.5 | 0% |
| River Ver | 15.6 | 14.4 | 1.2 | 6 | 5 | 0/5 | 0/14.4 | 0% |
| River Gade | 22.6 | 22.6 | 0 | 6 | 3 | 3/6 | 11.3/22.6 | 50.% |
| River Cray | 14.1 | 14.1 | 0 | 7 | 7 | 0/7 | 0/14.1 | 0% |
| River Darent | 33.4 | 33.4 | 0 | 11 | 11 | 7/11 | 21.4/33.4 | 64.% |
| Upper Wey | 119.2 | 112.0 | 7.2 | 33 | 27 | 5/27 | 17/112.0 | 15.1% |
| River Churn | 41.3 | 37.3 | 4.0 | 13 | 13 | 4/13 | 4/37.3 | 10.7% |
| Ampney Brook | 12.6 | 0 | 12.6 | 6 | 0 | Not applicable no target biomass | | |
| Grand Union Canal | 89.1 | 32.3 | 56.8 | 19 | 5 | 2/2 [Other 3 EEC site qualitative only] | 5.8/5.8 | 100% |
| TOTAL | 390.9 | 272.6 | 118.3 | 113 | 74 | 21/74 | 59.5/246.1 | 24.2% |

**Uncompleted Surveys carried over from the previous year**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| River Wandle | 16.9 | 7.4 | 9.5 | 7 | 4 | Report being compiled | | |
| River Kennet | 163.0 | 135.0 | 28.0 | 50 | 44 | Report being compiledd | | |
| River Cherwell | 86.5 | 52.1 | 34.4 | 11 | 3 | Report being compiled | | |
| River Coln | 15.0 | 11 | 4.0 | 5 | 4 | Report being compiled | | |
| | 281.4 | 205.5 | 75.9 | 73 | 55 | 0 | 0 | 0% |

**Additional Programmed Surveys 1989/90**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Cripsey Brook | 16.7 | 8.1 | 8.6 | 5 | 4 | Report under review | | |
| River Mole | 48.5 | 22.3 | 26.2 | 7 | 3 | Report being compiled | | |
| River Roding | 1 | 1 | 0 | 1 | 1 | 0/1 | 0/1 | 0% |
| River Whitewater | 3 | 3 | 0 | 2 | 2 | 0/2 | 0/3 | 0% |
| River Ray(Wilts) | 20.9 | 7.8 | 13.1 | 4 | 2 | Report being compiled | | |
| Shill Brook | 12.4 | 0 | 12.4 | 3 | 0 | Report being compiled | | |
| River Windrush | 20.0 | 10.0 | 10.0 | 4 | 2 | Report being compiled | | |
| Oxford Canal | 5 | 1.5 | 3.5 | 4 | 1 | Report being compiled | | |
| TOTAL | 127.5 | 53.7 | 73.8 | 30 | 15 | 0/3 | 0/4 | 0% |

Table 6 - Summary of Programmed River Surveys 1989/90

| Stage of Survey | Length Surveyed (km) E.E.C. designated fisheries | Non-designated rivers |
|---|---|---|
| Reported Surveys | | |
| 1989/90 | 6.5 | 126.5 |
| 1988/89 (carried over) | 240.3 | 61.5 |
| 1987/88 (carried over) | 32.3 | 56.8 |
| Additional 1989/90 | 4.0 | 0 |
| TOTAL | 283.1 | 244.8 |
| Surveys being compiled/reviewed | | |
| 1989/90 | 20.0 | 22.0 |
| 1988/89 (carried over) | 205.5 | 75.9 |
| Additional 1989/90 | 49.7 | 73.8 |
| TOTAL | 275.2 | 171.7 |
| Surveys with fieldwork incomplete | | |
| 1989/90 | 15.0 | 43.6 |
| **Total surveys 1989/90** | 573.3 | 460.1 |

Of the 16 additional and programmed surveys undertaken in 1989/90, only 3 have their fieldwork incomplete. 9 are under review or being compiled and 4 have been reported. The reported surveys cover 10.5 km of EEC designated fisheries and 126.5 kms of non-designated rivers. Of the 14 carry-over reports, 4 are still being compiled and 10 have been reported. The reported surveys cover a further 272.6 km of EEC designated fisheries and 118.3 km of non-designated rivers.

The eight additional surveys conducted in 1989/90, covered 53.7 km of EEC designated rivers and 73.8 km of non-designated rivers. They included limited surveys of the River Roding, following a fish kill caused by pollution and dewatering, the River Whitewater following a complete weed die back, and the Oxford Canal post mortality survey, following a pollution. The Cripsey Brook and River Ray were surveyed following a failure to meet EEC designated standards for total and unionised ammonia. The Rivers Mole, Ray, Shill Brook and Windrush were surveyed because of the relaxation of consents to discharge, at some of the associated sewage treatment works.

In total, survey reports have been produced in 1989/90, covering 283.1 km of EEC designated fisheries and 244.8 km of non-designated rivers. Fieldwork is complete and reports are being compiled/reviewed on a further 275.2 km of EEC designated fisheries and 181.7 km of non-designated river. Fieldwork remains incomplete on only 15 km of EEC designated fisheries and 43.6 km of non-designated river. The following surveys were dropped from

the 1989/90 survey programme. The River Thame, because of pressures created by the additional survey programme. The Maidenhead Cut, because of pressures from other urgent works, and the Lee flood Relief Channel, because of manpower problems, other urgent works and the weather. A special survey of selected sites on the Ampney Brook, to assist with the Cotswold groundwater monitoring scheme, has had to be deleted because the watercourse dried up.

In 1989/90, completed surveys showed that 25.7% of EEC designated fisheries achieved their target biomass. This figure fails to meet the NRA Thames Regions target of 80% compliance. The reasons for the failures are detailed in Table 7.

Table 7 - Reasons for EEC Fishery Failures

| Length EEC fishery that failed (km) | % | Reason for failure |
|---|---|---|
| 116.05 | 60.9 | Poor habitat/poor river engineering |
| 54.2 | 28.4 | Low flows/over abstraction/dewatering |
| 19.35 | 10.2 | Water quality/surface run off |
| 1.0 | 0.5 | Unknown |
| Total 190.6 | | |

Failure to comply with target biomass can be due to a range of factors as seen above. The general reasons for failure are usually water quality, quantity and habitat status. As previously mentioned the survey programme has been temporarily halted. This will allow staff time to examine each survey carefully and produce plans for the enhancement of each watercourse. Enhancement work, however, requires a combined effort involving many internal departments and external bodies. As a matter of course, as the additional and programmed surveys are completed, the results are brought to the attention of other departments in N.R.A. Thames Region and interested or responsible bodies, where necessary. This is regarded as a contribution to the overall assessment of the feasibility of environmental improvement of the watercourse.

Finally as a temporary halt has been called to the survey programme, it is of interest to find how far we have progressed. A total of 806.3 km (52.8% of the total EEC designated fisheries in the NRA Thames Region) has either been reported, is being compiled/reviewed or has fieldwork incomplete and has been surveyed at least once. Thus a total of 1460.5 km of watercourses have been surveyed, some as many as three times during the five year period. The original target of covering all 1200 km of feasible EEC designated watercourses has not been achieved but in practice a far greater amount of survey work has been undertaken. Inevitably over such a time span the programme has had to be flexible and adapted to meet new needs.
A further 654.2 km of non-designated river has been surveyed at least once. With respect to compliance with biomass targets 40.1% of EEC designated fisheries reported so far, achieved their target biomass.

ii) Stillwater Surveys

During 1989/90, 9 stillwater surveys were carried out. Of these 8 were management surveys undertaken at club request, to assess stock level/ composition and health status, and to make recommendations for the improvement of the water. These were at:

Manor Pond, Cobham
Sutton-at-Hone Lakes
Burgess Park Lake, Walworth
Farley Moor Balancing Lake
Maiden Erleigh Lake
West Cranleigh Nurseries
Bramshill Police College Lakes
Blackthorn Pond

A further report was produced in connection with presumed poor Roach recruitment at Sundridge Lake. Of these surveys 7 are complete and have been reported.

c) Advisory Work

The advisory works undertaken by the Authority can be split into three headings External, Internal and Planning Applications. It should be noted that for external and internal advisory works only visits/meetings are recorded. A large amount of time is spent giving such help over the telephone, which goes unrecorded. The same to a lesser extent is true of planning applications. Advisory work forms a major section of the Authorities work to maintain, improve and develop fisheries. Angling clubs can seek advice and receive visits free of charge. Other fishery owners and tenants may receive one free visit before being subject to a charge.

i) External Advisory Work

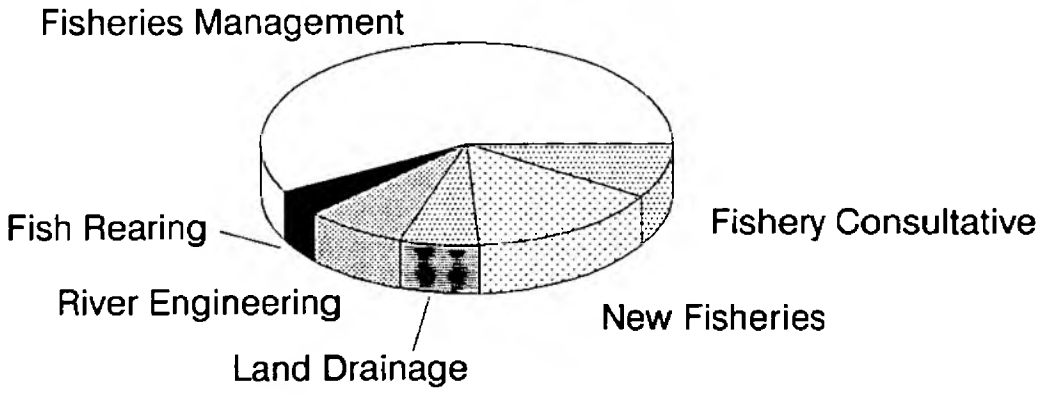
During 1989/90 241 external advisory meetings/visits were attended. The Authority has an internal standard of service, of a 28 day response time to such requests, and the compliance level for 1989/90 was 98.3% (237 out of 241 visits)

External advisory visits cover a wide variety of topics and a breakdown of these is provided in Table 8

Table 8 - External Advisory Work

| General Heading | Areas of Advice | % | No. of Visits |
|---|---|---|---|
| Fisheries Management | Stocking/Culling<br>Fishery Surveys<br>Fish Health<br>Weed Control<br>Habitat Enhancement<br>Water Quality/Pollution | 57.7 | 139 |
| Creation of New Fisheries | Fishery design<br>Habitat enhancement<br>Water quality<br>Stocking | 15.4 | 37 |
| Fishery Consultatives | Meetings to discuss fishery<br>Matters in consultatives<br>Region | 8.7 | 21 |
| River Engineering | Flood alleviation schemes<br>Re-routing rivers<br>Fishery protection measures<br>Habitat enhancement<br>Planning liaison<br>Abstraction/low flow | 7.9 | 19 |
| Land Drainage | Fishery protection measures<br>Remedial work<br>Habitat enhancement<br>Planning liaison<br>Conservation liaison | 6.2 | 15 |
| Fish Rearing | Setting up intensive units<br>Setting up extensive units<br>Planning liaison | 4.1 | 10 |
| | TOTAL | | 241 |

# Fig 4 External Advisory Work - Areas of Advice



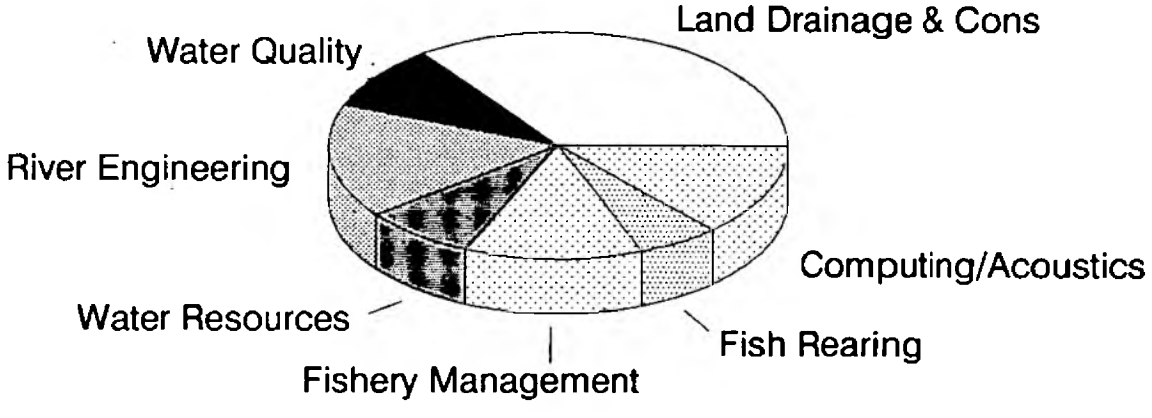

ii) Internal Advisory Work

In addition to providing advice to external bodies, the department has an important input into the fishery implications of works carried out by other functions of the Authority during 1989/90, 174 visits/meetings were attended to liaise with other departments as detailed in Table 9

Table 9 - Internal Advisory Work

| Area of Advice | % | No. of Visits |
|---|---|---|
| Land Drainage & Conservation | 35.1 | 61 |
| River Engineering | 16.1 | 28 |
| Computing/Acoustics | 13.2 | 23 |
| Fishery Management | 12.6 | 22 |
| Water Quality | 9.2 | 16 |
| Water Resources/Low flow | 8.1 | 14 |
| Fish Rearing | 5.7 | 10 |
| TOTAL | | 174 |

# Fig 5 Internal Advisory Work - Areas of Advice



Examples of the departments advisory input includes schemes with potentially large impacts on fisheries such as the Blackwater Valley Route (A30,M3,A31). This project is at its primary stage and is of concern to Authority engineers, the land drainage department, conservation and biology. Other large projects under consideration include C.E.G.B. plans to develop generating capacity at Chelsea and Greenwich. Smaller routine works undertaken by the Authority also offer useful opportunities to enhance fisheries. For example, routine dredging of the River Colne, was used to enhance the riverine environment by providing pools, an island and a wetland area. This project involved the local club Watford Piscators and the conservation group. Recent survey work on the River Wye, identified enhancements that could be made to this urbanised river. With the cooperation of the flood defence department and conservation, diversity of habitat was increased by installing marginal shelves, current deflectors, constructing a fish spawning weir and planting trees.

