Biodiversity Strategy and Action Plan for the Environment Agency (Thames Region)

ENVIRONMENT AGENCY

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BIODIVERSITY STRATEGY AND ACTION PLAN FOR THE ENVIRONMENT AGENCY (THAMES REGION)

VERSION 1
DECEMBER 2000

Front Cover: *Fritillaries at North Meadow Special Area of Conservation near Cricklade.*

CONTENTS

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INTRODUCTION

- This Biodiversity Strategy and Action Plan is intended to be a working document for Environment Agency staff in Thames Region. It is based on the best available information obtained from various sources, including the Institute of Terrestrial Ecology, The Wildlife Trusts, Biodiversity Contact Points, Local Record Centres and the Environment Agency's own databases.

- The purpose of this document is to provide internal staff with guidance on the distribution and priorities for biodiversity action on a LEAP by LEAP basis. It is not intended that every relevant action for every species and habitat present in a given LEAP, should appear in that LEAP document. It will still be the responsibility of the Area Fisheries and Ecology staff to decide which actions are most relevant and achievable at a given point in time, using this action plan to help them focus on Agency priorities.

- Species which formerly occurred in the Region, but which have not been recorded for many years are not included in this action plan, unless there are specific UK BAP actions to reintroduce them to sites in the Region. The species excluded on this basis include Shining-Ram's Horn Snail, Slender Stonewort and Allis Shad. If previously excluded species are rediscovered in the Region or new UK BAP actions are drawn up to reintroduce them, then this Action Plan will be updated accordingly.

- This Action Plan will be updated periodically to take account of any new distribution records and new or modified actions in the UK BAP. Table 3 includes the date of the latest version of each Action Plan and it is essential that users of this document ensure that they keep the contents up to date by replacing superseded action plans as soon as new versions are sent out from the Regional Conservation office.

- This document was produced by Alastair Driver (Regional Conservation Manager), Suzanne Marshall and Jane Burnett (Regional Biodiversity Co-ordinators) with valuable assistance from other Area and Regional Conservation, Biology and Fisheries staff and the various Contact Points and national experts inside and outside the Agency.

- Any new records for species included in this plan should be forwarded to Alastair Driver at the earliest opportunity. Please provide the six figure OS National Grid Reference and the date and source of the record as a minimum.

CONTEXT

> "Biodiversity is a key test to sustainability. Biological Diversity: the variability among living organisms from all sources including, inter-alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." (Article 2 of the Convention on Biological Diversity.)

The Environment Agency (Thames Region) Biodiversity Strategy and Action Plan was prompted by the following initiatives:

1. The Convention on Biological Diversity (CBD) which was signed by the UK in June 1992 and requires signatories to:

   - promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species;
   - develop or maintain legislation for the protection of threatened species;
   - promote understanding of issues involved in conserving biological diversity;
   - establish protected areas and develop guidelines for their selection and management;
   - promote relevant research;
   - monitor important components of biological diversity.

2. The Pan-European Biological and Landscape Diversity Strategy which is a European response to support implementation of the Convention on Biological Diversity. The Pan-European Biological and Landscape Diversity Strategy's vision for the future is to achieve conservation and sustainable use of biological and landscape diversity for the whole continent of Europe within the next twenty years.

   Article 6A of the Convention requires each contracting party to develop national strategies for the conservation and sustainable use of biological diversity. The UK Government responded to this challenge by publishing "Biodiversity: The UK Action Plan," in 1994.

3. The Environment Act 1995, which places both general and specific duties on the Agency with regard to conservation. The term 'biodiversity' is included in the statutory Ministerial Guidance under Section 4 of the Environmental Protection Act 1995, which states that conserving biodiversity is an essential element of the Agency's contribution towards achieving sustainable development. Its meaning (the diversity and variety of wildlife and habitats that support it) is fully encompassed by the above definitions of conservation, particularly in the context of wildlife conservation. The Agency is therefore given its statutory remit to pursue biodiversity initiatives, such as those arising from the UK Biodiversity Action Plan.

4. An Action Plan for Conservation, (published by the Agency in January 1998), states that the principle aim of the EA Conservation function is to help enhance and restore degraded areas, for the benefit of current and future generations. One of the main objectives of the conservation function is described thus: To ensure we take a full part in implementing the UK Biodiversity Action Plan (UK BAP) by taking a lead in promoting the conservation of key water-related habitats and species.

5. The Local Environment Agency Plan (LEAP) process which is based on the identification of key issues affecting the catchment environment, and the careful prioritisation of specific actions to address those issues.

Biodiversity Priorities for the Thames Region

The Conservation function currently invests a significant proportion of its resources into research and development (R&D). The objective of this R&D programme is to support the business requirements of conservation, particularly relating to our main priorities, such as EU Birds and Habitats Directives and the UK BAP. It focuses in particular on evaluation methods, conservation criteria for appraising Agency authorisations, and management requirements for those habitats and species for which we are a lead partner in the UK BAP. Collaboration with other agencies (ie English Nature/RSPB/The Wildlife Trusts) is a key aspect of the programme.

Since the biggest impact will be enhancement or restoration of features, environmental success will be gauged by measures such as:

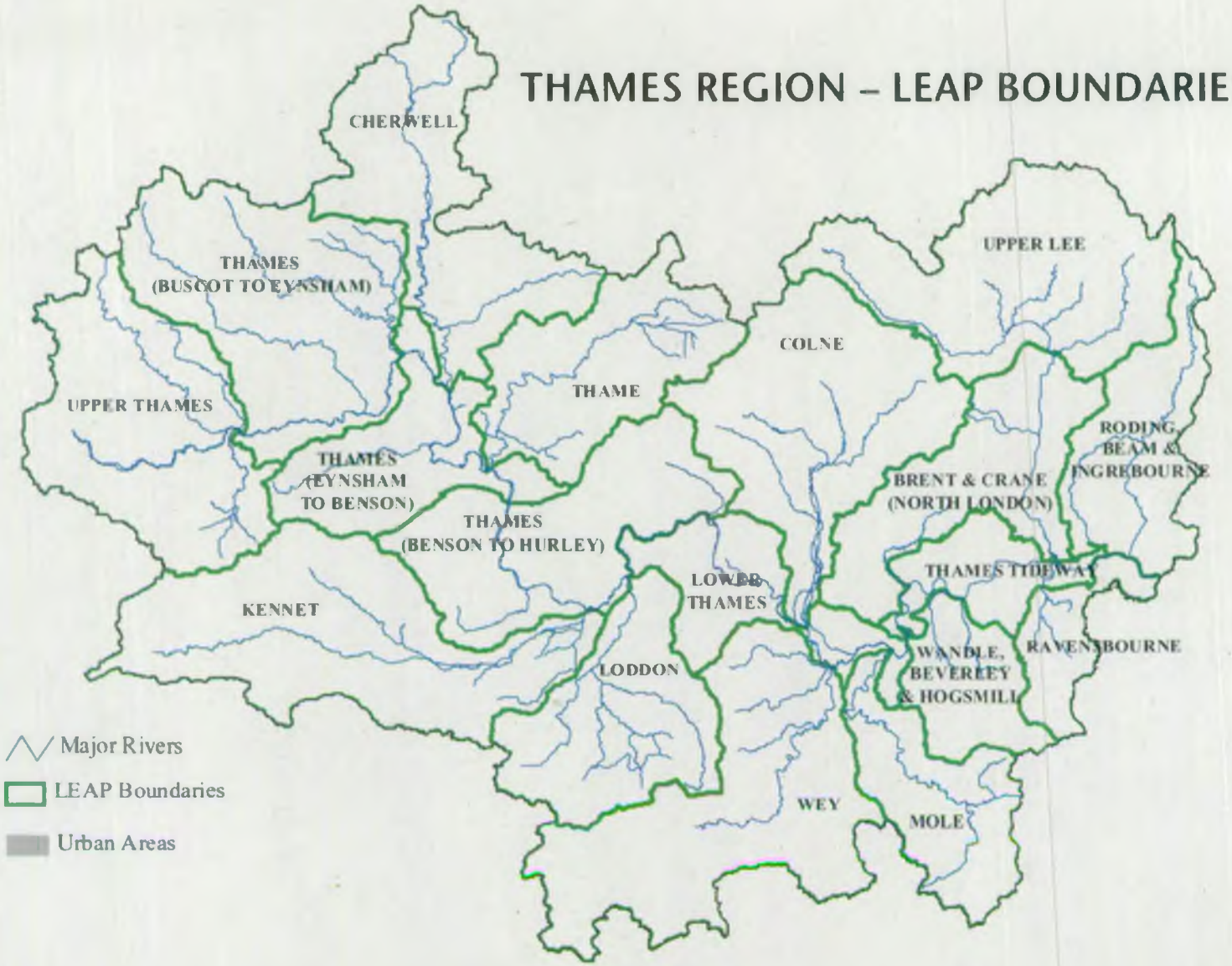
- river catchments inhabited by otters;
- area of reedbed, wetland, riverside buffer zone created or restored;
- increased populations of those BAP species for which we are lead partners;
- improved conservation value in chalk rivers.

Counties covered by EA (Thames Region) Local Environment Agency Plans (LEAPs)

The Environment Agency (Thames Region) LEAP boundaries covers all or part of the following counties: Greater London, Hertfordshire, Bedfordshire, Northamptonshire, Warwickshire, Gloucestershire, Oxfordshire, Buckinghamshire, Berkshire, Hampshire, Wiltshire, Surrey, Sussex, Kent, Essex. These counties have, or are in the process of producing Biodiversity Action Plans (BAPs). Please refer to page 132 for Local Biodiversity Action Plan groups in Thames Region with EA involvement.

The Thames region occupies 14.6% of the area of England and Wales. There are 18 LEAP catchments in the Thames region, as shown on the following LEAP map.

THAMES REGION – LEAP BOUNDARIES



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HABITAT STATEMENTS

1. INTRODUCTION

These Habitat Statements provide a context for the preparation of the Species and Habitat Action Plans. The Statements included here are for Rivers and Streams and for Canals and they are supplemented with some Regional statistics to provide a flavour of the habitat resource in each LEAP Area.

2. RIVERS & STREAMS

In their natural state, rivers are dynamic systems, continually modifying their form. However, in many cases their ability to rejuvenate and create new habitat has been reduced or arrested by physical modification, including flood defence structures and impoundments. Few rivers in the UK have not been physically modified by man, but such rivers still represent a very valuable resource. Erosion of banks has also been caused by canalisation and the removal of tree cover in historic times. Such activities have resulted in changes in the frequency and magnitude of flooding, altering the seasonal pattern of flows. In addition, flow regulation has altered patterns of sediment transport and nutrient exchange in river systems, and this can have detrimental effects on floodplain habitats that still retain some connection with the main stream.

The mosaic of features found in rivers and streams supports a diverse range of plants and animals. For example, riffles and pools each support distinctive aquatic species, and exposed sediments such as shingle beds and sand bars are important for a range of invertebrates, notably ground beetles, spiders and craneflies. Marginal and bankside vegetation support an array of associated animals. Rivers and streams often provide a wildlife corridor link between fragmented habitats in intensively farmed areas.

Within the Thames Region there are 8,583km of main and non-main river of which 3,796km are monitored for water quality purposes for the General Quality Assessment Programme (see Table 1 below).

Conservation Direction

Maintain and improve the quality, state and structure of all UK rivers and streams and their associated floodplains. Restore degraded rivers and streams taking account of water quality and quantity, structure and hydraulic connection with the floodplain.

Measures to be considered further include:

- Introduce Statutory Water Quality Objectives, especially for phosphates.
- Use Water Level Management Plans and water abstraction licensing procedures for the benefit of wildlife, particularly with respect to key sites.
- Implement integrated catchment management plans (LEAPs).
- Use existing measures, such as the Countryside Stewardship Waterside Landscape option, to support the appropriate management of rivers, streams and their associated habitats, in particular floodplains.
- Reduce acid emissions to reduce damage to rivers and streams from acid rain.

- Review the powers and duties of water management institutions to manage water for nature conservation objectives.

TABLE 1: EXTENT OF RIVER IN EACH LEAP AREA

LEAP	Main River (km)	Non Main River (km)	Total per LEAP
Thames - Buscot to Eynsham	439	281	720
Thame	410	197	607
Thames - Eynsham to Benson	265	151	416
Kennet	319	171	490
Upper Thames	325	292	617
Thames - Benson to Hurley	151	63	214
Cherwell	476	259	735
Lower Thames	210	90	300
Thames Tideway	574	10	584
Wey	318	398	716
Ravensbourne	88	18	106
Loddon	306	155	461
Wandle & Beverley	70	65	135
Mole	229	195	424
Roding/Beam/Ingrebourne	223	151	374
Colne	363	137	500
Upper Lee	594	75	669
North London	396	119	515
Totals	**5,756**	**2,827**	**8,583**

3. CANALS

Construction of canals in the UK took place predominantly between 1750 and 1830, although some were built much earlier and others later. The main concentration of canal construction was in the Midlands linking this area to London. Outlying areas often only had local canals. Nationally British Waterways currently owns 3,237km (including some river navigation) of canals, representing 52 % of the canal network in Britain.

Canals can be important for wildlife. Those which no longer carry heavy boat traffic often support highly diverse assemblages of plants and animals and may support nationally scarce species such as the Floating Water-plantain *Luronium natans* and Grass-wrack Pondweed *Potamogen compressus*. The wetland habitats are inter-related with the margins, towpath and hedge or other boundary features which also contribute shelter and emergence sites for other aquatic animals. Canal tunnels may provide excellent roosting and breeding sites for bats. The associated habitats are often rich in species, some of which are relicts from formerly widespread habitats such as unimproved grassland, marsh and carr.

There are 300km of canals in the Thames Region, (see Table 2 below).

Conservation Direction

Maintain the existing environmental quality of all canals (remaindered, derelict and navigable) in the UK and enhance the wildlife interest of the habitats associated with key canals through upgrading and improving water quantity, water quality and the restoration of bank-side features.

Measures to be considered further include:

- Implement Statutory Water Quality Objectives.
- Carry out Environmental Assessments for maintenance, management and restoration work, and development affecting canals and their associated habitats.
- Using existing measures, such as Habitats Scheme, to support the appropriate management of associated habitats.
- Encourage the effective management of all canals, using water level management plans and water abstraction licensing procedures for the benefit of wildlife, particularly in respect to key sites.

TABLE 2: EXTENT OF CANALS IN EACH LEAP AREA

LEAP	Canal (km)	Total per LEAP
Thames - Buscot to Eynsham	0	720
Thame	15	607
Thames - Eynsham to Benson	11	416
Kennet	43	490
Upper Thames	0	617
Thames - Benson to Hurley	0	214
Cherwell	49	735
Lower Thames	2	300
Thames Tideway	28	584
Wey	27	716
Ravensbourne	0	106
Loddon	41	461
Wandle & Beverley	0	135
Mole	0	424
Roding/Beam/Ingrebourne	0	374
Colne	52	500
Upper Lee	0	669
North London	32	515
Totals	**300**	**8,583**

BAP CATEGORIES

Table 3 on pages 13-18 lists the biodiversity priority species and habitats which occur or have recently occurred in the Thames region. The BAP category definitions used in column 1 are as follows:

1. Species/habitats for which the Agency is Contact Point (and in some cases Lead Partner).

2. Species/habitats for which the Agency is Lead Partner only.

3. Species/habitats for which there are specific actions against the Agency, but for which we are not Contact Point/Lead Partner.

4. Species/habitats for which the Agency has no specific actions but may be involved with their conservation.

5. Species not on the UK biodiversity priority list which are considered by the Environment Agency (Thames Region) and its partners to be of local biodiversity importance and for which the Agency should play a key role.

The main chapters in this document are based on the above categories.

TABLE 3 : SPECIES AND HABITATS INCLUDED IN THIS ACTION PLAN

BAP Category	Source Documents	Habitat	Latin Name	Agency National Co-ordinator	Plan based on records since	Last update of this action plan
1	Biod Stg Group Report Vol 2. P238 1999 Sap Progress Report	Chalk River	--	Robin Crawshaw (Southern)	--	Dec 2000
1	Biod Group Tranche 2 Vol II P.31 1999 Sap Progress Report	Eutrophic Standing Water	--	Simon Leaf (Thames)	--	Dec 2000
1	Biod Group Tranche 2 Vol V P.129	Coastal Salt Marsh	--	Brian Empson (Head Office)	--	Dec 2000
1&2	Biod Stg Group Report Vol 2 P.84 1999 SAP Progress Report	Otter	*Lutra lutra*	Teg Jones (EA Wales)	1995	Dec 2000
1	Biod Stg Group Report Vol 2 P.82 1999 SAP Progress Report	Water Vole	*Arvicola terrestris*	Alastair Driver (Thames)	1995	Dec 2000
1	Biod Stg Group Report Vol 2 P.157 1999 SAP Progress Report	White-clawed Crayfish	*Austropotamobius pallipes*	Julie Bywater (Thames)	1995	Dec 2000
1	Biod Group Tranche 2 Vol I P.49 1999 SAP Progress Report	Marsh Warbler	*Acrocephalus palustris*	Rob Pilcher (Southern)	1990	Dec 2000
1&2	Biod Stg Group Report Vol 2 P.156 1999 SAP Progress Report	Little Whorlpool Ram's Horn Snail	*Anisus vorticulus*	Phil Griffiths (Southern)	1965	Dec 2000
1&2	Biod Stg Group Report Vol 2 P.164 1999 SAP Progress Report	Glutinous Snail	*Myxas glutinasa*	John Steel (Thames)	1990	Dec 2000
1&2	Biod Stg Group Report Vol 2 P.167 1999 SAP Progress Report	Depressed River Mussel	*Pseudanodonta complanata*	Catrin Davies (EA Wales)	1995	Dec 2000
1&2	Biod Stg Group Report Vol 2 P.166 1999 SAP Progress Report	Fine-lined Pea Mussel	*Pisidium tenuilineatum*	John Murray-Bligh (Thames)	1995	Dec 2000
1	Biod Group Tranche 2 Vol IV P.437 1999 SAP Progress Report	Freshwater Bryozoan	*Lophopus crystallinus*	Andrea Shaftoe (North East)	1960	Dec 2000
1	Biod Group Tranche 2 Vol III P.319 1999 SAP Progress Report	Great Tassel Stonewort	*Tolypella prolifera*	Deborah Dunsford (South West)	1980	Dec 2000

BAP Category	Source Documents	Habitat	Latin Name	Agency National Co-ordinator	Plan based on records since	Last update of this action plan
1	Biod Group Tranche 2 Vol III P.315 1999 SAP Progress Report	Tassel Stonewort	*Tolypella intricata*	Deborah Dunsford (South West)	1980	Dec 2000
1	Biod Stg Group Report Vol 2 P.132 1999 SAP Progress Report	Southern Damselfly	*Coenagrion mercuriale*	Tim Sykes (Southern)	1990	Dec 2000
2	Biod Stg Group Report Vol 2 P.117 1999 SAP Progress Report	Twaite Shad	*Alosa fallax*	Miran Aprahamian (North West)	1990	Dec 2000
2	Biod Group Tranche 2 Vol I P.197 1999 SAP Progress Report	Cut Grass	*Leersia oryzoides*	Phil Griffiths (Southern)	1985	Dec 2000
2	Biod Group Tranche 2 Vol I P.241 1999 SAP Progress Report	Greater Water Parsnip	*Sium latifolium*	Peta Denham (Anglian)	1980	Dec 2000
3	Biod Group Tranche 2 Vol II P.69	Wet Woodland	--	Andrew Heaton (Midlands)	-	Dec 2000
3	Biod Stg Group Report Vol 2. P251	Grazing Marsh	--	Martin Fuller (North East)	-	Dec 2000
3	Biod Stg Group Report Vol 2. P230	Fens.	--	Wendy Brooks (Anglian)	-	Dec 2000
3	Biod Stg Group Report Vol 2. P241	Reedbeds	--	Judith Bennett (North West)	-	Dec 2000
3	Biod Group Tranche 2 Vol I p.43	Lesser Horseshoe Bat	*Rhinolophorus hipposideros*	Richard Green (South West)	1980	Dec 2000
3	Biod Stg Group Report Vol 2 P.89	Pipistrelle Bat	*Pispistrellus pipistrellus*	Richard Green (South West)	1980	Dec 2000
3	Biod Stg Group Report Vol 2 P.98	Bittern	*Botaurus stellaris*	Judith Bennett (North West)	1990	Dec 2000
3	Biod Group Tranche 2 Vol 1 P.65	Reed Bunting	*Emberiza schoeniclus*	Judith Bennett (North West)	1990	Dec 2000
3	Biod Stg Group Report Vol.2 P.112	Great Crested Newt	*Triturus cristatus*	Mark Elliot (Southern)	1980	Dec 2000
3	Biod Group Tranche 2 Vol 1V P.79	Spangled Diving Beetle	*Graphoderus zonatus*	Robin Crawshaw (Southern)	1980	Dec 2000
3	Biod Stg Group Report Vol 2 P.172	Desmoulins Whorl Snail	*Vertigo moulinsiana*	Daryl Buck (Thames)	1990	Dec 2000
3	Biod Group Tranche 2 Vol IV P.181	Cranefly	*Lipsothrix nervosa*	Cathy Beeching (Midlands)	1980	Dec 2000

BAP Category	Source Documents	Species	Latin Name	Agency National Co-ordinator	Plan based on records since	Last update of this action plan
3	Biod Stg Group Report Vol 2 P.181	Starfruit	*Damasonium alisma*	Chris Catling (Thames)	1990	Dec 2000
3	Biod Group Tranche 2 Vol 1 P.145	True Fox Sedge	*Carex vulpina*	Phil Griffiths (Southern)	1980	Dec 2000
3	Biod Stg Group Report Vol 2 P.175	Creeping Marshwort	*Apium repens*	Liz Hammock (Thames)	1990	Dec 2000
3	Biod Group Tranche 2 Vol 111 P. 297	Lesser Bearded Stonewort	*Chara curta*	Deborah Dunsford (South West)	1990	Dec 2000
3	Biod Group Tranche 2 Vol 111 P.171	Veilwort	*Pallavicinia lyellii*	Deborah Dunsford (South West)	1990	Dec 2000
3	Biod Group Tranche 2 Vol III P.25	Royal Bolete	*Boletus regius*	Fran Bayley (Thames)	1990	Dec 2000
3	Biod Group Tranche 2 Vol III P.37	Hydnoid fungi	*Hydnellum: concrescens scrobiculatum spongiospies Phellodon: confluens melaleucus tomentosus sarcodon: Imbricatus scabrosus*	Fran Bayley (Thames)	1990	Dec 2000
3	Biod Group Tranche 2 Vol 1 P.213	Pillwort	*Pilularia globulifera*	Chris Formaggia (Wales)	1980	Dec 2000
4	Biod Stg Group Report Vol 2 Long list P42 no plan	Thames Ram's Horn Snail	*Planorbis (Gyraulus) acronicus*		1990	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.22, no plan	Natterer's Bat	*Myotis nattereri*	Richard Green (South West)	1990	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.22, no plan	Daubenton's Bat	*Myotis daubentonii*	Richard Green (South West)	Not available	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.26 no plan	Nathusius' pipistrelle	*Pipistrellus nathusii*	Richard Green (South West)	Not available	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.26 no plan	Serotine Bat	*Eptesicus serotinus*	Richard Green (South West)	1990	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.26 no plan	Leisler's Bat	*Nyctalus leisleri*	Richard Green (South West)	Not available	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.26 no plan	Noctule Bat	*Nyctalus noctule*	Richard Green (South West)	1990	Dec 2000

BAP Category	Source Documents	Species	Latin Name	Agency National Co-ordinator	Plan based on records since	Last update of this action plan
4	Biod Stg Group Report Vol 2. Long list P.26 no plan	Cetti's Warbler	*Cettia cetti*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.26 no plan	Little Ringed Plover	*Charadrius dubius*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.30 no plan	Shelduck	*Tadorna tadorna*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.26 no plan	Snipe	*Gallinago gallinago*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.30 no plan	Redshank	*Tringa totanus*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.28 no plan	Curlew	*Numenius arquata*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2 Long list P.24 no plan	Gadwall	*Anas strepera*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2 Long list P.24 no plan	Pochard	*Aythya ferina*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2 Long list P.24 no plan	Tufted Duck	*Aythya fuligula*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2 Long list, no plan	Black Redstart	*Phoenicurus ochruros*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.32 no plan	Bullhead	*Cottus gobio*		1990	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.32 no plan	Brook Lamprey	*Lamptera planeri*		1990	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.32 no plan	Grayling	*Thymallus thymallus*		1990	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.32 no plan	Grass Snake	*Natrix natrix*		1990	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.32 no plan	Sea Lamprey	*Petromyzon marinus*		2000	Dec 2000
4	Biod Stg Group Report Vol 2. P110. Plan.	Sand Lizard	*Lacerta agilis*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2.Long list p.32 no plan	Common Goby	*Pomatoschistus microps*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2. Long list P.38 no plan	White-faced Dragonfly	*Leucorrhina dubia*		1990	Dec 2000
4	Biod Group Tranche 2 Vol 1. P.20 Proposed Plan	Marsh Fritillary	*Eurodryas aurina*	Andy Fraser (North West)	Not available	Dec 2000

BAP Category	Source Documents	Habitat	Latin Name	Agency National Co-ordinator	Plan based on records since	Last update of this action plan
4	Biod Stg Group Report Vol 2 Long list P.38 no plan	Scarce Chaser	*Libellula fulva*		1990	Dec 2000
4	Biod Group Tranche 2 Vol 1. P.20	Violet Click Beetle	*Limoniscus violaceus*		Not available	Dec 2000
4	Biod Group Tranche 2 Vol 1. P.28	Ground Beetle	*Armara stenua*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2. P36 Long list	Great Silver Diving Beetle	*Hydrophilus piceus*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2.P38 Long list	Scarce Emerald Damselfly	*Lestes dryas*		1990	Dec 2000
4	Biod Stg Group Report Vol 2 Long list P.42 no plan	Freshwater snail	*Lymnaea glabra*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2 Long list P.42 no plan	Freshwater snail	*Valvata macrostoma*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2 Long list P.40 no plan	Soldier fly	*Oxycera onalis*		1990	Dec 2000
4	Biod Stg Group Report Vol 2 Long list P.38 no plan	Snipe fly	*Atrichops crassipes*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2 Long list P.64 no plan	Pennyroyal	*Mentha pulegium*		1990	Dec 2000
4	Biod Stg Group Report Vol 2 P.207 Plan.	Orange-fruited Elm Lichen	*Caloplaca luteoalba*		1990	Dec 2000
4	Biod Stg Group Report Vol 2 P.217	Glaucous Beard Moss	*Didymodon glaucus*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2 Long list P.56 no plan	Cernous Bryum	*Bryum uliginosum*	Neil Guthrie (North West)	Not available	Dec 2000
4	Biod Stg Group Report Vol 2 Long list P.58 no plan	Millimetre Moss	*Micromitrium tenerum*		Not available	Dec 2000
4	Biod Group Tranche 2 Vol 1. P.29	Clustered Earth Moss	*Phemerum cohaerens*		Not available	Dec 2000
4	Biod Stg Group Report Vol 2 Long list, no plan P58	Spruce's Bristle Moss	*Orthotrichum sprucei*		Not available	Dec 2000
4	Biod Group Tranche 2 Vol III P. 283	Knot Hole Moss	*Zygodon forsteri*		Not available	Dec 2000
4	Biod Group Tranche 2 Vol I P. 29	Spreading-leaved Beardless Moss	*Wessia squarrosa*		Not available	Dec 2000
5	Red Data Book Vascular Plants in Ed 1.Nat. Scarce.	Fritillary	*Fritillaria meleagris*	Not applicable	1985	Dec 2000