NB Planning Liaison work used to be included in external/internal advisory work, but this workload has significantly increased during the reporting year and it now has its own section. A significant number of visits/meeting are generated by this work, and the total number of advisory visits/meetings will be given at the end of this section.

iii) Planning Liaison

This aspect of advisory work represents an increasing workload. Formal records of this activity only started being kept from January, 1990, so this is a part year record only.

The fisheries department of the NRA Thames Region has duties under Section 141/Schedule 17 of the Water Act 1989, to maintain, improve and develop fisheries. In addition it has a wide range of specific powers and obligations under the Salmon and Freshwater Fisheries Act 1975 as amended by Schedule 17 of the Water Act. It exercises these duties by providing advice to our Planning Liaison Department, Councils and developers about the impact of proposed planning development on fisheries, under the Town and Country Planning Act (1971). These developments range from marinas to mosques, but are usually concerned with industrial and housing development, road building and charges of land use.

Further fisheries advice is provided to our Environmental Assessment Department, Councils and developers, about developments which are believed to have a significant effect on the environment and fall under Statutory Instruments 1119 or 1217 and require an Environmental Impact Assessment A breakdown of planning applications dealt with, visits made and EIA's dealt with is summarised in Table 10

Table 10 Planning Applications and EIA's and Associated Visits/Meetings

[Part Year Only]

| No. Received | No. Dealt | Visits/ Meetings | EIA Not Required | EIA Input Required |
|---|---|---|---|---|
| 215 | 215 | 111 | 3 | 2 |

An example of the departments input into a planning application is the Forge Farm Business Park at Crawley. As a result of our input, a meeting was held with the developers, during which measures were agreed to ameliorate initial works impact to the Gatwick Stream and proposals were put forward by the developers to enhance the Gatwick Stream, the surrounding woodland and wetland areas.

EIA inputs were made regarding the proposed construction of a power station at Barking, on the Tidal Thames and to the Aylesbury arterial drainage study, produced by Thames NRA.

The total number of advisory visits/meetings attended during 1989/90 was 526. this represents a 38.4% increase over the previous year.

d) Emergency Works

These comprise fish rescues and fish mortalities. Fish rescues are undertaken where significant numbers of fish are reported to be at risk. NRA Thames Region has an internal standard of service which requires an on site response within the following target times:-

0900 - 1700 - 2 hours
1700 - 0900 - 2.5 hours

For practical and safety reasons rescues will only take place during daylight hours. Furthermore, if the officer in charge of the site decides that the site is too dangerous, the rescue will be abandoned. (This actually happened during an emergency rescue on a recently dewatered settling lagoon, this year).

Fish mortalities represent a major and unplanned area of work during the months from May to September. The major inputs from fisheries are assistance to pollution staff to try to alleviate the cause of the mortality, assessment of the mortality and informing the club/riparian owner concerned, of the loss, pursuing compensation claims and reinstatement of fisheries.

1989/90 was a 'drought' year during which we experienced an unusually warm summer and low rainfall. This event had a significant effect on both rescues and mortalities, by increasing problems due to low flows, algal blooms, low D.O.s, general drainage and increasing the incidence of disease amongst fish populations, by increasing the stress that they were under.

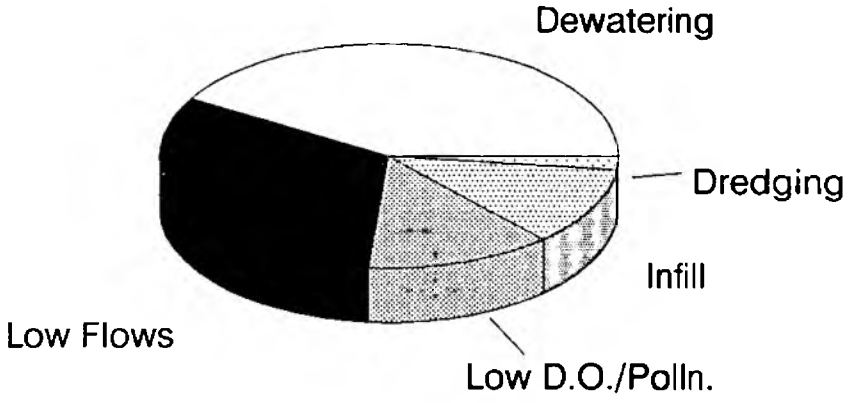
i) Fish Rescues

During 1989/90, 53 rescues were carried out, an increase of 76.7% on the previous year. 30 of these were planned, a 50% increase on the previous year, and 23 were emergencies, a 130% increase. All emergency operations were attended within the target time. An estimated 10.0 tonnes, 93,000 fish were taken during these operations. The major causes of the rescues are detailed in Table 11.

Table 11 Reasons for Fish Rescues

| Reason | Nos of Rescues | % |
|---|---|---|
| Dewatering | 22 | 41.5 |
| Dried Out/Low Flow | 17 | 32.1 |
| D/O, Algal Bloom,Pollutions | 7 | 13.2 |
| Infill | 6 | 11.3 |
| Dredging | 1 | 1.9 |
| | 53 | |

# Fig 6 Reasons for Fish Rescues




During the year several large rescues were undertaken. The largest was a planned draindown and desilting of Raphael's Park Lake, Romford. A combined Fisheries East Team spent a week removing 4.0 tonnes (50,000) fish and transferring them to other council waters. The drought conditions put large numbers of fish at risk, because of low D.O. problems. During one incident on the Oxford Canal only prompt action by fisheries and pollution staff, working through the night and using emergency aeration equipment; saved thousands of fish. Fish stressed by low D.O.s, should only be removed from the water as a last resort. Bearing this in mind, fisheries staff have field-tested various systems, and chosen an American unit called 'Aire-02'. This equipment is versatile in operation and portable, and should increase our capabilities in this field. Other notable rescues were at the Mollins A.C. Fishery, Wendover where 750 kilos of fish were rescued as the lake dried up, and at the Fullers Earth Angling Club's balancing pit, at Nutfield where 600 kilos of large carp, pike and tench were removed as the lake was drained down, and transferred to the club's nearby Glebe pit.

It should be noted that this section only refers to rescues undertaken. Much work is done monitoring rescue sites, especially in a dry year such as 1989. Of special note here is the Darent valley, during 1989 some five kilometres of the river from Brooklands Lake to Horton Kirby dried up. A further 100 hectares of gravel pits associated with the river had

substantially reduced water levels. By October 1989 the situation was critical, plans were in hand to use all the fishery staff and 20 flood defence operatives from the Barrier for rescues. Fortunately, and to the great relief of all concerned, it rained, and the situation in the gravel pits was restored.

ii) **Fish Mortalities**

During 1989/90 147 fish mortalities were recorded, involving 101,000 fish of total weight 7.8 tonnes. A breakdown of the cause of mortalities is provided in Table 12 and full details are shown in Appendix 4.

Table 12 - Cause of Fish Mortalities

| Cause of Mortality | No. Of Mortalities | % | Weight (kg) | % |
|---|---|---|---|---|
| Unknown | 43 | 29.2 | 1733.6 | 22.2 |
| Dissolved Oxygen Problems | 21 | 14.3 | 1222.0 | 15.7 |
| Algal Bloom | 19 | 12.9 | 562.0 | 7.2 |
| General Drainage | 18 | 12.2 | 395.0 | 5.1 |
| Disease | 11 | 7.5 | 870.0 | 11.2 |
| Toxic Chemicals | 9 | 6.1 | 1236.2 | 15.9 |
| Dewatering/Low Flow | 9 | 6.1 | 158.2 | 2.0 |
| Sewage Treatment Works | 5 | 3.4 | 44.0 | 0.6 |
| Agricultural Discharge | 3 | 2.0 | 1452.0 | 18.6 |
| Angling Damage | 2 | 1.4 | 25.0 | 0.3 |
| Blocked/Broken Sewer | 2 | 1.4 | 16.0 | 0.2 |
| High Temperatures | 1 | 0.7 | 35.0 | 0.4 |
| Low pH | 1 | 0.7 | 20.0 | 0.3 |
| Silt Influx | 1 | 0.7 | 15.0 | 0.2 |
| Saline Intrusion | 1 | 0.7 | 6.0 | 0.09 |
| Post Stocking Stress | 1 | 0.7 | 1.0 | 0.01 |
| TOTAL | 147 | | 7791.0 | |

The number of recorded mortalities during 1989/90 shows a 69% increase on the previous year. The number of fish killed has increased dramatically by 406.8%, but the actual weight of fish killed has only increased by 36.5%. Bearing in mind the drought conditions of 1989, it is surprising that the weight of fish was not higher. During the reporting year larger numbers of smaller fish were killed, than in the previous year.

For the third year running, the unknown category of mortality tops the list, in numbers of mortalities and weight of fish killed. Many of these mortalities suffer from late reporting, but bearing in mind the conditions experienced during the summer (high temperatures, low D.O.'s, algal blooms and low flows) a proportion could be justifiably ascribed to the prevailing conditions. However, this still leaves a hard-core of fairly major mortalities for which there is no known cause.

The other major causes (by number of mortalities) of fish mortalitites were dissolved oxygen problems, algal blooms, general drainage and disease. These fit well with the conditions experienced during the reporting year. The general drainage category relates to storm run-off, a problem particularly in urban areas, after periods of dry weather.

If the mortalities are viewed in terms of weight of fish killed, the picture changes. Again the unknown category produces the largest weight, followed by agricultural discharge (only three recorded incidents), toxic chemicals, dissolved oxygen problems and disease. For the three years covered by the Annual Reports agricultural discharge has been among the top three killers (by weight) of fish. Another worrying aspect during the year is the weight of fish killed by toxic chemicals. For the third year running the number of fish recorded as being killed by sewage treatment works is low.

Finally back to the River Darent, although 5 kilometres of river dried-up during the summer of 1989, no major mortality was observed and the river and surrounding stillwaters were under almost daily surveillance. From a recent fishery survey it was estimated that 1.5 tonnes of riverine fish disappeared. Casual rescues by anglers, authority rescues (although few) and migration out of the area are cited as reasons for the absence of great numbers of dead fish. It is probable, however, that the majority of the smaller fish were taken by predatory birds.

## 5. Operational Investigations

### Salmon

The research project at Walton to investigate the scale of salmon smolt losses at a reservoir intake was continued in 1989, and supplemented with an examination of the effect of behavioural screens on salmon smolts. These screens, one formed by a dense curtain of ascending air bubbles and the other formed by an array of strobe lights, were run intermittently throughout the trial period. Their ability to deter smolts from approaching the strong flow at the mouth of the abstraction channel and becoming entrained was studied by releasing trial batches of fish a short distance upstream.

A total of eleven experimental releases of smolts were undertaken, of which five were controls, with the remainder investigating the effects of combinations of the screens or independently operated screens.

A proportion of the fish which became committed to, and descended the abstraction channel was captured at the louvre screen trap. The efficiency of the trapping structure was assessed on all but one of the trials by the release into the channel of small batches of marked smolts immediately upstream of the trap. These estimates of efficiency varied between 46% and 89% ( mean 69% ), with the extremes occurring on higher and lower channel flows respectively, and were used to correct the numbers of captured fish derived from the river releases.

An average of 1524 smolts were released into the river for each trial. Capture of fish in the trap continued for between three and eleven days after the release: on average 59% of the final catch was made in the first day, 83% was caught by the end of the second day and 94% by the end of the third day. Almost exactly one third of the catch was taken during daylight, and two thirds at night. The corrected catches during the principle period of post-stocking movements (two to six days post-release) were examined for the effects of the behavioural screens on fish behaviour.

The results from the five control releases, when no screens were used, were combined with the comparable data of 1988 and a significant relationship was detected between the percentage of the rivers flow abstracted at Walton and the corrected percentage of the batch of smolts which descended the channel. This relationship was used to predict the corrected catch during the trials when screens were used. The actual catches on these occasions were significantly lower than those predicted showing that the screens were deterring smolts from becoming entrained.

Catches when the strobe light screen was used alone were very similar to those predicted suggesting that the lights had little effect. However, when the bubble screen was used, either alone or in conjunction with the strobes, then the observed catch was on average just 30% of that predicted. This is felt to represent significant deflection of smolts away from the channel mouth.

During the trials, the catch of salmon smolts derived from the previous years parr stocking and of coarse fish was also monitored. The number of these smolts was relatively low, however interesting information on the timing of this migration and its diurnal variation was obtained. It is smolts such as these for which any future deployment of screens will be made, so this data is potentially important. The catch of coarse fish allowed us to examine the growth rate of the fry of each species, and to make minimum estimates of the numbers of fish lost from the river into the abstraction channel.

In order to quantify the effects of the screens on the deflection of salmon smolts more accurately similar trials will be undertaken in 1990/91. Additionally the trapping efficiency for coarse fish fry and the efficiency of the screens in deflecting these from the channel will also be investigated. The results from this work should allow us to make recommendations for the use of such screens at many of the abstraction points on the Thames.

## 6. Salmon Rehabilitation Programme

The run of salmon in 1989 proved to be as disappointing as that of 1988 was encouraging. Although a total exceeding the record of 323 set in 1988 was expected, in the end only 132 fish were recorded (fig. 7). This represented a total run for the year of perhaps 200 salmon. The monitored trap catch of 91 fish was made up of 76 grilse and 15 older salmon, one of which weighed nearly 21lbs and is the largest salmon recorded since our work began in 1979.