BAP Category	Source Documents	Species	Latin Name	Agency Regional Co-ordinator	Plan based on records since	Last update of this action plan
5	EC Habitats Directive Annex 5 No L 206/47	Barbel	*Barbus barbus*	Not applicable	1985	Dec 2000
5		Wild Brown Trout	*Salmo trutta*	Not applicable	1985	Dec 2000
5	JNCC Nationally Scarce <100/10km2	Club-tailed Dragonfly	*Gomphus vulgatissimus*	Not applicable	1985	Dec 2000
5	UK Red Data Book Vascular Plants Ed 2	Loddon Lily	*Leucojum aestivum*	Not applicable	1985	Dec 2000
5	UK Red Data Book Vascular Plants Ed 2	Loddon Pondweed	*Potamogeton nodosus*	Not appicable	1985	Dec 2000
5	Red List Plants-IUCN Threat Criteria 1994	Black Poplar	*Populus nigra betulifolia*	Not applicable	1985	Dec 2000

TABLE 4: UK BAP PRIORITY SPECIES AND HABITATS – SUMMARY OF LEAP ACTION FOR CATEGORIES 1 AND 2

Category	Habitat/Species	Thames (Buscot to Eynsham) etc.	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
1	Chalk River			✓	✓		✓				✓								
1	Eutrophic Standing Water	✓				✓					✓		✓	✓	✓				
1	Coastal Salt Marsh									✓									
1&2	Otter	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓
1	Water Vole	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
1	White-clawed Crayfish	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓
1	Marsh Warbler				✓											✓			
1&2	Little Whirlpool Ram's Horn Snail																		
1&2	Glutinous Snail			✓							✓		✓						
1&2	Depressed River Mussel			✓			✓												
1&2	Fine-lined Pea Mussel		✓	✓	✓								✓						
1	Freshwater Bryozoan																		
1	Great Tassel Stonewort																		
1	Tassel Stonewort							✓											
1	Southern Damselfly			✓															
1	Twaite Shad									✓									
2	Cut Grass										✓								
2	Greater Water Parsnip			✓					✓										

☐ *Action Required (2000-2003)* ✓ *Actions So Far (1997-2000)*

TABLE 5: UK BAP PRIORITY SPECIES AND HABITATS – SUMMARY OF LEAP ACTION FOR CATEGORY 3's

Category	Habitat/Species	Thames (Buscot to Eynsham) etc.	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
3	Lesser Horseshoe Bat	✓				✓													
3	Pipistrelle Bat	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	Bittern	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
3	Reed Bunting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	Great Crested Newt	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	Spangled Diving Beetle										✓								
3	Desmoulin's Whorl Snail	✓		✓	✓								✓				✓	✓	
3	Cranefly								✓		✓		✓						
3	Starfruit						✓		✓		✓			✓	✓		✓		
3	True Fox Sedge							✓							✓				
3	Creeping Marshwort	✓		✓															
3	Lesser Bearded Stonewort					✓													
3	Veilwort										✓			✓		✓			
3	Royal Bolete								✓		✓								
3	Hydnoid Fungi						✓		✓		✓								
3	Pillwort									✓	✓		✓		✓				

☐ *Action Required (2000-2003)* ✓ *Actions So Far (1997-2000)*

TABLE 6: UK BAP PRIORITY SPECIES AND HABITATS – SUMMARY OF LEAP ACTION FOR CATEGORY 5's

Category	Habitat/Species	Thames (Buscot to Eynsham) etc.	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Chenwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
5	Fritillary	✓	✓	✓	✓	✓	✓	✓					✓		✓		✓		
5	Barbel	✓		✓	✓	✓			✓		✓		✓		✓	✓	✓	✓	✓
5	Wild Brown Trout	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	Club-tailed Dragonfly	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓						
5	Loddon Lily	✓		✓	✓		✓		✓				✓						
5	Loddon Pondweed						✓		✓				✓						
5	Black Poplar	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

☐ *Action Required (2000-2003)* ✓ *Actions So Far (1997-2000)*

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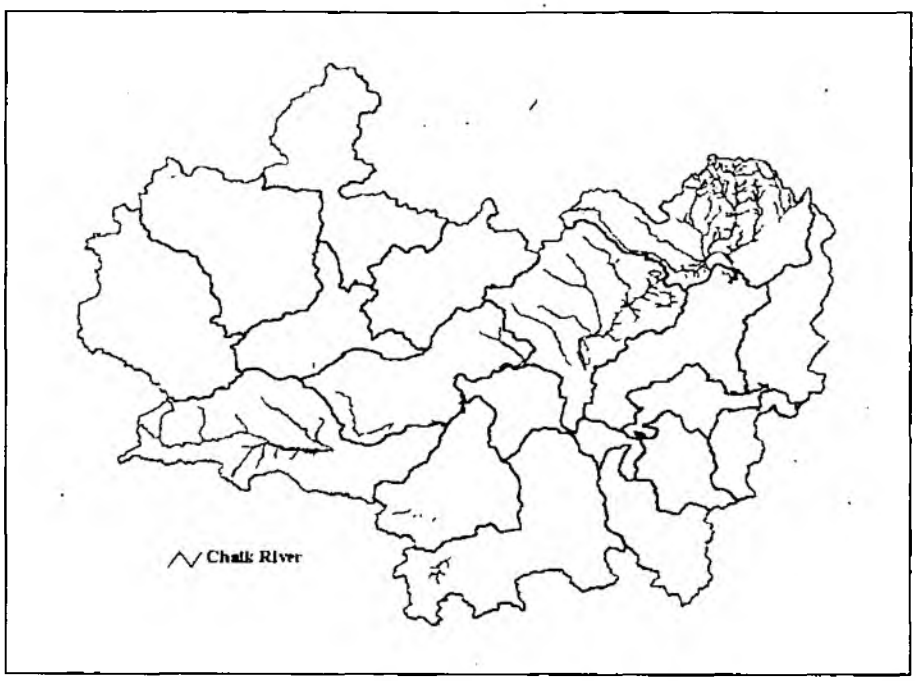
CATEGORY 1 & 2
HABITATS & SPECIES

CHALK RIVER



1. National Status

There are approximately 35 chalk rivers and major tributaries ranging from 20 to 90km in length. They are located in south and east England, from Frome in Dorset to the Hull in Humberside. They have low banks which support a range of water-loving plants. This plan considers action required for the river channel and banks but not for the whole catchment or floodplain. All chalk rivers are fed from groundwater aquifers, producing clear waters and a generally stable flow and temperature regime.

2. Factors Causing Loss or Decline

2.1 Abstraction.
2.2 Physical modification.
2.3 Pollution.
2.4 Catchment land use.
2.5 Fisheries management.

3. National Action Plan Objectives and Targets

3.1 Maintain the characteristic plants and animals of chalk rivers including their winterbourne stretches.
3.2 Restore water quality, flows and habitat diversity where they have deteriorated on rivers designated as SSSI.
3.3 Review the need and potential for restoration on the remaining chalk rivers, in consultation with local communities, and plan for these where cost effective.

4. Regional Status

4.1 There are 1,650km of chalk river in the Thames Region, they appear in eleven LEAPs mainly in the Upper Lee, Colne, Kennet, Loddon, Thames (Benson to Hurley) Pang & Wye.

5. Regional Priority Actions & Actions So Far

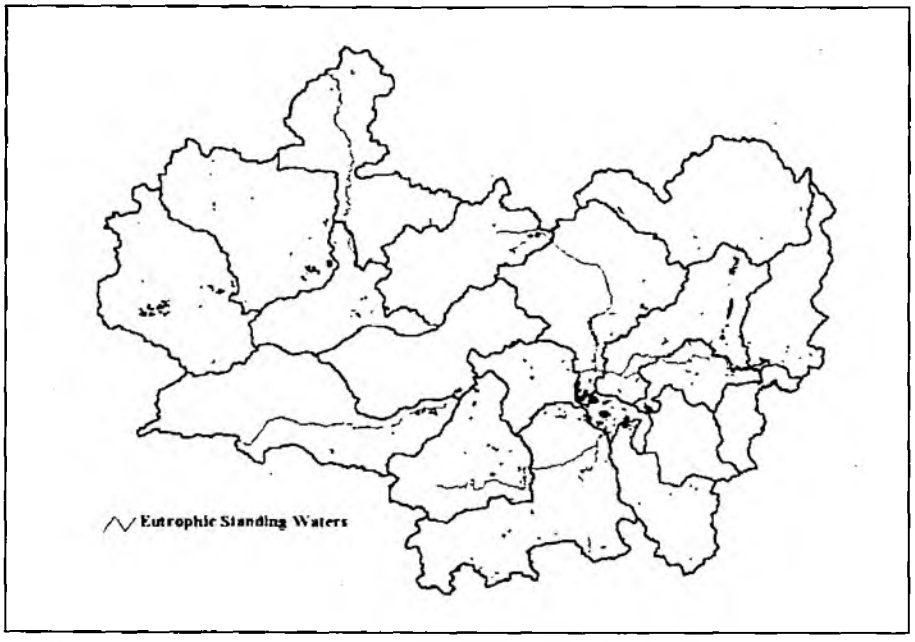
Chalk River Habitat Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.1	Review abstraction licenses which are suspected of causing damage to chalk rivers, through the RSA programme.			✓	✓		✓				✓								
5.1.3	Review licences for industrial/effluent discharge where these are found to damage the quality of chalk rivers.			✓	✓		✓												
5.2.3	Develop conservation strategies for chalk rivers.				✓														
5.2.4	Schemes to encourage sympathetic management of catchments and river corridors should be reviewed and extended where appropriate in order to reduce the impacts of agriculture and enhance wildlife habitats.			✓	✓		✓				✓		✓						
5.2.5	Water Quality on SSSI rivers should be assessed against proposed Special Ecosystem Statutory Water Quality Objectives targets and problem sources identified.				✓														
5.3.1	Promote advice on the best approaches to river corridor and catchment management.			✓	✓		✓												
5.5.1	Assess the nature conservation value and potential for restoration of chalk rivers other than those which are SSSI/SAC.			✓			✓												

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- River SSSI Conservation Strategies produced for the Kennet and Lambourn.
- Chiltern Chalk Streams Project co-funded.
- Channel narrowing carried out on many rivers including the Ver, Chess, Bulbourne, Gade, Mimram and Kennet.
- Discharge consents and abstraction licences reviewed in Kennet catchment for AMP3 and Habitats Directive.
- Upper Kennet Rehabilitation Project co-funded.

EUTROPHIC STANDING WATERS



1. National Status

1.1 Eutrophic standing waters are highly productive because plant nutrients are plentiful, either naturally or as a result of artificial enrichment. These water bodies are characterised by having dense, long-term populations of algae in mid-summer, often making the water green. This action plan covers natural and man made still waters such as lakes, reservoirs and gravel pits but it excludes small pools, field ponds and brackish waters.

1.2 Approximately 200 eutrophic standing waters are designated as Sites of Special Scientific Interest (SSSIs) in Britain and 32 have Area of Special Scientific Interest (ASSI) status in Northern Ireland.

2. Factors Causing Loss or Decline

2.1 A potential threat which may over-ride all the others is climate change. A substantial change in water supply and throughput would alter the character of water bodies and a rise in temperature would produce wide-ranging effects such as acceleration of plant growth.

2.2 Pollutants find their way into these waters not only from point sources, but also from diffuse sources.

2.3 Changes in land cover can release nutrients from the soil and these may enter water bodies, causing enrichment.

2.4 Water abstraction for potable supply, industry or irrigation, either directly from a standing water body or from surface feeders or aquifers, can depress water levels and increase water retention time and reduced flushing rate.

2.5 The introduction of fish, the removal of predators, and the manipulation of existing fish stocks for recreational fishing leads to the loss of natural fish populations and may affect plant and invertebrate communities.

2.6 Heavy stocking of bottom-feeding fish such as Common carp *Cyprinus carpio* can cause turbidity and accelerate the release of nutrients from sediments.

2.7 Use of standing waters for recreational and sporting purposes may create disturbance which affects bird populations.

2.8 Release of non-native plants and animals can be very damaging.

3. National Action Plan Objectives and Targets

3.1 It is proposed that eutrophic water bodies in the UK should be classified into three tiers distinguished on the grounds of naturalness, biodiversity and restoration potential. The exact criteria for these categories have yet to be agreed and the total number of sites falling into each tier confirmed.

3.2 Ensure the protection and continuation of favourable condition of all 'Tier 1' eutrophic standing waters.

3.3 By 2005 take action to restore to favourable condition (typical plant and animal communities present) 'Tier 2' eutrophic standing waters that have been damaged by human activity.

3.4 Ensure that no further deterioration occurs in the water quality and wildlife of the remaining 'Tier 3' eutrophic standing water resource.

4. Regional Status

4.1 Large waterbodies in the Thames Region, are mostly eutrophic and the key clusters of high conservation value are the Cotswold Water Park, South West London waterbodies, and the Lee Valley reservoirs.

5. Regional Priority Actions & Actions So Far

See overleaf.

5. Regional Priority Actions & Actions So Far

Eutrophic Standing Water Habitat Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.2	By 2005 establish site-specific plans to achieve appropriate water quality, water resource use, fishery management and biological status for all important (Tiers 1&2) eutrophic standing water bodies. Within these tiers, assign priorities to the sites according to threat, vulnerability, potential for restoration and nature conservation interest. Issues raised in England and Wales to be addressed principally through LEAPs.					✓													
5.2.1	By 2005 embark upon a nationwide programme of nutrient control, targeting sites in priority order. Aim to maintain the condition of all Tier 1 eutrophic standing waters and to improve by 2020 the condition of at least 50% of Tier 2 sites. Continue the programme beyond 2020, to complete coverage of all Tier 2 sites.																		
5.2.2	Prepare and where possible implement site management plans, taking special account of threats posed by pollution, water abstraction and recreational use.	✓					✓												
5.2.3	Maintain or introduce appropriate fishery management. Where appropriate, institute restorative measures such as phosphorus control, biomanipulation and species reintroduction.						✓				✓		✓	✓	✓				
5.2.4	Prepare and by 2010 implement catchment management plans for Tier 2 eutrophic standing waters which are not SSSIs or ASSIs.																		
5.2.8	Ensure that local planning mechanisms (eg. Local Authority Structure Plans) take account of the wildlife interest of all (Tiers 1, 2 and 3) eutrophic standing waters.																		
5.2.9	Contribute to the implementation of relevant priority species action plans for rare and declining species associated with eutrophic standing waters, in conjunction with the relevant species steering group.																		