The reasons for this relatively poor year were linked clearly to the drought conditions which persisted throughout the period when the majority of the returning fish were expected. The drastically reduced flow over Teddington weir resulted in a lack of stimulus for fish to enter the estuary and ascend the river, and a reduced dilution of the large sewage treatment work's effluents. The resulting precarious level of dissolved oxygen and the very high water temperature, which occasionally reached 27 degrees centigrade frequently presented conditions lethal to salmon.

Considering these poor conditions, it is perhaps surprising that so many fish were monitored. It is fortunate that some salmon managed to pass through the tideway before the worst of the conditions in August and September, and also many grilse delayed their migration until conditions improved. The late arrival of fresh-run grilse in October and November had not been observed in the Thames until this year. The pattern of trap catches (fig.8) clearly shows the impact of the poor environmental conditions: many of the grilse excluded from the river in the summer are thought to have been completely deterred from migration.

The number of young salmon stocked in the spring of 1989 continued the increasing trend. New nursery areas on the River Kennet are now used, and these have very large capacities for fry and parr. Over 120,000 yearling parr and 36,000 nine-month-old fry were released throughout the nursery streams, and more than 41,000 one-year-old and 12,000 two-year-old smolts were stocked into the lower reaches of the Thames from Molesey down as far as Woolwich in the tideway (table 13). Over 70% of the parr and 57% of the smolts were produced at the QEII cage-rearing site, the remainder of the stock being either purchased or donated to the Thames Salmon Trust. Over 13,000 of the smolts were batch marked using a combination of fin-clips and coded-wire microtags. This will permit the identification of those returning adults valuable for our propagation programme, and accurate estimation of their rate of return. An interesting product of the microtagging we have done is the report of returns from high-seas and interceptory fisheries: so far Thames tags have been returned from the fisheries of Greenland, the Faroes, Ireland and the north-east coast of England.

As the rehabilitation programme progresses, so does the urgency to optimise our use of returning adult fish for the propagation of future stock fish. Arrangements have now been completed for the contracting out of the rearing of our ova, derived from Thames returnees or some other suitable source, past the complicated young stages of the life-cycle. After this the fish will be transferred and reared to stocking size at QEII reservoir. In this way, it is hoped that we will quickly progress to becoming virtually self-sufficient for our future stock requirements and that an initial genetic selection process will enhance the rate of return of adult fish.

Considerable progress has been made in our fish pass construction programme. During the year both Goring and Shepperton fish passes were commissioned and others at Sunbury and Chertsey were virtually completed. Initial design work is now under way for passes at Romney, Bell, Mapledurham and Teddington weirs the latter two of which will be built during programmed major weir reconstructions. All of these passes have benefited from commercial sponsorship attracted by the Thames Salmon Trust. Further developments have also occurred on some tributaries, with three passes under construction in the Colne system (Chess Weir, Horton Mill and Hythe End) and design started for two others. The rivers Lea, Wye, Wey and Loddon all have one obstruction for which fish pass design has commenced.

The Thames Salmon Trust has continued to attract donations and sponsorship. In addition to the passes above, funding is in hand for the construction of a further three main river fish passes at Old Windsor, Bray and Hurley weirs. The Trust continues to benefit greatly by the generous donations of fish by Joseph Johnston and Sons Ltd. of salmon food by B.P. Nutrition (U.K.) Ltd., and of computer equipment by Planning Consultancy Ltd.

Figure 7.

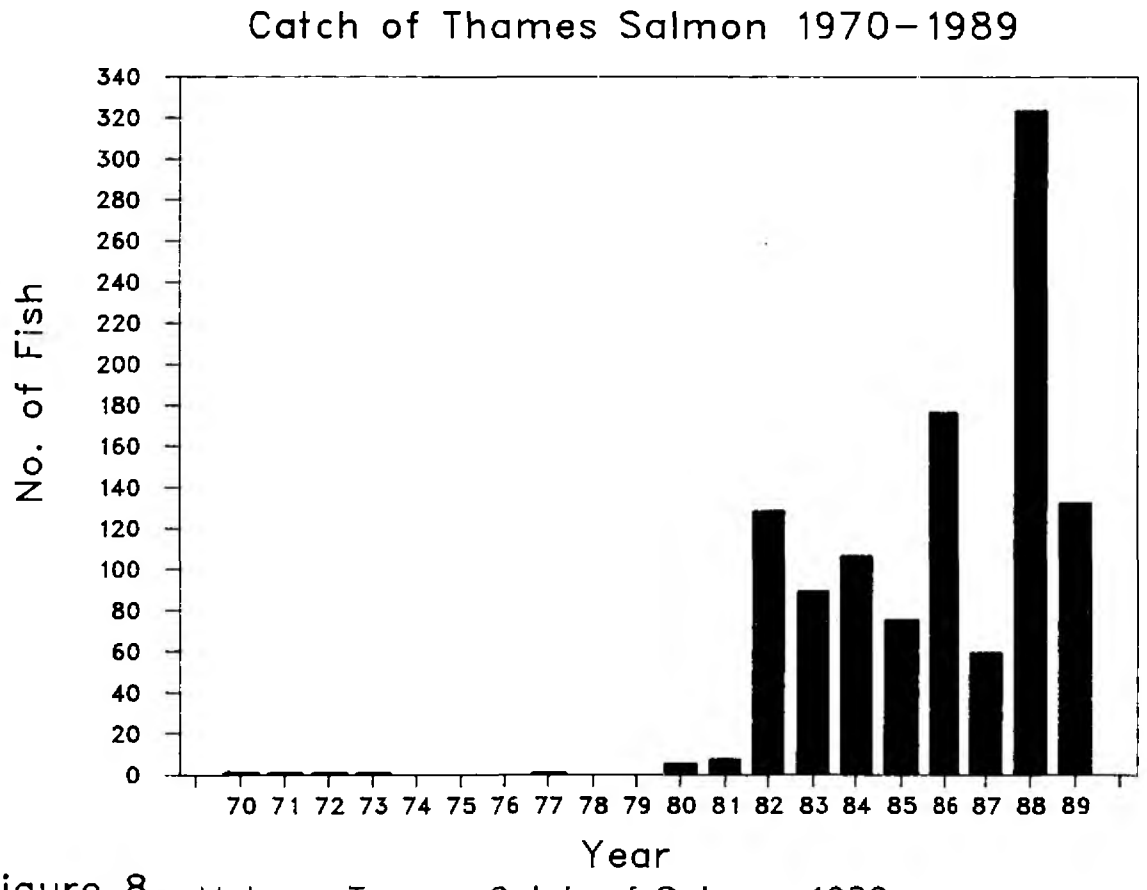



Figure 8. Molesey Trap – Catch of Salmon 1989

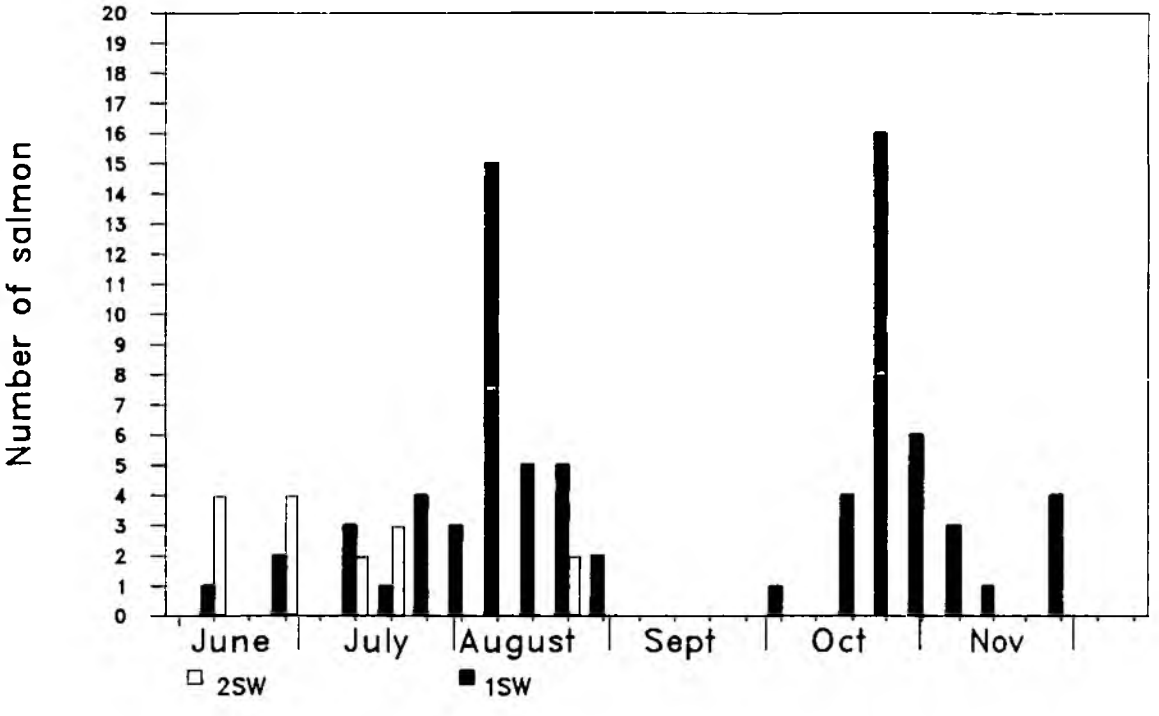


Table 13 - Stocking of Juvenile Salmon - 1989

| Date | Source | Site | Number |
|---|---|---|---|
| Fry | | | |
| 18.1.89 | Avon Springs, Hatchery | R. Kennet | 36,000 |
| Parr | | | |
| 14.2.89 | QEII | R. Loddon | 1,344 |
| 20.3.89 | QEII | R. Lambourne | 15,319 |
| 30.3.89 | QEII | R. Wey, South | 19,247 |
| 3.4.89 | Avon Springs, Hatchery | R. Kennet | 10,587 |
| 3.4.89 | " " " | R. Enborne | 21,523 |
| 12.4.89 | QEII | R. Lyde | 4,530 |
| 14.4.89 | QEII | R. Loddon | 14,488 |
| 18.4.89 | QEII | R. Pang | 7,558 |
| 20.4.89 | QEII | R. Wey, North | 4,632 |
| 3.5.89 | QEII | R. Kennet | 11,503 |
| 8.5.89 | QEII | R. Kennet | 2,722 |
| 15.5.89 | QEII | R. Chess | 4,158 |
| 18.5.89 | Old Basing, Hatchery | R. Kennet | 3,000 |
| | | | 120,611 |
| Smolts | | | |
| 13.3.89 | QEII | R. Loddon | 5,930 |
| 22.3.89 | QEII | R. Thames, Molesey | 6,078 |
| 10.4.89 | QEII | R. Thames, Woolwich | 6,705 |
| 10.4.89 | QEII | R. Thames, Molesey | 3,300 |
| 10.4.89 | QEII | R. Thames, Molesey | 1,000 |
| 13.4.89 | QEII | R. Thames, Woolwich | 5,678 |
| 17.4.89 | QEII | R. Thames, Woolwich | 1,920 |
| 19.4.89 | Old Basing, Hatchery | R. Thames, Twickenham | 4,600 |
| 26.4.89 | Old Basing, Hatchery | R. Thames, Twickenham | 2,100 |
| 26.4.89 | Old Basing, Hatchery | R. Thames, Twickenham | 1,700 |
| | | | 39,011 |

N.B. 14,510 smolts also released into river as part of the Walton investigations. (See Section 5).

## 7. Fish Rearing

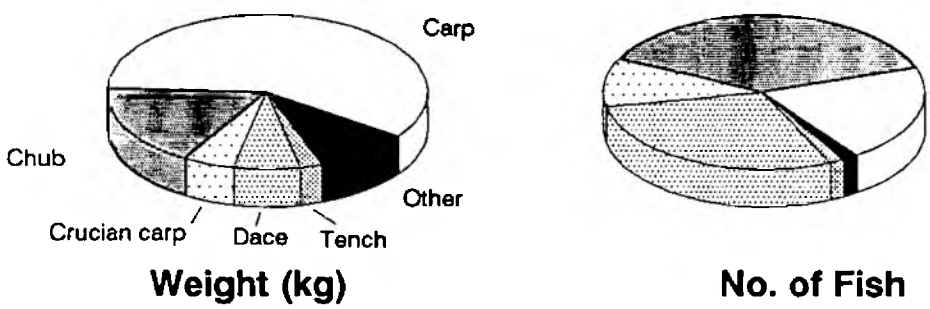
Development of the Authority fish farms was continued through the year on several fronts. At Fobney Fish Farm in Reading spawning ponds partially built during 1988 were completed in time for the 1990 season and a new swedish tank holding facility is presently under construction. A dedicated food store was provided and a number of large items of equipment furnished including feeders, graders, fish counter and fish pump. Other items purchased, which are based at Fobney, but will find their uses across the region, included a 6" water pump and a mini tractor with trailer. At QE2 reservoir, a new store was constructed and power laid to it.

The feasibility study examining the possibility of creating an additional fish farm site at Ryemeads was completed. This concluded that the ambitious plan proposed would not be cost-beneficial. In the event, plans were also overtaken by the results of privatisation of the Water Authorities when most of the site remained in the ownership of the new PLC. The freehold of six of the smaller lagoons (approx 2 hectares) did however pass to the NRA and it is intended to use these for extensive production of lacustrine cyprinids to augment production at Fobney.

Output of coarse fish from Fobney more than doubled that achieved in 1988. Some 31433 fish weighing 772kg were output compared to 15,500 (488kg) the previous year. The vast majority of these were chub and dace used for restitution and enhancement right around the area including the Rivers Thames, Cole, Blackwater, Lodden, Roding and tribs, Lea, Beane, Wandle, Darent and Mole.

Together with carp and bream from the cage facility at QE2 some 39,533 coarse fish, weighing 2063kg and worth more than £32,250 were output for reinstatement, enhancement and management purposes. Details concerning the species reared during 1989/90 are provided in Fig. 9.

# Figure 9 - Species Reared 1989/90




In contrast to the success with coarse fish, rearing of salmon and sea trout for the Thames Salmon Rehabilitation scheme had a poor year. Production dropped to just over 76,000 fish from more than 123,000 the previous year. High winter temperatures, over ambitious stocking densities with mixed sources of fish, water quality problems at Kempton and subsequent disease problems all played a part in severely reducing the

anticipated production. Heavy storms in January and February also caused problems, particularly in the case of sea trout since the entire production was lost when a cage dragged its anchor and was smashed on the banks of the reservoir. Rearing of carp due to be output in autumn 1990 was also compromised by the loss of 5,000 fish from a storm-damaged cage.

Some 1315 rainbow trout weighing 1.91 tonnes were produced for sale to augment the stocking of larger fish into Thames Water Utility put-and-take fisheries.

Overall production from the sites was more than 116,000 fish weighing nearly 5.1 tonnes and worth approximately £76,500 (excluding £4,900 subject to insurance claim).

Full details of fish produced at both sites are given in table 14.

Table 14 - Fish Output from Reservoir Cages and Fobney Ponds

| | Cage Rearing | | | Pond Rearing | | |
|---|---|---|---|---|---|---|
| Species | Nos. | Average Weight(g) | Total Weight(kg) | Nos. | Average Weight(g) | Total Weight(kg) |
| Salmon parr | 53,420 | 9.2 | 491 | | | |
| S1 smolts | 20,195 | 19.7 | 397 | | | |
| S2 smolts | 2,401 | 85.4 | 205 | | | |
| Supersmolts | 0 | 0 | 0 | | | |
| *Seatrout | 0 | 0 | 0 | | | |
| Rainbow Trout | 1,315 | 1,452.0 | 1,910 | | | |
| Brown Trout | 0 | 0 | 0 | | | |
| Barbel | | | | 295 | 136.0 | 40 |
| Bream | 320 | 500.0 | 160 | | | |
| *Carp | 7,780 | 145.0 | 1,131 | 219 | 379.0 | 83 |
| Chub | | | | 14,965 | 24.1 | 360 |
| Crucians | | | | 3,979 | 26.1 | 104 |
| Dace | | | | 11,398 | 12.2 | 139 |
| Tench | | | | 577 | 80.4 | 46 |
| Total | 85,431 | | 4,294 | 31,433 | | 772 |

*Some 15,000 Sea Trout, value £2,900 and 5,000 carp, value £2,000, were lost through cage damage in the Jan/Feb storms and are the subject of an insurance claim.

It should be noted that the production of salmon and sea trout is that which was grown on during 1989/90 for output in spring/summer 1990. Actual stocking of these species during 1989 consisted of the production reported in the annual report (fish rearing section) of March, 1989.

## 8. Enforcement of the Salmon and Freshwater Fisheries Act 1975 and Fishery Byelaws

Angling clubs or individuals wishing to undertake a number of fishery related activities, require the consent of the National Rivers Authority under the provision of the SFFA Act - 1975 and the Fishery Byelaws before any activities commence. In addition to monitoring these consents, fisheries staff need to ensure that anglers are licensed, and complying with the relevant Thames NRA Region Byelaws. Tideway patrols are also necessary, to ensure that commercial eel fishermen are licensed and using the correct gear, and not fishing in prohibited areas.

The issue of consents for the use of electrofishing gear (SFFA, Section 5); for the introduction of fish into inland waters (SFFA, Section 30); for the use of prohibited modes of fishing during the close season (Byelaw 5(1); for the use of instruments other than rod and line for taking fish (Byelaw 6); for the removal of undersized fish (Byelaw 8); for the removal of Crayfish (Byelaw 14); for the use of fixed engines (Byelaw 17), are controlled by the Senior Fishery Officer, responsible for the area.

Applications for consents are summarised in Tables 15 and 16.

**Table 15 - Application for Consents Under the Salmon and Freshwater Fisheries Act 1975**

| Section SFFA | Use of Electrical Devices (Section 5) | | Introduction of Fish (Section 30) | |
|---|---|---|---|---|
| | (1988/89) | 1989/90 | (1988/89) | 1989/90 |
| Fisheries East | (9) | 17 | (240) | 230 |
| Fisheries West | (33) | 49 | (195) | 184 |
| Total | 42 | 66 | (435) | 414 |

**Table 16 - Applications for Consents Under the Thames Fishery Byelaws**

| | 5(i) | | 14 | | 6 & 8 | | 17(D) | |
|---|---|---|---|---|---|---|---|---|
| | (1988/89) | 1989/90 | (88/89) | 89/90 | (88/89) | 89/90 | (88/89) | 89/90 |
| Fisheries East | (0) | 6 | (0) | 3 | (33) | 70 | (0) | 1 |
| Fisheries West | (6) | 7 | (0) | 3 | (26) | 41 | (0) | 0 |
| Total | (6) | 13 | (0) | 6 | (59) | 111 | (0) | 1 |

In comparison with last year consents issued for the use of electrofishing gear (Section 5, SFFA) and seine netting gear (Byelaw 6) were up by 57% and 88% respectively. With fears of a major outbreak of the notifiable disease Spring Viremia of Carp (SVC) not materialising, many angling clubs and syndicates were embarking on stillwater management projects postponed from the previous year. 1989/90 saw a marked increase in Byelaw 5 (i) consents which have been mainly issued to allow for any-method trout fishing during the annual coarse fish close season. Consents issued under Byelaws 14 and 17(D) are specifically designed to regulate the removal of non-native crayfish and the use of traps.

A summary of the various byelaws under which consents can be issued are as follows:-

Byelaw

5(i) Prohibits fishing for salmon, trout and rainbow trout with methods other than artificial fly or lure during the annual close season for freshwater fish, except with the written consent of the Authority.

6 Prohibits the use of instruments other than rod and line for catching all types of fish (other than fixed engines which are separately authorised), without the written consent of the Authority.

8 Prohibits the removal of undersized fish without the written consent of the Authority.

14 Prohibits the removal of crayfish from non-tidal waters, except with the previous consent of the Authority, in writing.

(N.B. It is an offence to take the native crayfish (Austropotamobius) under the Wildlife & Countryside Act (1981) except under licence from the Nature Conservancy Council).

17(D) Prohibits the use of fixed engines (traps) for the taking of all types of fish without the written consent of the Authority.

Late in 1989 a report released by MAFF revealed that high levels of Dieldrin had been found in eels captured from the tidal Thames. As a result a loss of public confidence led to a collapse in the tidal Thames commercial eel fishery and subsequently a 60% reduction in the number of licenced traps used.

During 1989/90 19 patrols were made of which only 4 were purely for enforcement. 11 patrols involved some survey work and a further 4 were made to assist pollution control and biology. The development of sampling techniques in the upper tideway was also undertaken.

Table 17 summarises the activities of the commercial eel netsmen.

Table 17

| | Fykes | Traps | Trawls |
|---|---|---|---|
| Application for Licences | 9 | 1 | 1 |
| Number of Instruments | 221 | 3 | 1 |

The seizure of illegal nets in tidal waters was down last year with only one pair of fykes taken compared with 24 for the previous year. Illegal trawling for eels was also perceived to be less of a problem than in the previous year.

On December 1st the Metropolitan area took delivery of their new inshore fishery vessel the Kingfisher. This boat is especially designed for fisheries investigations and to assist in lower tideway enforcement.

Table 18 - Number of Licences Checked and Offence Reports Issued

| Type of Licence | Adult | Junior | OAP/ disabled | Second Lic. | Off. Rep. |
|---|---|---|---|---|---|
| Fisheries East | 8778 | 3509 | 551 | 3698 | 1361 |
| Fisheries West | 12415 | 3918 | 627 | 4350 | 1213 |
| Totals | 21193 | 7427 | 1178 | 8048 | 2574 |

Licencing statistics collated from the bailiffs patrol reports reveal broadly similar results to last years figures. During 1989/90 there was an overall decrease of 4.7% in the total number of licences checked. The sub-total of 2nd licences was also down by 11% following the previous years 52% increase which was attributed to the popular introduction of the £2 stamp system.

The Thames region's policy of prosecuting all adult anglers who are not in possession of a valid licence while fishing continues. Although there was a 13.7% rise in offence reports issued this does not necessarily mean there has been a sharp increase in licence evasion, as many anglers booked for 35/3 offences subsequently produce a valid licence. This leads to a rapid reduction in the number of offence reports forwarded for court action. Indeed, the number of anglers prosecuted for not possessing a valid licence dropped for the second consecutive year by 7.3% to 610. The average figure for fines and costs for all licence offences combined are:-

| | Fines (89) | Fines (90) | Costs (89) | Costs (90) |
|---|---|---|---|---|
| Fisheries East | (£29.00) | £34 | (£22.99) | £28 |
| Fisheries West | (£21.00) | £28 | (£24.00) | £25 |

**The Salmon and Freshwater Fisheries Act 1975**

Section 19(6)

During the annual close season for freshwater fish; fishing for, taking, killing or attempting to take or kill, any freshwater fish in any inland water, or fishing for eels by means of a rod and line in any such water is an offence.

Section 27(A)

Fishing for or taking fish otherwise than by means of an instrument which he is entitled to use for that purpose by virtue of a fishing licence in accordance with the conditions of the licence is an offence.

Section 35(3)

Failing to produce his licence or state his name and address is an offence.

**Thames Fishery Byelaws**

10(i)

Fishing with more than two rods and lines at the same time is an offence.

10(ii)

Leaving a rod and line, with bait or hook in the water, or otherwise not having sufficient control of the above is an offence.

**Successful Prosecutions under the S.F.F.A. Act - 1975 & Thames Byelaws**
**Table 19**

| Offence | | Number Prosecuted | | Fines (£) | Costs (£) |
|---|---|---|---|---|---|
| | | | | 89 - 90 | |
| **Fisheries East** | | | | | |
| S.F.F.A. - 1975 | | 88/89 | 89/90 | | |
| Section:- | 19(6) | (18) | 11 | 540 | 465 |
| | 27(A) | (183) | 204 | 7140 | 5620 |
| | 27(B) | (O) | 0 | - | - |
| | 35(3) | (102) | 42 | 970 | 1005 |
| Thames Byelaws | | | | | |
| | 10(i) | (9) | 13 | 395 | 415 |
| | 10(ii) | (O) | 6 | 100 | 120 |
| Total | | (312) | 276 | 9145 | 7625 |

**Fisheries West**

| | | 88/89 | 89/90 | | |
|---|---|---|---|---|---|
| S.F.F.A. - 1975 | | | | | |
| Section:- | 19(6) | (5) | 1 | 10 | 40 |
| | 27(A) | (328) | 326 | 9105 | 8425 |
| | 27(B) | (0) | 1 | 30 | 40 |
| | 35(3) | (22) | 25 | 695 | 270 |
| Thames Byelaws | | | | | |
| | 10(i) | (7) | 8 | 225 | 170 |
| | 10(ii) | (2) | 2 | 20 | 0 |
| Total | | (364) | 363 | 10085 | 8945 |

## 9. Staff

The full complement of managerial and operational staff is, as in the previous year 24.

This has been a stable year following last years reorganisation in staff structure. The only operational vacancy filled was the Fish Rearing Assistants post based at Fobney, vacated by Eddie Hopkins. This job has been taken up by David Readings who after completing his diploma at Sparsholt College went to work at Hammer Trout Farm before joining the NRA in May.

The Reading based Fisheries Administration Officer, Mandy Hunt resigned in November 1989 and was replaced by Debbie Miller in January 1990. One of her responsibilities is to co-ordinate the rod licence offence report processing system for the western area. In the eastern area the system is operated by Brenda Watson at Crossness.

All full time, part time and honorary staff in post up to March 1990 are listed in Appendix 2.

Appendix 1

## The Regional Fisheries Advisory Committee

On the 1st September 1989, the Thames Water Authority was privatised, and the National Rivers Authority came into existence. This changed the composition and terms of reference of the Regional Fisheries Advisory Committee.

### Terms of Reference

1) Until 31st August 1989

"The provision of advice to the Board on the discharge of the Authority's duty under paragraph (a) of Section 28 (1) of the Salmon and Freshwater Fisheries Act 1975."