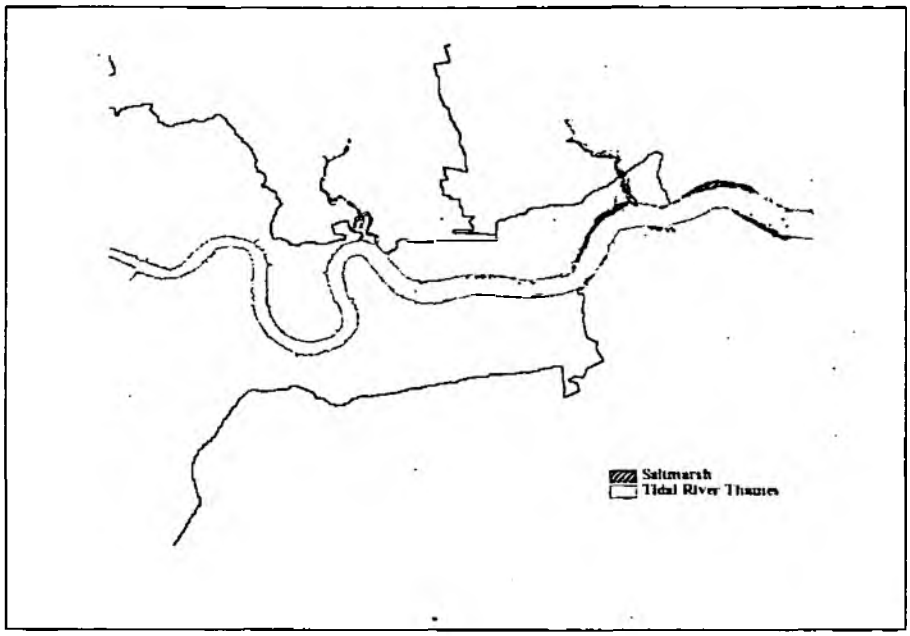
☐ *Regional Priority Actions* ✓ *=Actions So Far*

NB: All the above actions are assumed to be relevant in all LEAP areas pending classification of eutrophic water bodies in to the three tiers.

6. Examples of Action So Far

- Fisheries Management Strategy developed for Cotswold Water Park.
- AMP3 investigations carried out at Tring Reservoirs.
- Detailed input provided to strategic and individual gravel extraction/restoration planning issues to attain ecologically beneficial design in gravel pits throughout the Region.

COASTAL SALT MARSH



1. National Status

Coastal salt marshes in the UK comprise the upper, vegetated portions of intertidal mudflats, lying approximately between mean high water neap tides and mean high water spring tides. For the purpose of the action plan, however, the lower limit of saltmarsh is defined as the lower limit of pioneer saltmarsh vegetation (but excluding seagrass *Zostera* beds) and the upper limit as one metre above the level of highest astronomical tides to take in transitional zones.

2. Factors Causing Loss or Decline

2.1 Land claim.
2.2 Erosion and 'coastal squeeze'.
2.3 Accretion.
2.4 Sediment dynamics.
2.5 Cord grass invasion.
2.6 Grazing.

3. National Action Plan Objectives and Targets

3.1 The overall objectives of this plan are to offset the current losses due to coastal squeeze and erosion to maintain the existing extent of saltmarsh habitat and to restore the area of saltmarsh to 1992 levels. There is a need to identify realistic and achievable targets for creation. The results of individual estuary evaluations during the first five years of this 15 year plan will allow the headline targets set out below to be reviewed and refined. Such studies will also identify potential locations for saltmarsh creation.

3.2 There should be no further net loss (currently estimated at 100 ha/year). This will involve the creation of 100ha/year during the period of this plan. However, local losses and gains are to be expected in this essentially dynamic system.

3.3 Create a further 40 ha of saltmarsh in each year of the plan to replace the 600 ha lost between 1992 and 1998, based on current estimates.

3.4 Maintain the quality of the existing resource in terms of communities and species diversity and, where necessary, restore the nature conservation interest through appropriate management.

4. Regional Status

4.1 The Thames Tideway LEAP holds the Thames Region's intertidal salt marsh resource along the River Thames. As of March 2000, the total area of intertidal Thames surveyed within the Thames Tideway LEAP was 1.74km^2 and the total area of salt marsh surveyed was 0.045km^2, CASI Data Analysis 2000.

5. Regional Priority Actions & Actions So Far

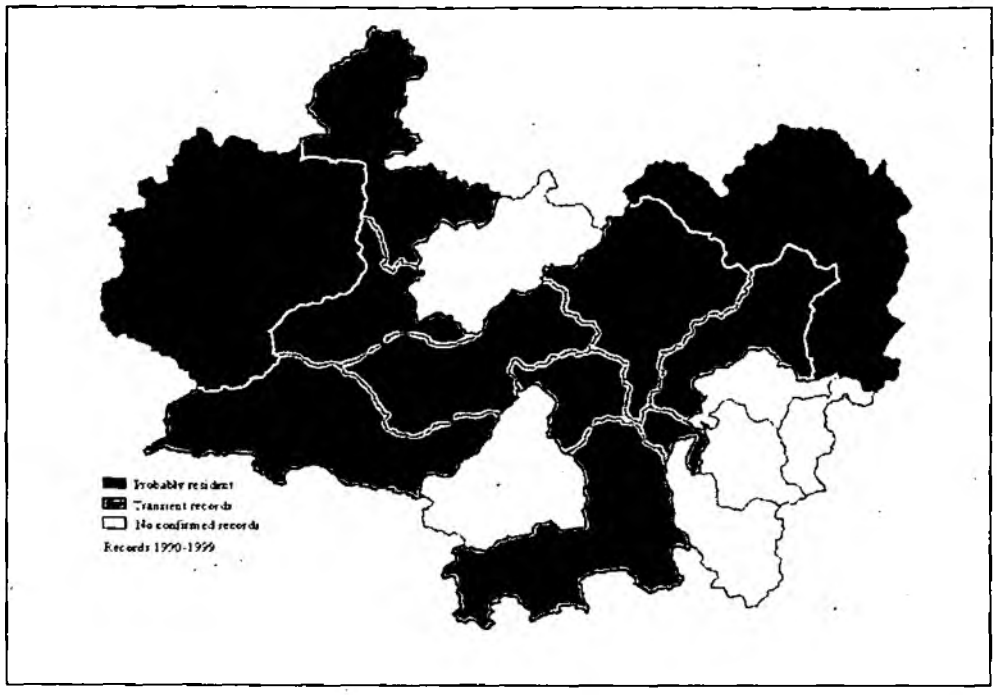
Coastal Salt Marsh Habitat Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.2	Ensure that as far as possible, coastal defence or other construction works avoid any disruption of coastal or other natural processes which might lead to loss of saltmarsh.									✓									
5.3.1	Promote and develop demonstration sites for the management and creation of saltmarsh and disseminate results.									✓									
5.3.4	Make use of the potential provided by existing estuary management partnerships in taking forward the actions of this plan.									✓									
5.5.3	Continue development of the use of remote sensing for monitoring soft coast habitats to determine the extent and rate of change, including the identification of the highest priority areas for salt marsh creation.									✓									

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- CASI data obtained for salt marsh sites on north and south banks of Tidal Thames.

OTTER *Lutra lutra*



1. National Status

1.1 The European otter, *Lutra lutra* is the only one of the world's thirteen species of otter native to the UK. The UK otter population is internationally important as the species has declined over much of its western European range and it is an important indicator of the quality of wetlands and waterways. The otter declined rapidly between 1950s-1970s, most likely due to the use of chlorinated hydrocarbon pesticides. Surveys conducted in the late 1980s and 1990s indicate that the otter population is recovering, with expansion strongholds in the south-west and west of England.

1.2. The otter is listed on:
Appendix I Convention On The International Trade In Endangered Species (CITES).
Annexe II Convention On The Conservation Of European Wildlife And Natural Habitats.
Annexes II and IV EC Directive 92/43 Habitats Directive.
Schedules 5 & 6 The Wildlife And Countryside Act 1981 & The Wild Mammals Protection Bill 1996.

2. Factors Causing Loss or Decline

2.1 The slow reproductive rate and short life span suggest that the recovery of numbers after a population decline will be slow. Naturally re-colonising otters in the Thames Region exist in very small and isolated populations and are at risk due to the trapping of American mink, mink hunting with hounds, impoverished & degraded bank-side habitat, pollution, disease, disturbance and development in the floodplains and road/rail crossings.

3. National Action Plan Objectives and Targets

3.1 Maintain and expand the otter population.

3.2 By 2010, restore breeding otters to all catchments and coastal areas where they have been recorded since 1960.

4. Regional Status

4.1 Otters probably bred in the Windrush and Upper Lee catchments during the 1990s and transient otters have been recorded with increasing frequency in several other catchments. Released otters from captive bred stock were introduced by the Otter Trust to the River Lee and River Stort in the early 1990s and on the Upper Thames in 1999. Low level monitoring continues in Herts, Essex, Surrey, Berks, Bucks, Oxon, Wilts and Glos.

5. Regional Priority Actions & Actions So Far

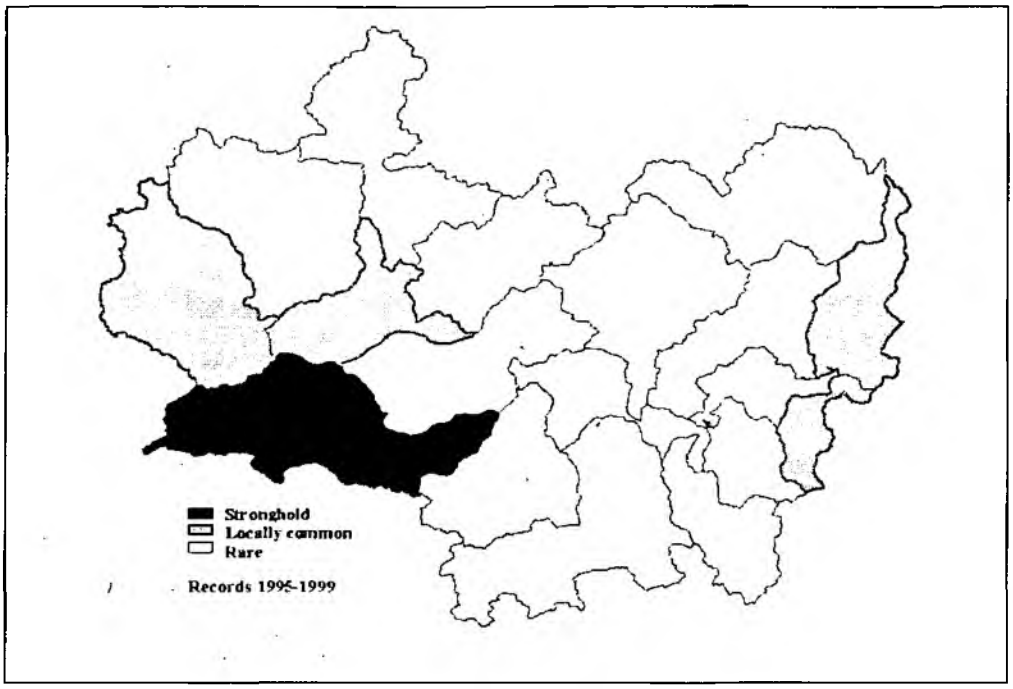
Otter Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.1	Seek to include actions for otters in all relevant LEAPs by 2005.	✓	✓	✓	✓	✓	✓	✓											
5.2.2	Continue to secure appropriate management of riparian habitats to maintain/enhance otter populations.	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓						
5.2.3	Produce catchment based local habitat management plans identifying key areas for restoration/enhancement.	✓		✓	✓	✓		✓			✓								
5.3.3	Attempt to limit accidental killing/injury (use of underpasses, fyke net guards etc) particularly in key catchments.	✓			✓	✓		✓		✓	✓		✓		✓				
5.4.1	Ensure provision of otter requirement & conservation info to key groups using posters and guidelines.	✓		✓	✓	✓		✓			✓				✓				
5.5.1	Collate info on prey productivity, biomass & pollution in occupied and likely re-colonisation areas.	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓		✓	✓	✓	✓	✓
5.5.5	Monitor population and distribution of otters, inc local survey to monitor expansion of fringe populations.	✓		✓	✓	✓		✓			✓		✓		✓				
5.6.1	Use this popular species to publicise importance of water quality & riparian habitats to biodiversity.	✓		✓	✓	✓		✓			✓				✓				

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Thames Water and The Wildlife Trusts Otters and Rivers Project co-funded.
- Rolling programmes of otter enhancements implemented on eg Upper Thames, Windrush, Colne, Kennet, Cherwell, Wey and Lee.
- Otter underpasses constructed, eg on Evenlode and Glyme.

WATER VOLE *Arvicola terrestris*



1. National Status

1.1 Water Voles are found in a wide variety of aquatic and wetland habitats in England and Wales, but do not occur in Northern Ireland. A national survey implemented by the Vincent Wildlife Trust between 1996 to 1998 revealed an 89 per cent decline in the population since the first national survey was carried out in 1989 to 1990.

1.2 The Water Vole is partially protected under Schedule 5 Section 9 (4) of the Wildlife & Countryside Act & Amendment 1998.

2. Factors Causing Loss or Decline

2.1 The more recent rapid decline has been mainly attributed to predation by American Mink, but a longer term decline is probably due to habitat loss/degradation, eg insensitive river engineering, bank protection and maintenance works, urbanisation of the floodplain, heavy grazing pressure from domestic livestock, bank mowing and vegetation clearance.