2) From 1st September 1989

"Within the overall context of N.R.A. policy, to advise the Authority regionally on the manner in which it is to discharge its duty to maintain, improve and develop the salmon, trout freshwater and eel fisheries in its are; and to report annually to the N.R.A. on its activities."

| Membership | Areas of Interest |
|---|---|
| H.P. Parry FCA (Chairman | NRA appointment |
| A.E. Hodges FIFM (Vice Chairman) | Angling including local fisheries consultative/liaison groups. |
| J.S. Alabaster B.Sc. D.Sc. CBiol. F.I.Biol. F.I.F.M. | Academic/Professional Bodies |
| * H.J. Franklin | Angling including local fisheries consultative/liaison groups |
| ** M. Davies | Regional Flood Defence Committee |
| ** Mrs. J.J. George M.Sc F.I.Biol. | Conservation |
| M.A. Gregory Barrister LL.B. | Country Landowners Association |
| * B.J. Hardcastle B.Sc. FICE FIWES MI MechE DIC | Matters relating to land drainage |
| ** Dr. D.G. Jamieson | Water and Sewage Undertakers |
| B. Knights M.Sc, M.I.Biol., M.I.F.M. | Commercial Fisheries |

| | | |
|---|---|---|
| ** | D. Komrower | Fish Farming |
| | G.G. Lee | Angling including local fisheries consultative/liaison groups. |
| * | P.T. McIntosh | Thames Water |
| | E.J. Macer FIFM | Angling including local fisheries consultative/liaison groups |
| | A.V. Meddle | Sea Fisheries Committees |
| ** | D. Wales | Angling including local fisheries consultative/liaison groups |
| * | T.C. Small | Fish Farming |
| | A.L. Williams M.I.F.M. | Angling including local fisheries consultative/liaison groups |
| ** | Mrs. J.K. Wykes B.Sc | Regional Rivers Advisory Committee |

* Until 31st August 1989
** From 1st September 1989

## N.R.A. R.F.A.C. as from the 1st September 1989

### Membership Categories (no more than 15 members in total)

| | |
|---|---|
| Chairman appointed by NRA | 1 |
| Nominee of RRAC | 1 |
| Nominee of RFDC | 1 |
| Nominee of TFCC | 5 |
| In respect of commercial fishing interests | 1 |
| In respect of fish farming interests | 1 |
| Nominee of Kent & Essex Sea Fisheries Committee | 1 |
| Nominee of Country Landowners Association | 1 |
| In respect of conservation interests | 1 |
| In respect of academic/professional bodies | 1 |
| Nominee of Water and Sewage Undertakers | 1 |
| | 15 |

Appendix 2

## Fisheries Personnel

### Members of the Full Time Fishery Staff

| | |
|---|---|
| Dr. J.W. Banks | Regional Fishery Manager |

### Central Staff

| | |
|---|---|
| G.S. Armstrong | Senior Fishery Officer |
| P. Gough | Fishery Officer |
| K. Miller | Fishery Officer |
| J.M. Moore | Fishery Officer |
| D. Readings | Fish Rearing Assistant (May 1990) |

### Fisheries East Area

| | |
|---|---|
| J. Reeves | Senior Fishery Officer |

### Thames East

| | |
|---|---|
| M. Pilcher | Area Fishery Officer |
| N. Buck | Fishery Officer |
| R. Tyner | Fishery Officer |
| N. Sampson | Fishery Assistant |

### Metropolitan

| | |
|---|---|
| S. Colclough | Area Fishery Officer |
| C. Dutton | Fishery Officer |
| N.J. Foulkes | Fishery Officer |
| J. Lyons | Fisheries Assistant |

### Fisheries West Area

| | |
|---|---|
| Dr. A. Butterworth | Senior Fishery Officer |

### Mid Thames

| | |
|---|---|
| J. Sutton | Area Fishery Officer |
| R. Preston | Fishery Officer |
| A. Thomas | Fishery Officer |
| S. Sheridan | Fisheries Assistant |

### Upper Thames

| | |
|---|---|
| V. Lewis | Area Fishery Officer |
| A. Killingbeck | Fishery Officer |
| D. Willis | Fishery Officer |
| E. Hopkins | Fisheries Assistant |

### Clerical Staff

| | |
|---|---|
| D. Miller | Reading (Jan 1990) |
| B. Watson | Crossness |

## Part-Time Bailiffs

### Fisheries East

#### Thames East

A. Brightley
C. Costema
D. Tait
G. Haynes

#### Metropolitan

W. Marshall
I. Martin
P. Vecchi
J. Gilbert

### Fisheries West

#### Mid Thames

D. Draper
M. Koulermou
E. Tysoe

#### Upper Thames

D. Moss
W. Vigor
P. Willis

## Honorary Water Bailiffs

### Fisheries East

#### Thames East

T. Amos
J. Arnold
W Bolton
T. Bovis
D. Brown
D. Bucks
L. Budgen
T. Cockfield,
D. Craddock
S. Davis
P. Dukes
P. Dyer
I. D'Silva
E. Etty
J. Farley
J. Gilbert
W. Rusley
P. Sene
A. Sibley
I. Sullivan
D. Turner
L. Gregory
G. Haynes
L. James
D. Keys
R. Kirk
C. Landells
A. Levy
T. Mansbridge
T. McSweeney
R. Mitschke
J. Pope
H. Reid
P. Ribbon
P. Richardson
D. Roe
K. Rulkan
K. Walker
D.Wall
A. Wheeler
I. Wilson
I. Wittey

#### Metropolitan

V. Alonso
H. Blake
S. Banks
D. Bonsels
C. Cooper
S. Falconer
D. Goldsmith
P. Newman
F. Norton
J. Pinnington
D. Purton
B. Scott
D. Stephens
J. Taberman

D. Hodges
R. Jenks
B. Monk
L. Waite
T. Whiteman
A. Williams

**Fisheries West**

Mid Thames

M. Beale
L. Dalton
S. Holt
D. Mattison
D. Metcalfe
P. Oram
M. Purchase
G. Rance
D. Tatnall
C. Watts
R. Want
L. Webber
R. Wheldon

Upper Thames

A. Kembrey
M. Gausman
C. Fanning
B. Gough

**APPENDIX 3** **FISH STOCKED BY THE AUTHORITY**

The following abbreviations are used:

| Reason for Stocking | How Acquired |
|---|---|
| REQ=Stocking Requests | R=Reared in-house |
| RES=Research | B=Bought in |
| REI=Reinstatement | S=Culled from River |
| GRO=Growing on | C=Culled from Lake |
| ENH=Enhancement | F=Fish Rescue |

**1. Thames West**

| Date | Source | Site | Species | Number | Wt.(Kg) | Reason |
|---|---|---|---|---|---|---|
| 5-Apr-89 | Barnet Pond | Cranleigh Waters | Bream | 2000 | 200 | REQ |
| 8-Apr-89 | Cut Mill Lake | Bramley Park | Bream | 1600 | 400 | REQ |
| 8-Apr-89 | Cut Mill Lake | Bramley Park Lake | Bream | 700 | 350 | REQ |
| 11-Apr-89 | River Whitewater | River Hart | Dace | 350 | 80 | REQ |
| 21-Apr-89 | Hartwell House Lake | Ox. Canal, Kidlington | Perch | 500 | 10 | REI |
| 21-Apr-89 | Hartwell House Lake | Ox. Canal, Kidlington | Roach | 10000 | 200 | REI |
| 25-Apr-89 | Carmel College Lake | Ox. Canal, Kidlington | Pike | 30 | 30 | REI |
| 25-Apr-89 | Carmel College Lake | Ox. Canal, Kidlington | Perch | 100 | 20 | REI |
| 25-Apr-89 | Carmel College Lake | Ox. Canal, Kidlington | Roach | 120 | 20 | REI |
| 26-Apr-89 | R.Glyme - Blenheim | T.C. Pit | Pike | 140 | 70 | GRO |
| 3-May-89 | Hartwell Manor, Oxon | Bas.Canal, Surrey | Roach | 1500 | 120 | REQ |
| 3-May-89 | Hartwell Manor, Oxon | Cobbetts Lk, Send | Tench | 9 | 18 | REQ |
| 3-May-89 | Hartwell Manor, Oxon | Enton Lake, Surrey | Tench | 9 | 18 | REQ |
| 3-May-89 | Hartwell House Lake | Cotswold W.P. Pit 26 | Perch | 500 | 10 | REQ |
| 3-May-89 | Hartwell House Lake | Trow Pool, Bucknell | Perch | 40 | 1 | REQ |
| 3-May-89 | Hartwell House Lake | Swalcliffe School Pd | Roach | 350 | 7 | REQ |
| 3-May-89 | Hartwell House Lake | Cotswold W.P. Pit 26 | Roach | 7000 | 140 | REQ |
| 3-May-89 | Hartwell House Lake | Swalcliffe School Pd | Tench | 12 | 15 | REQ |
| 3-May-89 | Hartwell House Lake | Swalcliffe School Pd | Perch | 100 | 2 | REQ |
| 3-May-89 | Hartwell House Lake | Trow Pool, Bucknell | Roach | 260 | 5 | REQ |
| 12-May-89 | Hartwell House Lake | Moreton A.C. Lake | Tench | 25 | 30 | REQ |
| 13-May-89 | R.Kennet | Coate Water | Pike | 73 | 73 | REQ |
| 22-May-89 | Pitstone chalk pit | Castle Cement pond | Perch | 23 | 2.5 | REQ |
| 6-Jun-89 | SADAC Pit | New Lake,Standlake | Mixed | 539 | 96 | REQ |
| 9-Jun-89 | Pitstone chalk pit | G.U.Canal,Marsworth | Perch | 250 | 30 | REQ |
| 23-Jun-89 | Hen & Chickens Pond | B.stoke Canal, Ash | Roach | 500 | 65 | REQ |
| 23-Jun-89 | Hen & Chickens Pond | B.stoke Canal, Ash | Crucian carp | 25 | 5 | REQ |
| 5-Jul-89 | Hammer Trout Farm | R.Ock, Milford | Brown trout | 100 | 2.5 | ENH |
| 5-Jul-89 | Hammer Trout Farm | R.Wey, Farnham-Alton | Brown trout | 500 | 12.5 | ENH |
| 5-Jul-89 | Hammer Trout Farm | R.Bourne, Bisley | Brown trout | 400 | 10 | ENH |
| 5-Jul-89 | Hammer Trout Farm | R.Windrush, Bourton | Brown trout | 1000 | 50 | RES |
| 11-Jul-89 | Fleet Pond | Stratfield Saye Lake | Bream | 200 | 100 | REQ |
| 13-Jul-89 | Sunninghill Park Lk. | Statfield Saye Lake | Carp | 600 | 500 | REQ |
| 14-Jul-89 | Hollybush Pit | Stratfield Saye Lake | Carp | 800 | 60 | REQ |
| 14-Jul-89 | Hammer trout Farm | R.Coln, Whelford | Brown trout | 1000 | 50 | RES |
| 21-Jul-89 | Hammer Trout Farm | R.Churn, Rendcomb | Brown trout | 474 | 23 | REQ |
| 21-Jul-89 | Hammer Trout Farm | Shill Brook | Brown trout | 474 | 23 | REQ |
| 26-Jul-89 | Blackhill Pond | Little Switzerland | Crucian carp | 200 | 6 | REQ |
| 28-Jul-89 | Stud Green Pond | R. Wey, Guildford | Mixed | 800 | 50 | REQ |
| 9-Aug-89 | Fobney Fish Farm | Coate Water | Carp | 19 | 43 | REQ |
| 21-Aug-89 | R.Thame, Waterstock | R.Thame, Waterstock | Mixed | 1000 | 90 | REQ |
| 22-Aug-89 | Alderbrook pond Cran | Whiphurst pnd Cran | Carp | 1800 | 180 | REI |
| 4-Sep-89 | Alfold Village Pond | Loseley Moat | Crucian carp | 200 | 20 | REI |
| 6-Sep-89 | Juniper Pnd,Shalfrd | Stoke Backwater, Wey | Mixed | 300 | 30 | REQ |
| 7-Sep-89 | Gt.Rissington Pond | Clanfield | Carp | 4000 | 125 | GRO |