3. National Action Plan Objectives and Targets

3.1 Maintain the current distribution and abundance of the species in the UK.
3.2 Encourage re-establishment of Water Voles at restored sites and aim to ensure that they are present throughout their 1970s range by the year 2010.
3.3 Incorporate Water Vole conservation requirements into any relevant existing or new national policies.
3.4 Promote methods of riparian and watercourse management sympathetic to Water Voles.
3.5 Restore areas of habitat within the former range in order to support expansion of the current population.
3.6 Continue conservation research for the Water Vole.
3.7 Use the Water Vole as a flagship species for good riparian and wetland habitat.

4. Regional Status

4.1 The Thames Region has shown a dramatic regional decline (from 73.5 per cent of former sites occupied in 1990 to 24.0 per cent in 1998), but in parts of some LEAP areas there are still very significant populations eg at Rainham Marshes, Crayford Marshes and on the Kennet and Avon Canal.

5. Regional Priority Actions & Actions So Far

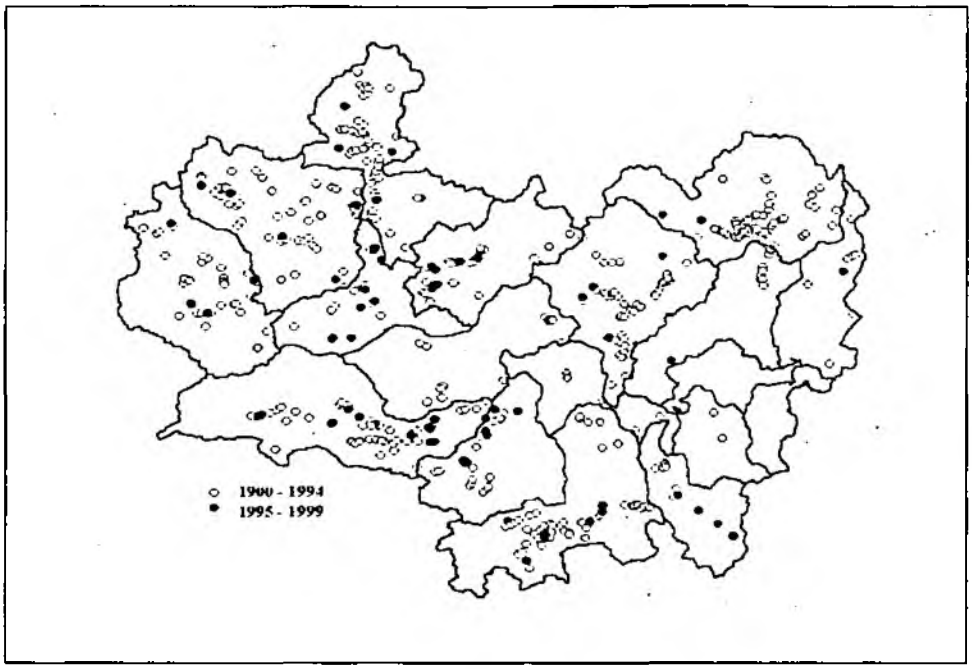
Water Vole Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2	Incorporate Water Vole conservation requirements into relevant habitat policies & agri-environment schemes.	✓		✓		✓		✓											
5.3	Identify large viable breeding populations and retain these with appropriate management/monitoring, from which a series of key areas are designated.		✓	✓	✓							✓				✓			
5.4	Incorporate Water Vole conservation into all BAPs, LEAPs etc.	✓	✓	✓	✓	✓	✓	✓											
5.5	Ensure development schemes do not affect the integrity of Water Vole populations.		✓	✓	✓	✓	✓	✓	✓			✓				✓		✓	✓
5.6	Use survey info to identify sites suitable for re-establishing populations.							✓											
5.7	Where necessary, employ mink control to protect large breeding Water Vole populations.										✓								
5.8	Establish a co-ordinated programme of translocation and re-introductions with local provenance where deemed appropriate/effective.																		
5.9	Ensure relevant information is available to all riparian owners, managers and advisors.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓				
5.11	Monitor the relative status & distribution of Water Voles through catchment-based surveys to determine extent of populations and level of fragmentation of suitable habitat.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓				
5.13	Encourage submission of data at a local level to incorporate into national database.																		
5.14	Encourage publication of features in local media to raise profile of the species.	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓		✓	✓			

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Co-funded Water Vole surveys in Essex, Herts, London, Surrey and Wiltshire.
- Established and co-funded Berks, Bucks and Oxon Water Vole Project.
- Identified key sites for Water Voles in Berks, Bucks and Oxon.
- Funded Riparian Mammal Advisor to deal with specialist enquiries on Water Voles.

WHITE-CLAWED CRAYFISH *Austropotamobius pallipes*



1. National Status

1.1 In Europe this crayfish was formerly widespread in France, Spain and Italy, but now populations are confined to a diminishing number of areas. It is the only species of freshwater crayfish which is native to the UK. It is widespread in clean, calcareous streams, rivers and lakes in England and Wales and occurs in a few areas in Northern Ireland, but many populations have been lost since the 1970s.

1.2 This species is listed in Appendix III of the Bern Convention and Annexes II and V of the EC Habitats Directive. It is classed as globally threatened by IUCN/WCMC. It is protected under Schedule 5 of the WCA in respect of taking from the wild and sale, and it is proposed for addition to Schedule 5 of the Wildlife (Northern Ireland) Order 1985.

2. Factors Causing Loss or Decline

2.1 Crayfish plague, a disease caused by the fungus *Aphanomyces astaci* which is carried by some North American crayfish including the Signal Crayfish *Pacifastacus leniusculus*. Spores from the fungus can also be transmitted by other means, including water, fish and damp equipment.

2.2 Direct competition for food and habitat from non-native crayfish: three non-native crayfish species are now breeding in the wild in the UK.

2.3 Habitat modification and management of waterbodies.

2.4 Pollution, particularly pesticides and sewage.

3. National Action Plan Objectives and Targets

3.1 Attempt to maintain the present distribution of this species by limiting the spread of crayfish plague, limiting the spread of non-native species, and by maintaining appropriate habitat conditions.

4. Regional Status

4.1 The White-clawed Crayfish, formerly widespread across the region, is now limited to ten LEAPs according to 1998/99 records. There have been no records of crayfish plague in Thames Region since 1995, however, commercial trapping of Signal Crayfish (*Pacifastacus leniusculus)* occurs in the Upper Thames. This species is present in the wild in most of the catchments in Thames Region and is a serious threat to the White-clawed Crayfish.

5. Regional Priority Actions & Actions So Far

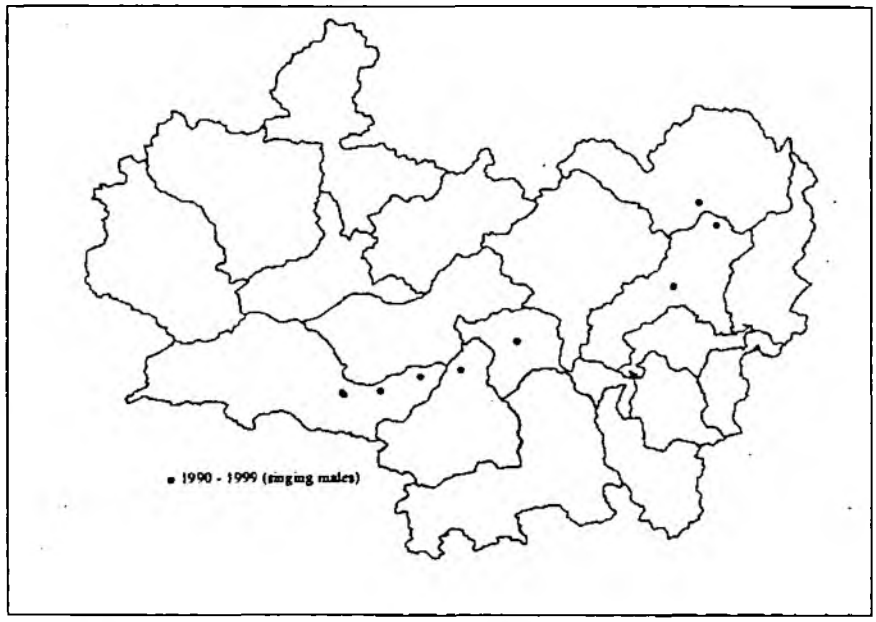
White-clawed Crayfish Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.2	Ensure appropriate habitat management is undertaken.	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓
5.3.2	If feasible, instigate & support re-introduction programmes to selected sites.	✓																	
5.4.1	Provide advice for those involved in the conservation of this species and the management of non-native crayfish populations.	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓
5.4.2	Provide advice on disinfection procedures to prevent crayfish plague transmission.	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓
5.5.1	Make inventories of SSSIs/ASSIs which contain native crayfish populations. Report distribution info to the Biological Records Centre national database.																		
5.6.1	Increase public awareness of the presence of this species in local rivers & threats to its existence.					✓													
5.6.2	Ensure anglers (and others) are made aware of the risks of spreading crayfish plague on equipment & the legislative controls on release of non-native species.		✓			✓		✓											

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Crayfish surveys carried out in Cotswold Water Park, Hertfordshire, River Ock and on BBOWT reserves.
- Trial re-introduction carried out on River Windrush.
- Regulation of trapping instigated.
- Advice provided to anglers on the risk of spreading crayfish plague via fishing equipment.

MARSH WARBLER *Acrocephalus palustris*



1. National Status

1.1 The Marsh Warbler is a summer migrant which formerly bred in scattered locations across southern England, but a long-term decline became apparent from the 1950s when there were probably well over 100 breeding pairs. Up until 1980 there were still around 50-80 breeding pairs but this declined rapidly in the 1980s. A population became established on the Kent coast in the 1970s and these birds have increased slowly in numbers and range since then, to over 25 pairs in at least four sites by 1993. In addition, several other sites are now occupied in adjoining counties (including seven singing males at one site in 1994) and records of unpaired singing birds are now widespread. Elsewhere in Europe, the Marsh Warbler breeds mainly in the cool temperate middle latitudes, usually in lowland areas. The population is concentrated in central and eastern Europe and has spread northwards in northern Europe in recent decades.

1.2 The Marsh Warbler is specially protected under Schedule 1 of the Wildlife and Countryside Act 1981 and EC Birds Directive, and is listed on Appendix II of the Bern Convention.

2. Factors Causing Loss or Decline

2.1 The reasons for the decline are not well known but some Marsh Warbler sites have been lost as a result of vegetation change and riverine channel modification.

2.2 Climate factors have been suggested as a partial cause of the long-term UK decline, since the species occurs at the northern edge of its range here, and breeds only in the warmer southern counties of England. However, many aspects of its ecology are poorly understood and numerous apparently suitable nesting areas have never been occupied.

2.3 Geographical isolation has been proposed as a possible reason for the near-extinction of the western population. However, the species has had a fragmented and scattered distribution in this country for many decades.

2.4 The Marsh Warbler is prone to disturbance by birdwatchers and others and the nest is relatively easy to find. A number of incidents of egg collecting have been recorded in the Worcestershire breeding area.

3. National Action Plan Objectives and Targets

3.1 Maintain the Marsh Warbler as a British breeding species.

3.2 In the long term, encourage a natural expansion of the Marsh Warbler population through maintenance of suitable habitat in former, current and future breeding areas.

4. Regional Status

4.1 In recent years, Marsh Warbler records in the Thames region have been mainly located in the London area, however, the data received from the Rare Breeding Birds Panel does not confirm breeding.

5. Regional Priority Actions & Actions So Far

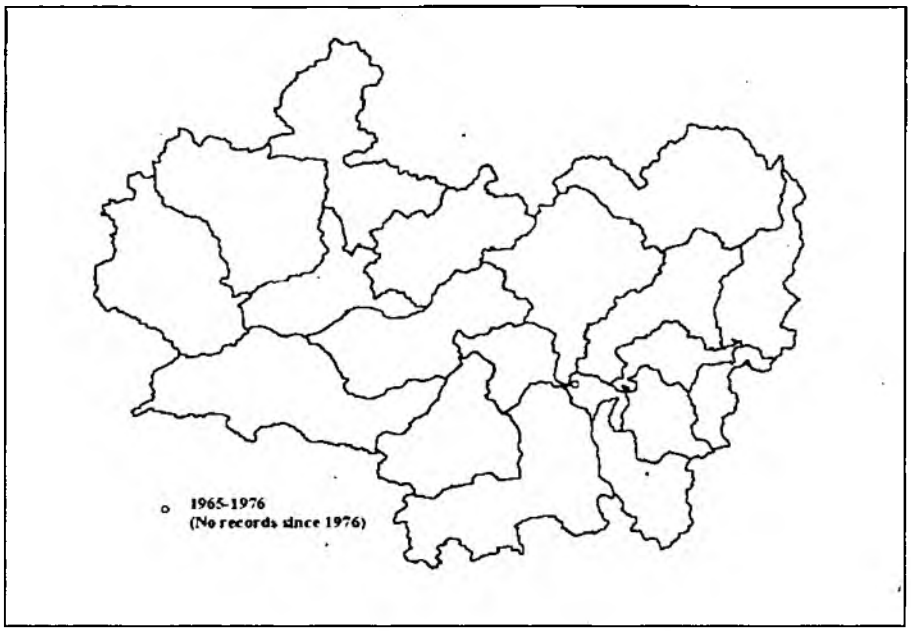
Marsh Warbler Species Action Plan -Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1	Incorporate appropriate riparian habitat management prescriptions into LEAPs.																		
5.2	Safeguard existing or recent breeding sites through habitat and water level management.				✓											✓			
5.3	Protect regularly occupied breeding sites from potentially damaging development.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Water Level Management Plans implemented at Thatcham Reed Beds SSSI and Ingrebourne Marshes SSSI, including habitat enhancements to benefit Marsh Warblers.

LITTLE WHIRLPOOL RAM'S HORN SNAIL *Anisus vorticulus*



1. National Status

1.1 This snail occurs in central and southern Europe. It occurs in unpolluted, calcareous waters in well-vegetated marsh drains and is usually found with a number of other molluscs which are rare and vulnerable, including the Shining Ram's Horn Snail *Segmentina nitida*.