**Thames West (cont)**

| Date | Source | Site | Species | Number | Wt.(Kg) | Reason |
|---|---|---|---|---|---|---|
| 12-Sep-89 | SADAC Pit,S.Harcourt | Witney Pit | Mixed | 500 | 120 | REQ |
| 12-Sep-89 | R.Windrsh,N.Br.Mill | R.Windrush,N.Bridge | Mixed | 200 | 130 | REQ |
| 3-Oct-89 | Clanfield Stock Pond | Bourton Lakes | Carp | 3500 | 105 | REQ |
| 3-Oct-89 | Clanfield Stock Pond | The Moat,Manor House | Carp | 400 | 25 | £££ |
| 6-Oct-89 | Q.E.II Fish Farm | K&A Canal Padworth | Carp | 250 | 25 | REQ |
| 11-Oct-89 | Q.E.II Fish Farm | Spade Oak,Marlow | Carp | 500 | 100 | REQ |
| 11-Oct-89 | Q.E.II Fish Farm | Woodcote Pond | Carp | 50 | 10 | REI |
| 13-Oct-89 | Q.E.II Fish Farm | Wey Nav Gford-Adlstn | Carp | 250 | 25 | ENH |
| 17-Oct-89 | Wendover Lake | Quainton Stock Pond | Mixed | 2050 | 750 | GRO |
| 18-Oct-89 | Q.E.II Fish Farm | Clanfield stock pond | Carp | 450 | 90 | GRO |
| 18-Oct-89 | Q.E.II Fish Farm | R.Cole,Coleshill | Carp | 300 | 50 | REQ |
| 18-Oct-89 | Q.E.II Fish Farm | Moat (Mrs Alt) | Carp | 200 | 50 | £££ |
| 20-Oct-89 | Q.E.II Fish Farm | Royal Holloway Coll. | Carp | 200 | 14 | RES |
| 22-Oct-89 | The Limes | Bear Br.Aylesbury | Mixed | 3600 | 90 | REI |
| 22-Oct-89 | The Limes | California Br,Aylesb | Mixed | 1600 | 40 | REI |
| 24-Oct-89 | Q.E.II Fish Farm | Badshot Lea Small | Carp | 500 | 35 | REQ |
| 24-Oct-89 | Farmoor intake chnls | R.Cole U.S.Coleshill | mixed | 60 | 5 | REI |
| 24-Oct-89 | The Limes(H.W.) | R.Cole,Coleshill | Crucian carp | 90 | 5 | REQ |
| 25-Oct-89 | Pyrton Mnr small pd | Pyrton (large pond) | Carp | 2000 | 400 | REQ |
| 25-Oct-89 | Pyrton(small pd) | Pyrton (large Pd) | Roach | 2000 | 100 | REQ |
| 25-Oct-89 | Pyrton (small pond) | Clanfield stock pond | Carp | 250 | 60 | GRO |
| 26-Oct-89 | River Coln,Fairford. | R.Cherwell,Cropredy. | Grayling | 750 | 150 | REQ |
| 27-Oct-89 | Q.E.II Fish Farm | WeyNav Send-Addlestn | Carp | 2600 | 260 | ENH |
| 31-Oct-89 | R.Coln,Fairford. | R.Windrush,Hardwick. | Grayling | 120 | 30 | REQ |
| 31-Oct-89 | R. Coln-Williamstrip | R.Coln-U.S. Dudgrove | Grayling | 100 | 15 | REQ |
| 10-Nov-89 | Fobney Fish Farm | R.Thames,Hanington | Dace | 1000 | 13 | REI |
| 10-Nov-89 | Fobney Fish Farm | R.Cole, Coleshill | Dace | 1000 | 13 | REI |
| 14-Nov-89 | Cranleigh School | Whiphurst | Carp | 30 | 60 | REQ |
| 14-Nov-89 | Cranleigh School | High Hurst | Mixed | 2000 | 60 | REQ |
| 14-Nov-89 | R.Windrush,Gt.Riss | R.Windrush,Worsham | Mixed | 126 | 50 | REQ |
| 14-Nov-89 | Fobney Fish Farm | R.Thames,Hanington | Barbel | 100 | 17 | REI |
| 15-Nov-89 | R.Windrush,Gt.Riss | R.Windrush,Worsham | Mixed | 271 | 80 | REQ |
| 23-Nov-89 | Fobney Fish Farm | Blackwater | Chub | 2800 | 84 | ENH |
| 23-Nov-89 | Fobney Fish Farm | Loddon,Dintn&Arb.bdg | Chub | 1800 | 54 | REI |
| 27-Nov-89 | Marcos Pit, Theale | R.Wey, Guildford | Mixed | 60 | 10 | ENH |
| 6-Dec-89 | Fobney Fish Farm | R.Thames,Hanington | Chub | 1000 | 21 | REI |
| 6-Dec-89 | Fobney Fish Farm | R.Cole,Friars Court | Chub | 1000 | 21 | REI |
| 6-Dec-89 | Fobney Fish Farm | R.Cole,Coleshill | Chub | 1000 | 21 | REI |
| 8-Dec-89 | Fobney Fish Farm | Clanfield | Mixed | 1310 | 20 | GRO |
| 8-Dec-89 | Fobney Fish Farm | Drayton Manor | Mirror carp | 200 | 30 | REQ |
| 8-Dec-89 | Fobney Fish Farm | Ham Pool, S.Cerney | Crucian carp | 500 | 4 | REQ |
| 8-Dec-89 | Fobney Fish Farm | College Farm, Aynho | Crucian carp | 250 | 2 | REQ |
| 15-Dec-89 | Fobney Fish Farm | Bas.Canal Surrey Sec | Crucian carp | 850 | 17 | ENH |
| 15-Dec-89 | Fobney Fish Farm | Woking AA Stock Pond | Crucian carp | 250 | 5 | GRO |
| 20-Dec-89 | Pond Cottage, Churt | Bas.Canal Brookwood | Mixed | 4000 | 80 | ENH |
| 24-Jan-90 | Maiden Erlegh Pond | Bracknel Mill Pond | Carp | 240 | 120 | REQ |
| 24-Jan-90 | Maiden Erlegh Pond | Bracknel Mill Pond | Roach | 1200 | 60 | REQ |
| 27-Jan-90 | Milton Manor | Bear Brk,Aylesbury | Mixed | 250 | 40 | REI |
| 30-Jan-90 | Coate Nature Reserve | R.Cole,Coleshill | Mixed | 2100 | 210 | REI |
| 30-Jan-90 | Coate Nature Reserve | R.Evenlode,Ascott | Mixed | 2100 | 210 | REQ |
| 30-Jan-90 | Coate Nature Reserve | R.Cherwell,Banbury | Mixed | 2100 | 210 | REQ |
| 30-Jan-90 | Coate Nature Reserve | Coate Main Lake | Mixed | 140 | 100 | REQ |
| 30-Jan-90 | Coate Boating Lake | Bradstone Pit | Roach | 2000 | 40 | REQ |
| 30-Jan-90 | Coate Boating Lake | Coate Main Lake | Mixed | 200 | 40 | REQ |
| 31-Jan-90 | Clanfield Stock Pd | Bucknell Village Pond | Crucian carp | 20 | 0.5 | REQ |
| 31-Jan-90 | Coate Nature Reserve | Hethe Lake | Roach | 700 | 50 | REQ |
| 31-Jan-90 | Clanfield Stock Pd | Hethe Lake | Carp | 40 | 40 | REQ |
| 31-Jan-90 | Clanfield Stock Pd | Swalcliffe Grange | Carp | 40 | 5 | £££ |
| 31-Jan-90 | Coate Nature Reserve | Swalcliffe Grange | Roach | 100 | 8 | £££ |
| 5-Feb-90 | Beech Cottage Pond | Bas.Canal, Deepcut | Roach | 1000 | 60 | ENH |
| 7-Feb-90 | Sandhurst,Trout Lake | Staff Coll.A.C.Lake | Mixed | 700 | 130 | REQ |
| 7-Feb-90 | Sandhurst,Trout Lake | Staff Coll.A.C.Lake | Tench | 100 | 100 | REQ |
| 7-Feb-90 | Guildford Area | Tubney Woods(pond 5) | Rudd | 110 | 10 | REQ |
| 21-Feb-90 | Wintershall Lake | Brampton Pond | Mixed | 300 | 45 | REQ |
| 21-Feb-90 | Wintershall Lake | Wey Nav.d/s New Haw | Mixed | 1100 | 44 | ENH |

## Thames West (cont)

| Date | Source | Site | Species | Number | Wt.(Kg) | Reason |
|---|---|---|---|---|---|---|
| 15-Mar-90 | Quainton Stock Pond | Wendover Lake | Mixed | 2000 | 420 | REI |
| 15-Mar-90 | Quainton Stock Pond | Iffley Pond | Carp | 70 | 12 | REQ |
| 20-Mar-90 | Ashlea Pool | Bradstone Pit 27 | Roach | 500 | 100 | REQ |
| 21-Mar-90 | Wey Arun Canal | Barnet Pond | Mixed | 40 | 0.2 | REQ |
| 23-Mar-90 | Curtis' Pit, Radley | Dorchester Pit | Mixed | 230 | 100 | REQ |
| 23-Mar-90 | Curtis' Pit Radley | Whitebarn Lake | Mixed | 40 | 20 | REQ |

### Summary

| | Tot.Wt(kg) | Tot.No. |
|---|---|---|
| REQ | 5531 | 45749 |
| RES | 114 | 2200 |
| REI | 1455 | 29310 |
| GRO | 1120 | 8450 |
| ENH | 605 | 13660 |
| TOTAL | 8913 | 100109 |

## 2. Thames East

| Date | Source | Site | Species | Number | Wt.(Kg) | Reason |
|---|---|---|---|---|---|---|
| 5-Apr-89 | Q.E.II Fish Farm | R.Darent @ Shoreham | Brown trout | 80 | 28 | REI |
| 5-Apr-89 | Boxmoor Lake | MPAS W/Drayton Lake | Roach | 75 | 23 | ENH |
| 14-Apr-89 | Boxmoor Lake | Brooklands Dartford | Perch | 21 | 5 | REQ |
| 14-Apr-89 | Boxmoor Lake | Gatwick Lake,Crawley | Perch | 25 | 10 | ENH |
| 14-Apr-89 | Boxmoor Lake | Green Lane Pond | Perch | 25 | 10 | REQ |
| 14-Apr-89 | Boxmoor Lake | Waynefleet pondEsher | Perch | 25 | 10 | REQ |
| 14-Apr-89 | Boxmoor Lake | Watermead Lake | Perch | 26 | 6 | REQ |
| 14-Apr-89 | Boxmoor Lake | Gtwick Airport Pond | Perch | 25 | 10 | ENH |
| 14-Apr-89 | Boxmoor Lake | Broadfield,Crawley | Perch | 25 | 10 | ENH |
| 25-Apr-89 | Q.E.II Fish Farm | R.Mole @ S. D'Abern | Brown trout | 113 | 28 | REI |
| 25-Apr-89 | Q.E.II Fish Farm | R.Mole @ S. D'Abern | Brown trout | 113 | 28 | ENH |
| 3-May-89 | Raphaels Park Lake | Harrow Lodge Lake | Perch | 3000 | 30 | REQ |
| 3-May-89 | Raphaels Park Lake | Harrow Lodge Lake | Roach | 7000 | 280 | REQ |
| 8-May-89 | Lake Adj. R.Gade | Admirals Walk Lake | Pike | 20 | 15 | ENH |
| 17-May-89 | Catalins, W/Abbey | Claverhambury Fm.Res | Carp | 268 | 194 | REQ |
| 26-May-89 | Pond adj. R.Stort | R.Stort | Mixed | 15 | 6 | REQ |
| 31-May-89 | Ruxley Ponds | Ruxley Pits | Rudd | 5000 | 90 | REQ |
| 27-Jun-89 | Crossness STW | Sutton-at-Hone DDAPS | Carp & tench | 8000 | 1 | REQ |
| 14-Jul-89 | Fulham Gas Pond | Sutton-at-Hone Lakes | Carp | 150 | 40 | ENH |
| 16-Jul-89 | Fulham Gas Pond | Sundridge Lakes | Carp | 50 | 10 | REQ |
| 16-Jul-89 | Fulham Gas Pond | Ruxley Lakes | Carp | 100 | 20 | REQ |
| 19-Jul-89 | Fulham Gas Pond | Gatwick Lake | Carp | 58 | 8 | REQ |
| 19-Jul-89 | Fulham Gas Pond | Manor Pond, Cobham | Carp | 75 | 11 | REQ |
| 26-Jul-89 | Rede Hall Lake | Southmere,Thamesmead | Carp | 51 | 76 | ENH |
| 26-Jul-89 | Fulham Gas Pond | Southmere,Thamesmead | Carp | 243 | 29 | ENH |
| 31-Jul-89 | Grovelands Park Lake | R.Roding,Passingford | Roach | 2000 | 240 | REI |
| 8-Aug-89 | Pond @ Chalfont | R.Colne @ Maple Ldge | Roach | 75 | 3 | REQ |
| 12-Sep-89 | Ardlebury Manor Lake | Admirals Walk Lake | Pike | 12 | 10 | REQ |
| 13-Sep-89 | Raphaels Park Lake | Harold Lodge Lake | Mixed | 20000 | 1600 | REQ |
| 14-Sep-89 | Raphaels Park Lake | Harold Lodge Lake | Mixed | 5000 | 400 | REQ |
| 15-Sep-89 | Raphaels Park Lake | Harold Lodge Lake | Mixed | 25000 | 2000 | REQ |
| 18-Sep-89 | Raphaels Park Lake | Harold Lodge Lake | Roach | 200 | 18 | REQ |
| 20-Sep-89 | Rye Meads Lagoons | Met Pit,Fishers Grn | Rudd | 25 | 6 | REQ |
| 25-Sep-89 | Gerrards X Pond | Admirals Walk Lake | Pike | 12 | 40 | REQ |
| 26-Sep-89 | Gerrards X Pond | West Drayton MPC | Tench | 64 | 88 | REQ |
| 27-Sep-89 | Stanford Rivers STW | R.Roding @ Abridge | Carp | 58 | 65 | REI |
| 27-Sep-89 | Stanford Rivers STW | R.Roding @ Abridge | Roach | 2200 | 200 | REI |
| 6-Oct-89 | Worley Park Pond | Connaught Waters | Carp | 158 | 204 | REQ |
| 15-Oct-89 | Gobians Lake | Nth.Middx Golf Club | Carp | 12 | 30 | ENH |
| 25-Oct-89 | New River @ Ware | Admirals Walk Lake | Pike | 85 | 155 | REQ |