1.2 In Britain, since 1965 it has been recorded at about fifteen sites, in Norfolk, Suffolk, Middlesex and Sussex, but colonies have not been confirmed outside East Anglia for over 10 years. In 1994, systematic sampling on the Pevensey Levels in Sussex, formerly a well known site, failed to produce any live records. The reasons for this decline are not clear. The species seems to have re-colonised at least one ditch system in Suffolk, possibly as a result of improved water quality.

1.3 This snail is listed as vulnerable in the GB Red List.

2. Factors Causing Loss or Decline

2.1 The main threats possibly include over-frequent ditch clearance, nutrient enrichment due to fertiliser applications, and conversion of grazing levels to arable farming with associated water table lowering.

3. National Action Plan Objectives and Targets

3.1 To maintain populations in at least 15 sites.

3.2 Produce management advice by the year 2000.

3.3 Establish baseline monitoring data for all known populations by the year 2000.

4. Regional Status

4.1 The Little Whirlpool Ram's Horn Snail was last found in the Thames Region in Shortwood Pond, Staines in 1976. The very localised distribution of this species within sites suggests that there are factors other than land use and management which affect this species. The most likely factor is water chemistry. Any other information on the management history, flora and other invertebrates may also provide clues to its habitat requirements.

5. Regional Priority Actions & Actions So Far

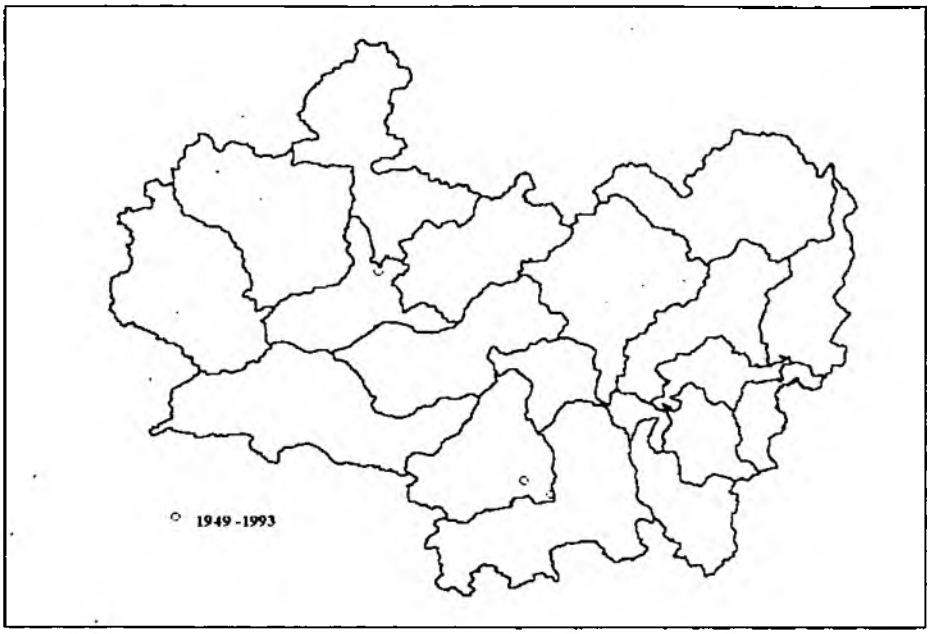
Little Whirlpool Ram's Horn Snail Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.1	Identify water quality requirements and take account of these standards in watercourses occupied by this species, seeking to restore clear, unpolluted water to ditches to provide opportunities for expansion or recolonisation.																		
5.2.3	Seek to ensure that Water Level Management Plans take into account the ecological requirements of this species where appropriate.																		
5.5.1	In single season undertake survey of all post-1965 recorded sites to establish an accurate distributional baseline for the species. Monitor at each existing site.																		
5.5.3	Survey poorly recorded areas to discover existence of further colonies.																		
5.5.5	Pass info gathered during survey/monitoring to JNCC/BRC for incorporation into national databases.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- None.

GLUTINOUS SNAIL *Myxas glutinosa*



1. National Status

1.1 This north European aquatic snail is currently known from only one site in the UK, in Llyn Tegid, Snowdonia National Park, North Wales. The species has not been found recently at a number of formerly well-known sites.

1.2 The Glutinous Snail is regarded as vulnerable throughout Europe and is recorded as endangered in the GB Red List and globally threatened by the IUCN/WCMC. It is protected under Schedule 5 of the WCA 1981.

2. Factors Causing Loss or Decline

2.1 This snail occurs in clear, hard water which is free from fine sediment and nitrate/phosphate pollution. It shows a preference for firm substrates. Consequently, it is susceptible to a wide range of physical disturbance and pollutants.

3. National Action Plan Objectives and Targets

3.1 Ensure the known remaining population is maintained and protected.

3.2 Locate any other populations and seek to maintain them.

3.3 Secure improvements in water quality and habitat suitability at the remaining site.
Gain detailed knowledge of the ecology of the species.

4. Regional Status

4.1 Kennington Pit near Oxford, was the only known remaining population in the UK in the early 1990s prior to the recent discovery at Llyn Tegid. However, it has not been recorded at the Kennington Pit site since 1993.

5. Regional Priority Actions & Actions So Far

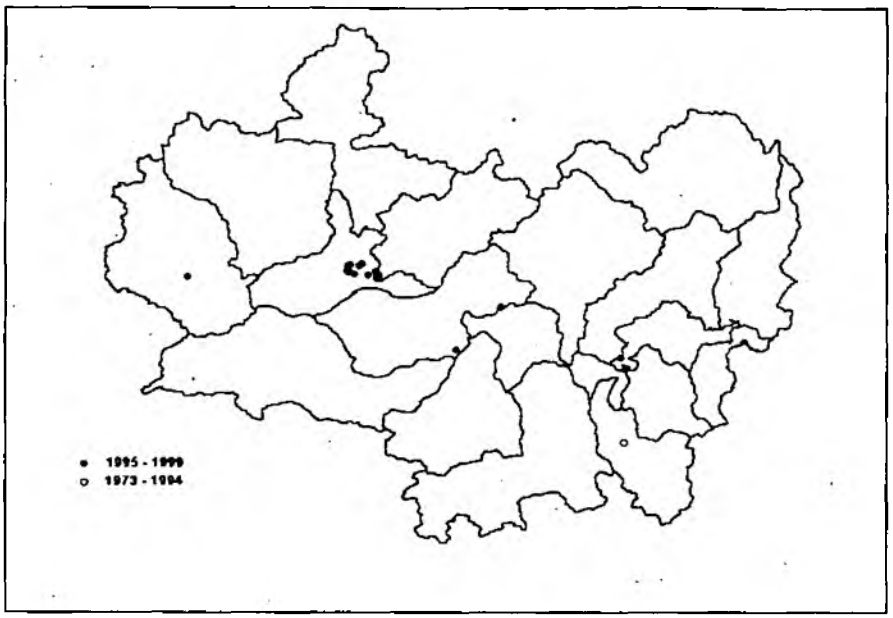
Glutinous Snail Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.1	Encourage good water quality in the catchment area of the Kennington Pit site.																		
5.4.1	Following suitable research on the ecology of the species, ensure the provision of advice on population and habitat management.																		
5.5.2	Survey all sites where the species has been recorded in the previous 50 years, by 2000.			✓							✓		✓						
5.5.5	Pass info gathered during survey & monitoring to JNCC or BRC so it can be incorporated into national database.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Surveys carried out at sites in the Loddon and Wey catchments and at Kennington Pit near Oxford.

DEPRESSED RIVER MUSSEL *Pseudanodonta complanata*



1. National Status

1.1 This mussel's current European status is unclear due to lack of data. In the UK since 1950 it has been recorded from 63 ten km squares in England and Wales - from Somerset through the Welsh borders to south Yorkshire. Recent surveys have found the species in a variety of UK rivers, and although the species may easily be overlooked it does seem to be in decline.

2. Factors Causing Loss or Decline

2.1 The threats to this species are not fully known, but are likely to include water pollution, physical disturbance of river banks and channels, drought and low numbers of host fish populations.

3. National Action Plan Objectives and Targets

3.1 Identify and maintain key populations.

3.2 Research the ecology and habitat preference of this species.

4. Regional Status

4.1 As the River Thames is much wider than most rivers known to contain the Depressed River Mussel, the area of inhabitable marginal river bed is greater for every kilometre of river. This, combined with the great length of the River Thames may mean that it holds a much larger number of individuals than most British rivers.

4.2 The Depressed River Mussel has recently been positively identified in the Thames at Abingdon, Sonning and Marlow. Older data show it to have been present in the Thame, Kennet, Loddon, Wey, Mole, Colne, Lower Thames, Wandle, Beverley Brook and Hogsmill.

5. Regional Priority Actions

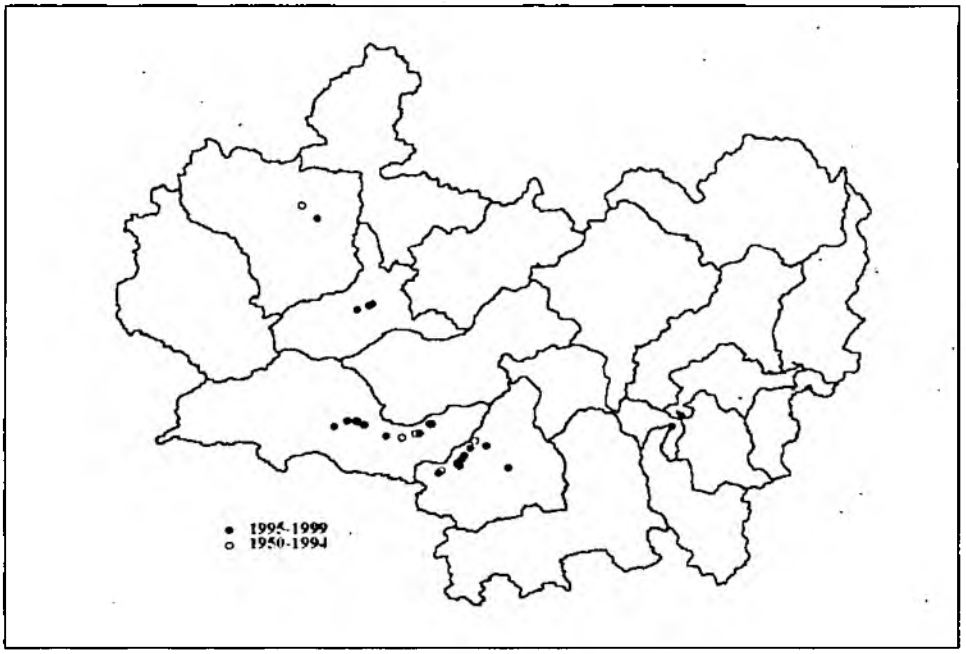
Depressed River Mussel Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wyre	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.1	Identify water quality requirements for the mussel and seek to ensure & maintain favourable water quality requirements at key sites.																		
5.1.2	Seek to ensure river management plans & activities take account of the requirements of the species.																		
5.2.1	Ensure that suitable habitat is maintained at key sites throughout the range of this species.																		
5.4.1	Provide advice to all river managers in areas where this mussel occurs.																		
5.5.1	Undertake studies to identify the ecological requirements of this species.																		
5.5.2	Carry out surveys to establish the distribution and location of key populations by the year 2000.			✓			✓												
5.5.5	Encourage regular monitoring of key populations and seek to identify any further threats.																		
5.5.6	Pass info gathered from survey & monitoring to JNCC or BRC to incorporate into national databases.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Surveys carried out at several locations on the middle Thames and in connection with the Abingdon reservoir proposal.

FINE-LINED PEA MUSSEL *Pisidium tenuilineatum*



1. National Status

1.2 The distribution and abundance of this species is still poorly understood because it is under-recorded. However, we do know it is confined to central & southern England, Welsh borders and west Midlands canals. Early British accounts suggest that it favours large rivers and canals, although there are post-1970 records from ponds in Sussex and Herefordshire.

1.2. Fine-lined Pea Mussels usually occur in low numbers and are generally found in fine sediments at river margins, in areas of lower flow and amongst the base of aquatic weeds.

1.3 Until more is known about the Fine-lined Pea Mussel, the species is considered at risk. It is listed on GB Red List 3 and is considered rare throughout its European range.

2. Factors Causing Loss or Decline

2.1 The difficulties of identifying species of Pea Mussel have contributed to the lack of records. The reason for the disappearance of this species from some sites, especially in canals, is not clear.

3. National Action Plan Objectives and Targets

3.1 Carry out surveys to establish the full extent of the current distribution by 2002.
3.2 Initiate autecological research to develop a clearer understanding of the ecological requirements of the species.
3.3 Following analysis of ecological findings, maintain or enhance the species by establishment of appropriate habitat management strategies.
3.4 Maintain the present distribution.
3.5 Explore the possibility of restoring Fine-lined Pea Mussel to previously occupied areas in East Midlands when habitat conditions are considered suitable.
3.6 Produce aids for identification to help reduce the under-recording of the species.

4. Regional Status

4.1 Recent surveys have positively identified Fine-lined Pea Mussel in the Evenlode, Kennet, Ock, Loddon and Lower Thames.

5. Regional Priority Actions & Actions So Far

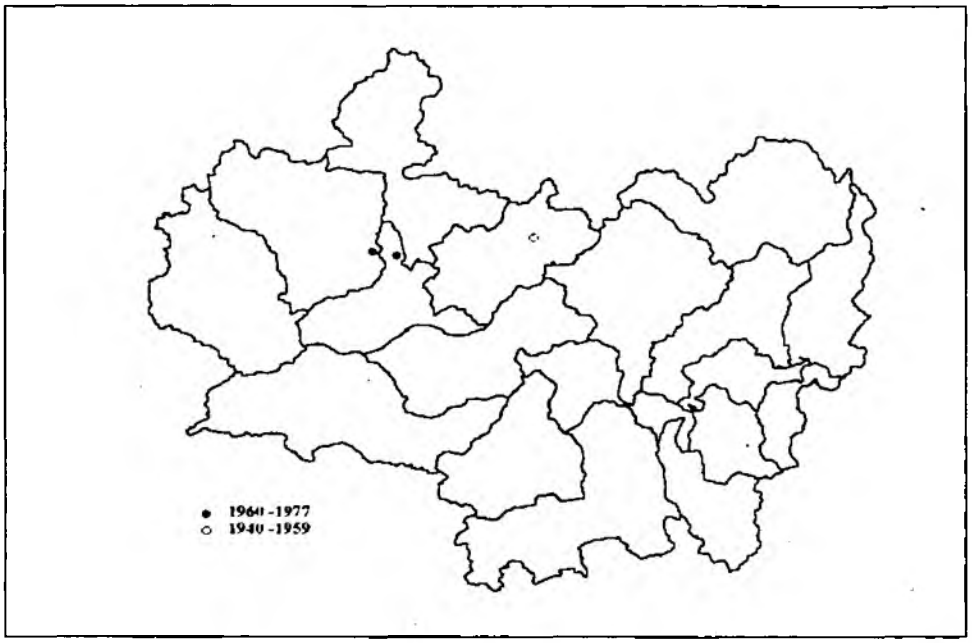
Fine-lined Pea Mussel Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.5.3	Survey poorly recorded areas to discover if further colonies exist.			✓	✓								✓						
5.5.9	Undertake surveys of historical locations within a single season to discover whether populations still remain.				✓								✓						
5.5.10	Survey new areas in locations where populations may be present.			✓	✓								✓						
5.5.11	Plan & undertake periodic monitoring of populations at selected sites to identify trends and potential threats.																		
5.5.13	Ensure ecological & monitoring info is passed to a central organisation to be incorporated in national databases.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Surveys carried out in Thames, Kennet and Loddon catchments.

FRESHWATER BRYOZOAN *Lophopus crystallinus*



1. National Status

1.3 *Lophopus crystallinus* is one of 11 freshwater bryozoans found in the UK, and is the only member of its family in this country. Bryozoans feed on minute organisms suspended in the water column. *L. crystallinus* lives in lakes, ponds, ditches and slow rivers, where it has been found growing on a variety of substrata including water plants, rocks, shells, wood and dead leaves.

1.2. Since 1970 *L. crystallinus* has been found at only four sites in Norfolk, Oxfordshire, South Humberside, and Lancashire. There are older records from: near Port Meadow, Oxfordshire; several of the Norfolk and Suffolk Broads and waterways; Langmere, Norfolk; Hartwell, Buckinghamshire; Little Baddow, Essex and Chelsea, Middlesex. A record for the River Ravensbourne, Kent is undated. It is typical for records of this species at any particular site to be for a short period only; this may be a natural aspect of its ecology or because continual occurrences tend not to be reported. *L. crystallinus* has been widely recorded in Europe but its current status outside Britain is not known.

1.3 In Great Britain this species is classified as Rare.

2. Factors Causing Loss or Decline

2.1 Eutrophication of water bodies.

2.2 Water abstraction.

2.3 Over-tidying of waterbodies, especially the removal of fallen wood.

3. National Action Plan Objectives and Targets

3.1 Maintain all long term populations of *L. crystallinus*.

3.2 Facilitate natural increase in the number of populations by 2010.

4. Regional Status

4.1 Although there are historical records from Kent, Essex, Buckinghamshire and Oxfordshire, the only site in Thames Region for *L. crystallinus* since 1970 is the Chil Brook in Oxfordshire. It is not known whether the species now exists in the Region.

5. Regional Priority Actions & Actions So Far

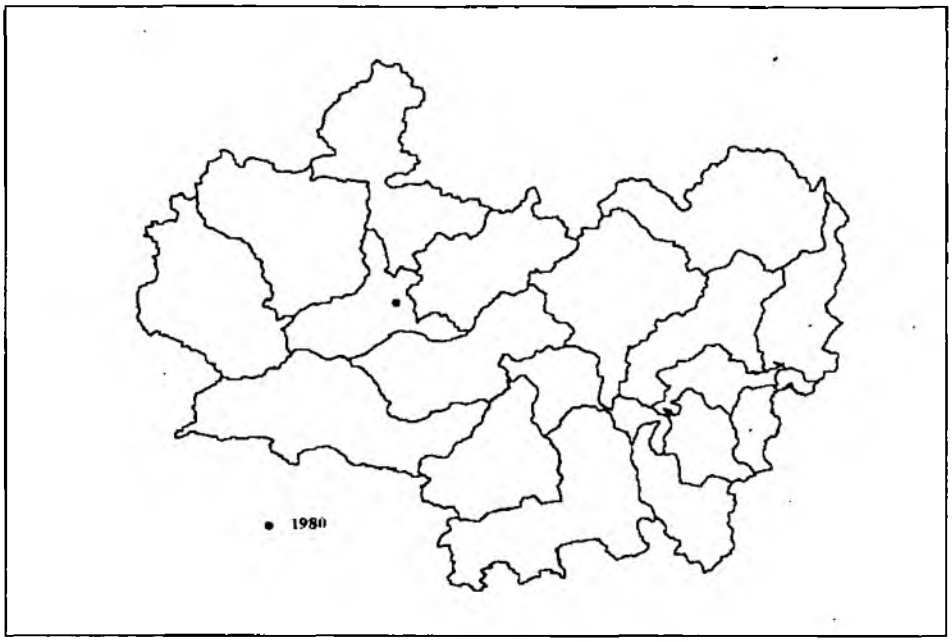
Freshwater Bryozoan Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.1	Address the requirements of this species in the LEAP process and in relevant WLMPS.																		
5.1.2	Take account of the species' requirements in response to applications for water abstraction licences.																		
5.4.1.	Advise landowners and managers of the presence of the species and the importance of beneficial management for its conservation.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- None.

GREAT TASSEL STONEWORT *Tolypella prolifera*



1. National Status

1.1 Great Tassel Stonewort is a spring annual which grows in slow-moving alkaline water in ditches, rivers and canals. Although generally found in shallow water, it tends to prefer deeper water than other members of the genus. It seems to benefit from periodic disturbance and often occurs in quantity after ditch clearances.

1.2 This species has only been confirmed at a few sites since 1970. There is the Oxfordshire site and two ditch sites in Cambridgeshire, at one of which it re-appeared in 1990. The other sites are in Gloucestershire, where it was last seen in 1977. Two sites in Somerset, one of which was discovered in 1998; and Sussex, where it has been recorded sporadically in several locations. Great Tassel Stonewort is scattered throughout central western Europe, reaching its northern limit in England and extending to Poland and northern Italy. It is also recorded from North and South America.

1.3 In Great Britain this species is classified as Endangered. It receives general protection under the Wildlife and Countryside Act 1981.

2. Factors Causing Loss or Decline

2.1 Lack of periodic disturbance, eg ditch clearance, leading to overcrowding by other vegetation.

2.2 Water enrichment is occurring at one of the Cambridge sites.

3. National Action Plan Objectives and Targets

3.1 Maintain all viable populations at extant sites.

3.2 Restore populations to at least three suitable historic sites by 2005.

4. Regional Status

4.1 Great Tassel Stonewort has been recorded on the Thames (Eynsham to Benson) & Ock LEAP in 1980.

5. Regional Priority Actions & Actions So Far

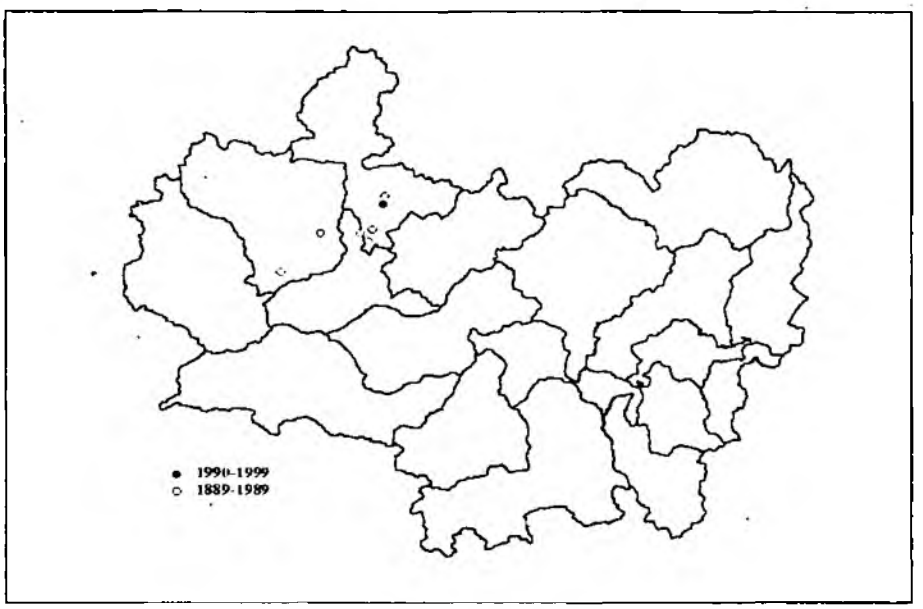
Great Tassel Stonewort Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.4.1	Advise relevant landowners and managers of the presence and importance of Great Tassel Stonewort, and of the appropriate management for its conservation.																		
5.4.2	As far as possible, ensure that relevant agri-environment project officers, waterways managers and drainage engineers are advised of locations of this species, its importance and of the management needed for its conservation on and adjacent to existing sites.																		
5.5.1	Collate information and re-survey sites where necessary in order to determine the current distribution and status of this species in Britain, and to assess the threats to populations at extant sites.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- None.

TASSEL STONEWORT *Tolypella intricata*



1. Current Status

1.1 Tassel Stonewort is a species of alkaline water in pools, canals, ditches, poached edges of ponds and wheel-ruts that are dry during the summer months. It is not very competitive and benefits from disturbance which keeps down other vegetation. Thus in ditches, it often re-appears after clearance work, and cattle disturbance around pools is often beneficial.

1.2 This species has been found at seven British sites since 1970: ponds in Inglestone Common, Gloucestershire (seven colonies), one site in Cambridgeshire (four colonies), two sites in Oxfordshire, and one site each in Suffolk, Norfolk, Somerset and Worcestershire. It was once more widespread, being recorded from 42 localities pre-1970, most of which were in the southern and eastern England. It has a scattered distribution throughout Europe.

1.3 In Great Britain, this species is classified as endangered. It receives general protection under the Wildlife and Countryside Act 1981.

2. Factors Causing Loss or Decline

2.1 Lack of disturbance (often due to the decline of traditional management practices such as ditch clearance) leading to displacement of this species by more competitive vegetation.

2.2 Falling water-table levels may have been responsible for the loss of populations at several sites and may still be a threat at some extant sites. The extent of this problem needs further investigation.

3. National Action Plan Objectives & Targets

3.1 Maintain viable populations of this species at all extant sites.

3.2 Restore or establish populations at five suitable sites by 2005.

4. Regional Status

4.1 The post-1960 records for Tassel Stonewort are from a 40m pool on Holts Farm, Merton, Oxfordshire recorded in 1998 and 1999 in the Cherwell LEAP area.

5. Regional Priority Actions & Actions So Far

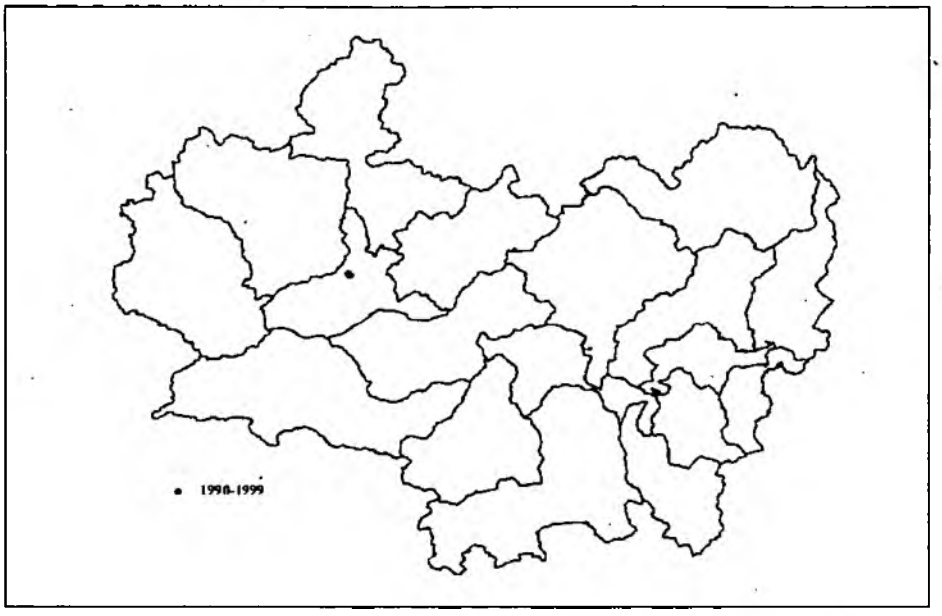
Tassel Stonewort Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.5	Ensure that Local Environment Agency Plans and Water Level Management Plans take full account of the requirements of this species. In particular, ensure that no further Tassel Stonewort sites are lost through increases in levels of water abstraction.							✓											

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Surveys carried out in selected Oxfordshire sites.
- Species requirements incorporated into Otmoor wetland creation project.

SOUTHERN DAMSELFLY *Coenagrion mercuriale*



1. National Status

1.1 This globally threatened damselfly breeds in heathland streams and runnels and, more rarely, rhos pasture, chalk streams and calcareous mires. It has a restricted distribution in continental Europe, and it can be found in North Africa. It is threatened throughout most of its range.

1.2 The Southern Damselfly has suffered a 30% decline in its UK distribution since 1960. Since 1980 it has been recorded from 24 ten km squares in Devon, Dorset, Hampshire, Mid Glamorgan, the Gower Peninsular, Pembrokeshire and Anglesey, and recently Oxfordshire, with the largest populations being in the New Forest and Pembrokeshire.

1.3 This species is listed on Annex II of the EC Habitats Directive and appendix II of the Bern Convention. It is listed as rare in the GB Red List.

2. Factors Causing Loss or Decline

2.1 Loss of suitable habitat due to lack of appropriate heathland management, including reduced grazing leading to the development of tall dense riparian vegetation.