**Thames East (cont)**

| Date | Source | Site | Species | Number | Wt.(Kg) | Reason |
|---|---|---|---|---|---|---|
| 25-Oct-89 | Stanford Rivers STW | Broadfield Ho.Crawley | Carp & tench | 180 | 28.5 | REQ |
| 25-Oct-89 | Stanford Rivers STW | Buchan Park Lake | Carp & Roach | 60 | 12.5 | REQ |
| 30-Oct-89 | Woolwich Graving Dock | Douster Pond,Crawley | Roach | 1038 | 35 | REQ |
| 1-Nov-89 | 7 Islands Mitcham | Admirals Walk Lake | Pike | 6 | 15 | REQ |
| 2-Nov-89 | Woolwich Graving Dock | Broomwood Lake | Roach | 1937 | 37 | REQ |
| 2-Nov-89 | Woolwich Graving Dock | Ruxley Big Lake | Roach | 1417 | 27 | REQ |
| 2-Nov-89 | Woolwich Graving Dock | The Dell,Woolwich | Perch | 40 | 11 | REQ |
| 2-Nov-89 | Woolwich Graving Dock | Bexton STW Lake | Perch | 67 | 11 | REQ |
| 3-Nov-89 | 7 Islands Mitcham | Paynes Lane Fishery | Tench | 100 | 40 | REQ |
| 8-Nov-89 | Woolwich Graving Dock | Rosebery Pk Lk,Epsom | Rudd | 264 | 4.5 | REQ |
| 9-Nov-89 | Woolwich Graving Dock | Longford Lake | Carp & tench | 63 | 130 | REQ |
| 9-Nov-89 | 7 Islands Mitcham | Bradbourne East Lake | Carp & tench | 118 | 122 | REQ |
| 10-Nov-89 | Fobney Fish Farm | Leigh Brook | Dace | 400 | 5.2 | REI |
| 10-Nov-89 | Fobney Fish Farm | R.Darent,Franks Lane | Dace | 600 | 7.8 | REI |
| 10-Nov-89 | Fobney Fish Farm | R.Wandle,Wilderness | Dace | 250 | 3.3 | REI |
| 10-Nov-89 | Fobney Fish Farm | R.Wandle,Hackbridge | Dace | 350 | 4.6 | REI |
| 10-Nov-89 | Fobney Fish Farm | Salfords Stream | Dace | 400 | 5.2 | REI |
| 13-Nov-89 | Fobney Fish Farm | R.Roding @ Pass/ford | Dace | 1500 | 15 | REI |
| 17-Nov-89 | 7 Islands Mitcham | Rosebery Pk Lk,Epsom | Perch | 168 | 6.1 | REQ |
| 20-Nov-89 | 7 Islands Mitcham | R.Thames,Putney | Pike | 47 | 28.2 | REI |
| 21-Nov-89 | Fobney Fish Farm | Cripsey Bk,Weald Bdg | Dace | 1000 | 10 | REI |
| 21-Nov-89 | Fobney Fish Farm | Cripsey Bk, Ongar | Dace | 1000 | 10 | REI |
| 21-Nov-89 | Fobney Fish Farm | R.Roding @ Pass/ford | Dace | 1500 | 15 | REI |
| 22-Nov-89 | 7 Islands Mitcham | Green Ln Pd,Newdigate | Perch | 168 | 6.1 | GRO |
| 22-Nov-89 | 7 Islands Mitcham | Castle Pd,Bletchingly | Carp | 5 | 13.3 | REQ |
| 22-Nov-89 | 7 Islands Mitcham | Green Ln Pd,Newdigate | Tench & Roac | 310 | 17.2 | GRO |
| 22-Nov-89 | 7 Islands Mitcham | Douster Pond,Crawley | Roach | 600 | 20.4 | REQ |
| 27-Nov-89 | Fobney Fish Farm | R.Roding @ Abridge | Chub | 1500 | 45 | REI |
| 27-Nov-89 | Fobney Fish Farm | R.Roding @ Pass/ford | Chub | 1500 | 45 | REI |
| 29-Nov-89 | Fobney Fish Farm | Cripsey Brook, Ongar | Chub | 300 | 9 | REI |
| 29-Nov-89 | R.Beane @ Hertford | R.Lee Nav @ Roydon | Pike | 36 | 15 | REI |
| 29-Nov-89 | Fobney Fish Farm | Cripsey Bk,Weald Bdg | Chub | 300 | 9 | REI |
| 29-Nov-89 | Fobney Fish Farm | R.Roding, S/Rivers | Chub | 300 | 9 | REI |
| 1-Dec-89 | Fobney Fish Farm | R.Lee @ Kings Weir | Barbel | 100 | 40 | ENH |
| 1-Dec-89 | Fobney Fish Farm | R.Lee @ Kings Weir | Chub | 100 | 3 | ENH |
| 1-Dec-89 | Fobney Fish Farm | R.Lee @ Kings Weir | Chub | 100 | 3 | ENH |
| 1-Dec-89 | Fobney Fish Farm | R.Lee @ Kings Weir | Barbel | 100 | 40 | ENH |
| 4-Dec-89 | Verulam Lake | R.Lee Navigation | Perch | 22 | 3 | REQ |
| 11-Dec-89 | Fullers Earth Pit | Glebe Lake, Nutfield | Carp | 300 | 500 | REQ |
| 11-Dec-89 | Fullers Earth Pit | Glebe Lake, Nutfield | Pike | 40 | 65 | REQ |
| 11-Dec-89 | Fullers Earth Pit | Glebe Lake, Nutfield | Mixed | 750 | 35 | REQ |
| 15-Dec-89 | Stanmore Marconi | Paynes Lane Fishery | Perch | 1000 | 55 | REQ |
| 15-Dec-89 | Stanmore Marconi | Paynes Lane Fishery | Rudd | 1000 | 40 | REQ |
| 15-Dec-89 | Stanmore Marconi | Boxers Lake, Enfield | Carp | 33 | 60 | REI |
| 19-Dec-89 | Rowley Lake, Slough | Paynes Lane Fishery | Perch | 1000 | 55 | REQ |
| 19-Dec-89 | Rowley Lake, Slough | Harefield No.1 Lake | Bream | 120 | 36 | REQ |
| 19-Dec-89 | Rowley Lake, Slough | Paynes Lane Fishery | Roach | 1000 | 60 | REQ |
| 19-Dec-89 | Rowley Lake, Slough | Harefield No.1 Lake | Carp | 1814 | 824 | REQ |
| 22-Dec-89 | Fobney Fish Farm | R.Beane | Chub | 500 | 10 | REQ |
| 22-Dec-89 | Fobney Fish Farm | R.Lee Navigation | Tench | 150 | 12 | REI |
| 22-Dec-89 | Fobney Fish Farm | Pincey Brook | Chub | 500 | 10 | REI |
| 22-Dec-89 | Fobney Fish Farm | R.Roding | Chub | 500 | 10 | REI |
| 22-Dec-89 | Fobney Fish Farm | R.Beane | Tench | 50 | 4 | REQ |
| 22-Dec-89 | Fobney Fish Farm | R.Roding site 2 | Chub | 500 | 10 | REI |
| 17-Jan-90 | Fobney Fish Farm | R.Wandle | Chub | 250 | 5 | ENH |
| 17-Jan-90 | Fobney Fish Farm | R.Wandle, Hackbridge | Chub | 350 | 7 | ENH |
| 17-Jan-90 | Fobney Fish Farm | R.Darent, H/Kirby | Chub | 600 | 10 | REI |
| 18-Jan-90 | Fobney Fish Farm | Salfords Stream | Chub | 350 | 7 | ENH |
| 18-Jan-90 | Fobney Fish Farm | Leigh Brook | Chub | 350 | 7 | ENH |
| 18-Jan-90 | Fobney Fish Farm | R.Mole @ Cobham | Barbel | 95 | 13 | ENH |
| 18-Jan-90 | Fobney Fish Farm | Tanners Brook | Chub | 200 | 4 | ENH |
| 12-Feb-90 | H/Kirby Silt Pond | R.Thames, Petersham | Pike | 72 | 28 | REQ |
| 26-Feb-90 | Lullingstone Lake | R.Thames @ Putney | Pike | 235 | 182 | REQ |
| 28-Feb-90 | Canons, Edgware | Hatfield Broadwater | Roach | 750 | 12 | ENH |
| 28-Feb-90 | Canons, Edgware | Hatfield Broadwater | Bream | 450 | 9 | ENH |

## Thames East (cont)

| Date | Source | Site | Species | Number | Wt.(Kg) | Reason |
|---|---|---|---|---|---|---|
| 28-Feb-90 | Canons, Edgware | Netteswell, Harlow | Bream | 50 | 2 | REI |
| 28-Feb-90 | Canons, Edgware | Netteswell, Harlow | Roach | 250 | 4 | REI |
| 7-Mar-90 | Wandsworth Common Pd | R.Mole @ Meath Green | Bream | 261 | 33 | REQ |
| 7-Mar-90 | Wandsworth Common Pd | R.Mole @ Meath Green | Roach | 7206 | 126 | REQ |
| 7-Mar-90 | Wandsworth Common Pd | Tilgate Forest Ponds | Roach | 2286 | 40 | REQ |
| 7-Mar-90 | Wandsworth Common Pd | R.Mole @ Meath Green | Perch | 182 | 4 | REQ |
| 12-Mar-90 | Wandsworth Common Pd | R.Darent, Brooklands | Mixed | 97 | 52 | REI |
| 15-Mar-90 | Becton Pylon Pond | Ruxley Lakes | Carp | 1000 | 98 | REQ |
| 20-Mar-90 | Becton/Squerrys Lake | Bletchinlgly Foxbor | Rudd | 268 | 8 | REQ |
| 20-Mar-90 | Becton Pylon Pond | Stamford Green Pond | Rudd | 550 | 5 | ENH |
| 22-Mar-90 | R.Darent, Castle Fm. | R.Darent HK - Hawley | Mixed | 10000 | 520 | REI |
| 23-Mar-90 | Hopfield Fisheries | R.Mole @ Meath Green | Mixed | 400 | 138 | REI |
| 23-Mar-90 | Boxmoor Trout Lake | R.Lee Navigation | Pike | 40 | 20 | REI |
| 23-Mar-90 | Boxmoor Trout Lake | Bretts Farm Lake | Perch | 140 | 50 | REQ |
| 23-Mar-90 | Boxmoor Trout Lake | North Met Pit | Pike | 1 | 12 | REQ |
| 23-Mar-90 | Boxmoor Trout Lake | Old R.Lee LVRPA | Roach | 12 | 12 | REI |
| 27-Mar-90 | Norland Lake Surrey | Sheepwalk Shepperton | Carp | 6 | 42 | REQ |
| 27-Mar-90 | Norland Lake Surrey | Sheepwalk Shepperton | Perch | 2 | 1 | REQ |
| 27-Mar-90 | Norland Lake Surrey | Sheepwalk Shepperton | Pike | 40 | 120 | REQ |
| 27-Mar-90 | Norland Lake Surrey | Sheepwalk Shepperton | Bream | 7 | 25 | REQ |
| 27-Mar-90 | Norland Lake Surrey | Sheepwalk Shepperton | Tench | 35 | 50 | REQ |
| 28-Mar-90 | R.Darent Eynsford | R.Darent Brooklands | Mixed | 200 | 25 | REI |
| 30-Mar-90 | Trent Park Lake | R.Lee Navigation | Pike | 100 | 75 | REI |

### Summary

| | Tot.Wt(kg) | Tot.No. |
|---|---|---|
| REQ | 8224 | 99694 |
| RES | 0 | 0 |
| REI | 1757 | 28866 |
| GRO | 23 | 478 |
| ENH | 426 | 4484 |
| TOTAL | 10431 | 133522 |

**APPENDIX 4 FISH MORTALITIES**

**1. Thames West**

| Date | Location | Species | Number | Wt(kg) | Cause |
|---|---|---|---|---|---|
| 1-Apr-89 | Field Barn Pond,Drifield | Rainbow trout | 40 | 20 | Unknown,poss. D.O. sag due to bloom |
| 3-Apr-89 | Thorp Mandeville Court | Brown trout | 40 | 40 | Unknown |
| 3-May-89 | R.Thames at Sunbury | Stickleback | 200 | 0.2 | Stranded |
| 13-May-89 | Maiden Erleigh Lake | Roach | 200 | 4 | Unknown |
| 13-May-89 | Oakhanger Stream | Stone loach | 1000 | 1 | Unknown |
| 15-May-89 | Leisure Sport Lk. Yateley | Carp | 6 | 24 | Unknown |
| 15-May-89 | Shill Brook-Black Bourton | Brown trout | 100 | 25 | Unknown |
| 17-May-89 | Lake at Wyck, Hants | Rainbow trout | 27 | 10 | Low dissolved oxygen |
| 25-May-89 | Oxford Canal,Lucy's | Mixed | 200 | 10 | Low d.o.(<5%)-cause unknown |
| 26-May-89 | Random lake,Bourton-o-t-w | Carp | 1100 | 550 | Disease? V.heavy 2° infection |
| 26-May-89 | Aldershot Park | Roach | 100 | 5 | Low d.o. following storm |
| 26-May-89 | Waterloo pond, E.Horsley | Mixed | 200 | 10 | Low d.o. following storm |
| 27-May-89 | Basingstoke Canal, F.boro | Mixed | 700 | 100 | Low d.o. following storm run-off |
| 30-May-89 | Lloyds Lake,Kennington | Mixed | 100 | 20 | Algal die off |
| 30-May-89 | Bourne North, West End | Roach | 8 | 1.6 | Pollutant as yet unknown |
| 30-May-89 | Bourne North, West End | Brown trout | 45 | 5 | Pollutant as yet unknown |
| 30-May-89 | Bourne North, West End | Bullhead | 100 | 0.5 | Pollutant as yet unknown |
| 8-Jun-89 | Broughton Castle Moat | Mixed | 200 | 10 | Algal deoxygenation |
| 21-Jun-89 | New Pond, Pirbright | Pike | 10 | 20 | Ectoparasites |
| 21-Jun-89 | New Pond, Pirbright | Carp | 10 | 70 | Ectoparasites |
| 27-Jun-89 | Rousham House pond | Orfe | 35 | 25 | Unknown, low d.o. |
| 27-Jun-89 | Letcombe Brook, Wantage | Brown trout | 20 | 5 | Pollution incident, unknown |
| 30-Jun-89 | K/A Canal at Kintbury | Roach | 150 | 15 | Unknown |
| 1-Jul-89 | R.Blackwater, Camberley | Mixed | 400 | 40 | Low d.o. |
| 2-Jul-89 | K/A Canal at Thatcham | Roach | 200 | 20 | Unknown |
| 2-Jul-89 | K/A Canal at Thatcham | Tench | 50 | 75 | Unknown |
| 2-Jul-89 | Woodcote pond | Carp | 30 | 10 | Low d.o. - high temp, algal bloom |
| 8-Jul-89 | R.Ray, Wilts. 7 Bridges | Mixed | 20 | 4 | Run-off following storm |
| 9-Jul-89 | Oxford canal, Duke's Lock | Mixed | 2000 | 350 | Unknown (storm dis, ex.Kidlington) |
| 13-Jul-89 | California Brk, Aylesbury | Mixed | 1300 | 40 | Caustic soda from brewery yard |
| 14-Jul-89 | Stratton Pond, Swindon | Tench | 50 | 10 | Low d.o. |
| 22-Jul-89 | Queensway Pond, Caversham | Roach | 200 | 35 | Low d.o. |
| 24-Jul-89 | Bader Way, Wokingham | Bream | 500 | 125 | Low d.o. |
| 24-Jul-89 | Bader Way, Wokingham | Roach | 500 | 75 | Low d.o. |
| 27-Jul-89 | Coate Water | Bream | 20 | 10 | Keepnet retention - hot weather |
| 1-Aug-89 | Barne's Lake, Standlake | Rainbow trout | 30 | 40 | Algal bloom |
| 2-Aug-89 | New Chapel Elec, Fairford | Trout | 60 | 35 | Possibly high temp.-stratification |
| 2-Aug-89 | Felix Farm Lake, Binfield | Rainbow trout | 750 | 350 | Low d.o. |
| 4-Aug-89 | Southcourt Brook | Stickleback | 1000 | 0 | Pollution incident |
| 11-Aug-89 | Moat at Loseley House | Crucian carp | 100 | 10 | Low d.o. |
| 11-Aug-89 | Horley Mill Trout Farm | Rainbow trout | 1500 | 15 | Whitespot |
| 24-Aug-89 | Old River Ray,Oddington | Mixed | 25 | 1 | Excessive weed growth, low flows |
| 24-Aug-89 | Bear Brk & R.Thame | Mixed | 1500 | 300 | Unknown |
| 24-Aug-89 | R.Cole, d/s Sevenhampton | Mixed | 150 | 70 | Low flows and probably slurry |
| 26-Aug-89 | Flurry Pond White hill | Carp | 12 | 12 | Lack of water |
| 28-Aug-89 | Weston Fishery, Albury | Rainbow trout | 10 | 10 | Unknown |
| 28-Aug-89 | Coate Water | Bream | 10 | 12 | Unknown |
| 1-Sep-89 | Alfold Village Pond | Crucian carp | 25 | 3 | Lack of Water |
| 16-Sep-89 | Broadwater Lake | Carp | 100 | 500 | Unknown |
| 18-Sep-89 | Horley Mill Trout Farm | Rainbow trout | 5000 | 250 | Unknown |
| 23-Sep-89 | Bader Way Lk, Woodley | Roach | 100 | 300 | Low d.o. due to starch pollution |
| 25-Sep-89 | Cove Pit at Theale | Carp | 50 | 25 | Low d.o. |
| 28-Sep-89 | R.Wey at Alton | Minnow | 100 | 0.2 | Concrete washings |
| 29-Sep-89 | Frimley Stream, Frimley | Mixed | 15 | 0.5 | Unknown |
| 1-Nov-89 | Tanner's Pool,Alkerton | Carp | 75 | 35 | Prob. low D.O. from algae die off. |
| 1-Dec-89 | Berry Hill Taplow | Carp | 15 | 120 | Low D.O. Paper mill effluent |
| 5-Jan-90 | Englemere Pond, Ascot | Common carp | 300 | 20 | Low pH (4.5) |
| 6-Mar-90 | Grants Bourne & S.Bourne | Mixed | 15000 | 1000 | Wood Preservative(Lindane & TBTO) |
| 15-Mar-90 | Chalvey Stream | Mixed | 8000 | 130 | Perfumed Detergent Pollution |
| | Total Weight (kg) 5004 | | Total No. 43788 | | |

## 2. Thames East

| Date | Location | Species | Number | Wt(kg) | Cause |
|---|---|---|---|---|---|
| 14-Apr-89 | R.Bulbourne @ Berkhamsted | Bullheads | 30 | 1 | Died 3 days prior to insp. Unknown. |
| 11-May-89 | Todd Brook @ Harlow | Minor | 250 | 8 | Pesticide suspected |
| 17-May-89 | Boxers Lake, Enfield | Carp & Roach | 200 | 34 | Sanguinicola via stress/temperature |
| 17-May-89 | R.Roding @ Gang Bridge | Sea trout | 30 | 1 | Stocking mortalities. |
| 25-May-89 | Eltham Palace Moat | Roach & Carp | 5000 | 200 | Low DO,eutrophic,algal bloom. |
| 25-May-89 | Stubbs Lane, Broxbourne | Koi | 10 | 4 | Low DO's & algal bloom. |
| 25-May-89 | Hogsmill, Kingston | Mixed | 500 | 25 | Hogsmill STW failure. |
| 25-May-89 | Dukes River, Feltham | Roach | 40 | 2 | Low DO's, algal bloom & heavy rain |
| 26-May-89 | Dukes River, Mogden | Roach | 10 | 1 | Unknown |
| 26-May-89 | Trib of Hallingbury Brook | Perch | 15 | 1 | Cattle waste runoff. |
| 27-May-89 | Hampst'd Hth Bathing Pond | Bream | 30 | 14 | Algal bloom + temperature. |
| 29-May-89 | GUC @ Osterley Park | Roach & Bream | 200 | 30 | Low DO,algal bloom & temperature. |
| 31-May-89 | R.Crane @ Cranford Way | Roach | 3 | 0 | Unknown |
| 1-Jun-89 | British Gas Pond, Fulham | Carp | 100 | 30 | Low DO, algal bloom, temperature. |
| 1-Jun-89 | GUC Uxbridge to Harefield | Chub | 9 | 10 | Unknown |
| 1-Jun-89 | Dukes River, Mogden | Roach | 10 | 1 | Unknown |
| 2-Jun-89 | Fairlands Valley Lake | Tench | 500 | 25 | Argulus,hot weather & algal blooms |
| 2-Jun-89 | Sundridge Lks Infill Area | Carp | 3 | 1 | Unknown,infilling suspected. |
| 2-Jun-89 | Fairlands Valley Lake | Roach & Perch | 1000 | 58 | Argulus,hot weather & algal blooms |
| 4-Jun-89 | Potomac Pond, Gunnersbury | Roach & Bream | 300 | 10 | Heavy overstocking + algal bloom |
| 5-Jun-89 | R.Wandle @ Watermeads | Roach | 50 | 3 | Urban storm runoff. |
| 8-Jun-89 | Cannicaro Pk., Wimbledon | Rudd | 30 | 5 | Low DO, algal bloom + temperature |
| 13-Jun-89 | R.Roding @ Woodford | Mixed | 200 | 1 | Unknown discharge |
| 14-Jun-89 | Upper R.Roding | Mixed | 250 | 30 | 1500 litres Dithane Fungicide. |
| 14-Jun-89 | GUC @ Park Royal | Roach | 30 | 2 | Unknown |
| 23-Jun-89 | GUC @ Berkhamsted | Roach | 50 | 3 | Unknown, Temperatures suspected |
| 26-Jun-89 | Hampstead Hth, Swim Pond | Roach | 50 | 5 | Low DO's & heavy algal bloom. |
| 26-Jun-89 | GUC @ Hayes | Roach | 10 | 1 | Low DO's + Angling Pressure |
| 28-Jun-89 | Grovelands Park, Enfield | Roach | 600 | 60 | Low DO's & Storm runoff. |
| 29-Jun-89 | Stanmore Temple Pond | Roach | 50 | 10 | Unknown. |
| 30-Jun-89 | Goffs Park Lake, Crawley | Mixed | 300 | 60 | Very warm,low DO's & a/bloom crash. |
| 1-Jul-89 | R.Mole @ Sidlow | Roach & Dace | 100 | 5 | Surface water storm runoff. |
| 2-Jul-89 | Gill Manor Pond,Rusper | Orfe | 30 | 30 | Low DO's + High temps. |
| 4-Jul-89 | Fulham Gas Works pond | Carp | 30 | 5 | Very warm,heavy Lemna cover,low DO. |
| 5-Jul-89 | R.Darent @ Sundridge | Brown trout | 3 | 2 | Unknown. |
| 7-Jul-89 | R.Mole @ Horley | Roach | 30 | 3 | Urban storm runoff - Low DO's. |
| 8-Jul-89 | R.Thames,Putney/Chelsea | Mixed | 10000 | 10 | Low DO's,very warm + heavy rain. |
| 9-Jul-89 | Sth.Norwood Lake | Mixed | 50 | 5 | Low DO's + very warm. |
| 10-Jul-89 | R.Thames,Barnes-Wapping | Mixed | 400 | 100 | Low DO,continuing mort from 8-7-89 |
| 10-Jul-89 | R.Ver @ Redbournebury | Brown trout | 5 | 1 | Unknown. |
| 11-Jul-89 | R.Thames @ Wandsworth | Dace & Perch | 280 | 42 | Low DO, continuing mort from 8-7-89 |
| 11-Jul-89 | R.Roding @ Kelvedon Hall | Pike & Tench | 27 | 39 | Low DO's + algal bloom crash. |
| 11-Jul-89 | Tanners Brook,R.Mole Trib | Dace & Chub | 60 | 9 | Probable slurry discharge. |
| 12-Jul-89 | R.Chess @ Sarratt Mill | Trout/Grayling | 100 | 25 | Vandalism to mill sluice |
| 12-Jul-89 | R.Chess @ Sarratt | Brown trout | 100 | 15 | Silt caused by sluice vandalism |
| 12-Jul-89 | R.Colne @ Colney Heath | Perch | 5 | 1 | Unknown. |
| 12-Jul-89 | R.Colne @ Colne Heath | Crayfish | 30 | 3 | Unknown |
| 12-Jul-89 | Long Pond Totteridge | Perch | 10 | 1 | High temperature + Low DO's. |
| 14-Jul-89 | Three Kings Pond,Mitcham | Roach & Carp | 500 | 25 | Heavy Argulus infection, very warm. |
| 15-Jul-89 | Gallions Pond,Thamesmead | Tench | 100 | 25 | Unknown.Bankside spraying suspected |
| 21-Jul-89 | R.Misbourne @ Amersham | Brown trout | 113 | 30 | Low water level - drought condition |
| 26-Jul-89 | Lee F/Channel & New Cut | Roach | 200 | 15 | Storm runoff/high temperatures |
| 27-Jul-89 | R.Lee Navigation | Mixed | 150 | 12 | Low DO's & high temperatures |
| 29-Jul-89 | Wandsworth Com Stock Pond | Carp & Roach | 30 | 8 | High Temps/Low DO's |
| 1-Aug-89 | Grovelands Lake, Enfield | Perch | 100 | 6 | Low DO's/Storm runoff |
| 1-Aug-89 | Grovelands Lake, Enfield | Roach | 400 | 24 | Low DO's/Storm runoff |
| 1-Aug-89 | Wanstead Park Lake | Tench | 50 | 45 | Decaying algal bloom/Low DO's |
| 2-Aug-89 | Sth.Norwood Lake | Roach | 500 | 40 | High Temps/Parasite Load - Cont's |
| 2-Aug-89 | Darenth L/Sport Lake | Eels & Carp | 20 | 15 | Probable angling mortalities |
| 3-Aug-89 | Surrey Docks | Roach | 100 | 6 | Probable saline intrusion |
| 3-Aug-89 | Private Lake, Erith | Goldfish | 125 | 15 | Unknown |
| 4-Aug-89 | Epping Forest Ponds | Perch | 50 | 3 | Low DO's temperature/& algal bloom |
| 16-Aug-89 | Dorking Mill Pond | Roach | 15 | 3 | Unknown but herbicide suspected |
| 23-Aug-89 | Pond @ Brickendon | Carp | 2 | 1 | Algal Bloom |
| 26-Aug-89 | R.Stort | Mixed | 150 | 0 | Urban runoff |

## Thames East (cont)

| Date | Location | Species | Number | Wt(kg) | Cause |
|---|---|---|---|---|---|
| 29-Aug-89 | Nutfield Priory Lake | Carp | 50 | 25 | Disease suspected,health exam taken |
| 7-Sep-89 | Cripsey Brook | Chub & Dace | 250 | 10 | Raw Sewage discharge |
| 9-Sep-89 | R.Darent @ Dartford | Eel | 10 | 3 | Unknown |
| 10-Sep-89 | R.Roding/Brookhouse Brook | Mixed | 32030 | 1442 | Farm Slurry Discharge |
| 18-Sep-89 | R.Darent, Sth.Darenth | Mixed | 50 | 3 | Unknown, possibly storm runoff. |
| 20-Sep-89 | Private Pond @ Westcott | Roach | 40 | 8 | Disease suspected - invest's cont.. |
| 20-Sep-89 | Stanwell Moor ditch | Minor Species | 200 | 3 | Discharge via Firefighting |
| 22-Sep-89 | Greenhill Park Lake | Crucian carp | 130 | 13 | Unknown |
| 23-Sep-89 | Hogsmill Stream, Ewell | Stickleback | 50 | 0 | Vehicle in stream. Fluids escaped. |
| 24-Sep-89 | Gt.Hallingbury Brook | Chub | 15 | 14 | Poor quality STW effluent. |
| 27-Sep-89 | Gt.Hallingbury Brook | Mixed | 150 | 1 | Poor quality STW effluent. |
| 27-Sep-89 | Gt.Hallingbury Brook | Roach | 15 | 3 | Poor quality STW effluent |
| 6-Oct-89 | Sundon Park Brook | Minor Species | 100 | 1 | Unknown |
| 17-Oct-89 | Cobbins Brook, Honeylane | Minor | 200 | 1 | Honeylane pumping station fault |
| 20-Oct-89 | R.Darent,Brooklands House | Perch & Bream | 20 | 10 | Stranded by very low flows |
| 30-Nov-89 | Morley Hall Lake, Ware | Roach | 200 | 5 | Unknown |
| 8-Dec-89 | R.Chess @ Chesham | Brown Trout | 7 | 5 | Cessation of river flow |
| 15-Dec-89 | Fanhams Hall, R.Bourne | Carp | 9 | 15 | Low DO's via decomposing vegitation |
| 5-Jan-90 | R.Ash Shepperton | Perch | 250 | 3 | Mechanical damage via pump. |
| 8-Mar-90 | R.Darent,Bradbourne West | Bream | 3 | 1 | Unknown - Investigations continue. |
| 15-Mar-90 | Broadwater Lake Hatfield | Roach | 20 | 5 | Unknown |
| 15-Mar-90 | Broadwater Lake Hatfield | Bream | 20 | 5 | Unknown |
| 17-Mar-90 | R.Lee @ Hackney | Perch | 20 | 6 | Sewage Pollution. |

Total Weight (kg) 2787 Total No. 57564

NRA

Thames Region

Severn-Trent Water Authority

Anglian Water Authority

Wessex Water Authority

Southern Water Authority

Yantlet Line

## BIOMASS OF MAJOR FISH SPECIES GREATER THAN 10 CM IN LENGTH

- < 10 g/m²
- 10–15 g/m²
- 15–20 g/m²
- > 20 g/m²
- Non E.E.C. designated watercourses
- E.E.C. designated fisheries yet to be surveyed

## FISHERY QUALITY SURVEYS

## 1984–1989

SCALE 1:625,00 OR ABOUT TEN MILES TO ONE INCH

10 0 10 20 30kms

10 0 10miles



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