2.2 Drainage and dredging of breeding sites.

3. National Action Plan Objectives and Targets

3.1 Maintain and enhance existing populations through appropriate management to increase population and range of the species in the UK, preventing further loss of breeding populations in England and Wales.

3.2 If feasible, re-introduce species to five former sites by 2005.

4. Regional Status

4.1 The Southern Damselfly has recently been recorded in two locations in the Thames Region, in the Thames (Eynsham to Benson) & Ock LEAP area in the 1990s.

5. Regional Priority Actions & Actions So Far

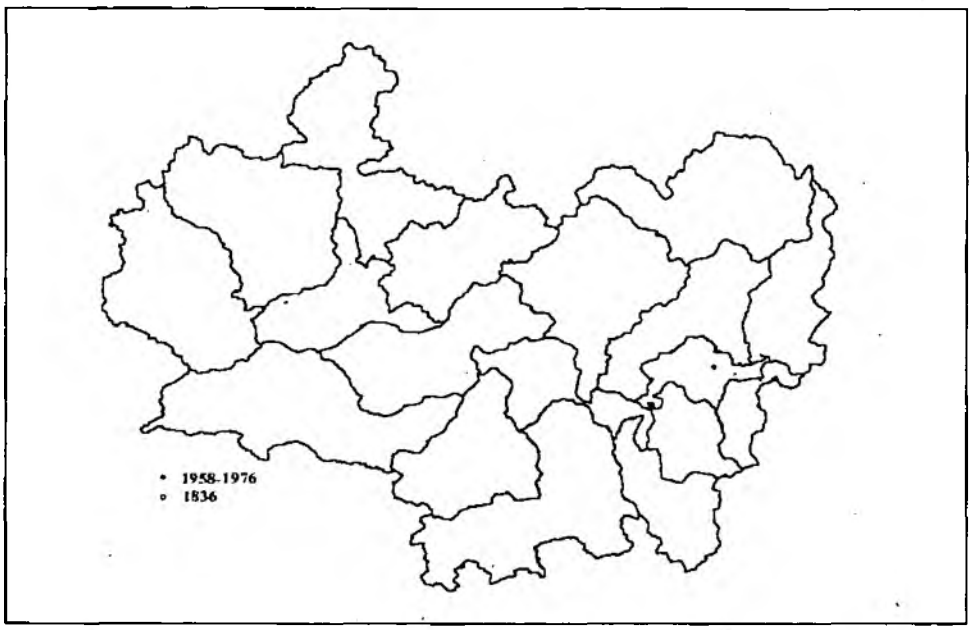
Southern Damselfly Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.1	Encourage uptake of beneficial land management schemes on land adjacent to occupied sites, including design/cessation of drainage schemes, and other agri-environmental measures.			✓															
5.2.3	Ensure that, where possible, the hydrology of occupied sites remains favourable.			✓															
5.4.1	Ensure relevant landowners, managers and all others involved in the management of sites which support the species are aware of its presence and rarity, and appropriate methods of habitat management for its conservation.			✓															
5.5.2	Promote regular monitoring of extant sites, seeking to identify further threats to the species.																		
5.5.4	Pass info gathered during survey/monitoring to JNCC/BRC for inclusion in national databases.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Survey carried out in Sandford Brook catchment.
- Southern Damselfly requirements incorporated into Cothill Fen Water Level Management Plan and Habitats Directive Review.

TWAITE SHAD *Alosa fallax*



1. National Status

1.1 The Twaite Shad occurs along the west coast of Europe, the eastern Mediterranean, and in the lower reaches of a few large rivers along these coasts. It has declined in many parts of Europe: in the UK it is now virtually absent in several rivers where it is believed previously to have spawned. Rivers which still have spawning stocks include the Wye, Usk, Severn and Tywi. It may also spawn in river mouths around the Solway Firth, the only known area around Scotland where mature fish are found each summer.

1.2 The species is listed on Appendix III of the Bern Convention and Annexes II and V of the EC Habitats Directive.

2. Factors Causing Loss or Decline

2.1 Pollution.
2.2 Overfishing.
2.3 Habitat destruction.
2.4 Artificial river obstructions.

3. National Action Plan Objectives and Targets

3.1 Ensure the continued survival of Twaite Shad around the UK.

4. Regional Status

4.1 Twaite Shad now appear in modest numbers in commercial catches off the Sussex, Kent & Essex coast. Substantial numbers are taken in keddle nets set for sea trout on the Sussex coast. Environment Agency (Southern Region) staff captured six Twaite Shad in a gill net survey in the tidal Medway downstream of Allington Lock in November 1996.

4.2 Studies have revealed that Twaite Shad may be one of the most sensitive estuarine species to low dissolved oxygen levels, much more sensitive than Atlantic Salmon. Consequently, water quality is currently barring the Twaite Shad from returning to the Thames.

5. Regional Priority Actions & Actions So Far

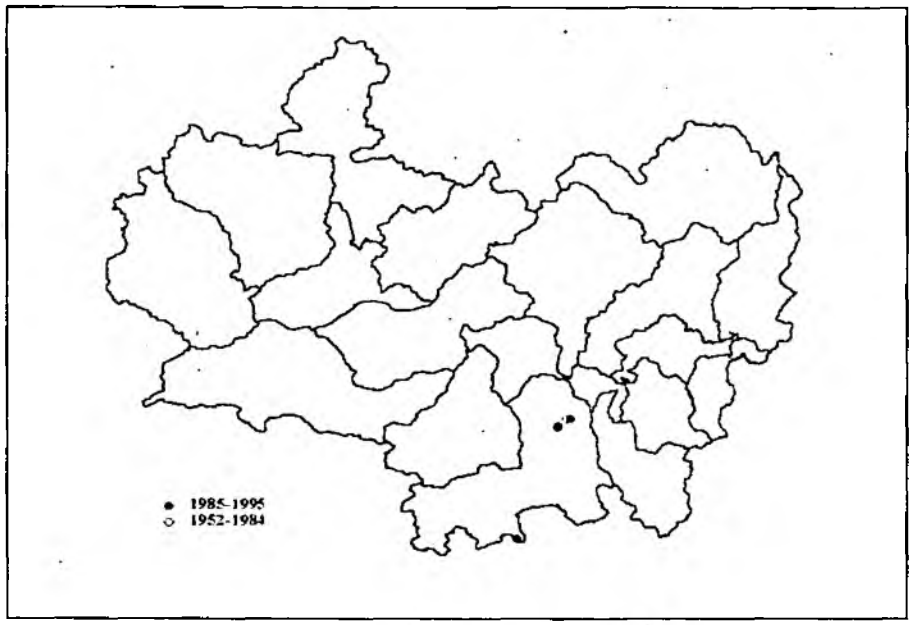
Twaite Shad Species Action Plan Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.21	Identify and characterise spawning sites for Twaite Shad and use this information to identify potential spawning sites.																		
5.23	Seek to ensure favourable actions in LEAPs and other appropriate local plans.																		
5.32	Optimise the range of conditions necessary for the conservation and restoration of Twaite Shad stocks. Seek to restore historical populations. Consider a translocation project using the nearest suitable stock once appropriate conditions exist at the recipient site.																		
5.33	Encourage anglers and net fishermen to record and release the Twaite Shad they catch, possibly using a Shad leaflet to raise awareness.																		
5.41	Arrange workshops as necessary for Agency staff, NGOs and land managers to explain the ecology and distribution of Shad.																		
5.42	Prepare and circulate practical guidelines for riparian landowners and river managers on the identification and conservation of Twaite Shad.																		
5.51	Survey current and former sites to establish the current status of the species. Obtain quantitative information on catches, spawning and nursery sites to aid in the prediction of potential spawning areas. Produce a map to show the distribution of potential sites.									✓									
5.52	Obtain information on the behaviour of Shad in fresh water to identify areas of the river used.																		
5.53	Investigate the restoration of river migration routes and spawning habitat to allow translocation once suitable conditions are restored.																		
5.61	Increase public awareness of the presence of Shad in local rivers and promote conservation issues.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Survey carried out in the Thames Tideway.

CUT GRASS *Leersia oryzoides*



1. National Status

1.1 Cut Grass is a species of wet meadows, ditches, canal-and river-sides. It grows on nutrient-rich mud of acid to neutral pH, often close to the water's edge, and sometimes in cattle poached ground.

1.2 Cut Grass has never been widespread in the UK, and since 1985 it has been recorded at only five sites, all of which are in southern England and one of which is a recent introduction. It has been recorded throughout Europe, and although it is generally in decline.

1.3 In Britain Cut Grass is classified as Endangered. It is specially protected under Schedule 8 of the Wildlife and Countryside Act 1981.

2. Factors Causing Loss Or Decline

2.1 Cessation of traditional water course management, including periodic dredging which create areas of bare mud for colonisation.

2.2 Cessation of grazing and poaching which is needed to suppress growth of competitive vegetation.

2.3 Restricted availability of wet grassland and swamp habitat as a result of maintaining drainage systems.

2.4 Water pollution may also be a factor, but further research is required to confirm this.

3. National Action Plan Objectives And Targets

3.1 Maintain the range of Cut Grass in Britain.

3.2 Enhance its range through the spread of populations from extant sites and through re-introductions if considered appropriate.

4. Regional Status

4.1 Since 1985 Cut Grass has only been recorded in the Wey catchment and more recently only from the Basingstoke Canal. However, a number of recent former sites need to be re-surveyed to establish whether the plant has truly disappeared.

5. Regional Priority Action & Actions So Far

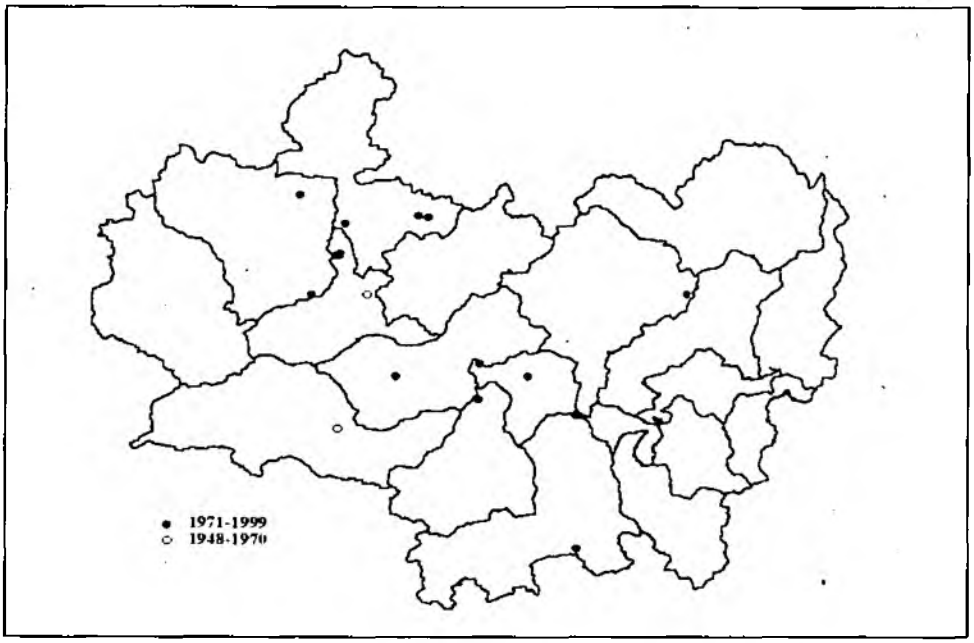
Cut Grass Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.3	Ensure that land drainage work does not take place in the vicinity of extant wet-grassland populations.																		
5.2.4	Ensure that watercourse management programmes at sites for Cut Grass fully take into account the requirement of the species.																		
5.2.5	Ensure that the LEAPs and Water Level Management Plans fully take into account the requirement of the species.																		
5.2.6	Prepare watercourse management plans for all SSSIs with extant populations of cut-grass.										✓								
5.4.2	As far as possible, ensure that all relevant agri-environment project officers, relevant drainage engineers and waterways managers are advised of the location of this species and its management requirements.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Assisted with the production of the Basingstoke Canal Management Plan which includes conservation proposals for Cut Grass.

GREATER WATER-PARSNIP *Sium latifolium*



1. National Status

1.1 In the past Greater Water-parsnip was most commonly found on rafts of semi-floating vegetation at the margins of lakes and large rivers. However, following the drainage and reclamation of fens in the UK, it is now most often found in drainage ditches in the south and east of England. It continues to thrive in the Lough Erne system of Northern Ireland. It is widespread in Europe, but very rare near the Mediterranean.

1.3 In the UK, the Greater Water-parsnip is classified as Nationally Scarce but its population is not as large as this classification might imply. It receives general protection under the Wildlife and Countryside Act 1981.

2. Factors Causing Loss or Decline

2.1 Frequent cleaning and over-engineering of ditches.

2.2 Drainage of sites.

2.3 Exposure to prolonged heavy grazing.

2.4 Dereliction of ditches leading to reed and scrub invasion.

3. National Action Plan Objectives and Targets

3.1 Maintain the range of Greater Water-parsnip in the UK.

3.2 Ensure that viable populations are maintained at all extant sites.

3.3 Regenerate plants from the seed-bank on five suitable historic sites in England by 2003.

3.4 Provide opportunities for the spread of Greater Water-parsnip from extant sites.

4. Regional Status

4.1 Greater Water-parsnip appears now to be very scarce in Thames Region and surveys are urgently required to establish its status at formerly known sites.

5. Regional Priority Actions & Actions So Far

Greater Water-parsnip Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Chenwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.2	Ensure that LEAPS and WLMPs take full account of the requirements of the species.			✓					✓										
5.2.3	Seek beneficial management for this species at extant sites (including only limited ditch clearance and grazing).			✓															
5.4.1	Ensure that landowners and managers of extant sites are aware of the management requirements of the species.			✓															
5.5.1	Collate information and re-survey sites where necessary to determine the current distribution and status of the species in Thames Region.																		

NB: No SAP progress report form was available at the time of writing, so the above actions are from the original UK Biodiversity Group Report.

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Survey carried out at Langham Pond, Surrey.
- Conservation requirements for Greater Water-parsnip incorporated into Wytham Ditches and Flushes SSSI Water Level Management Plan near Oxford.

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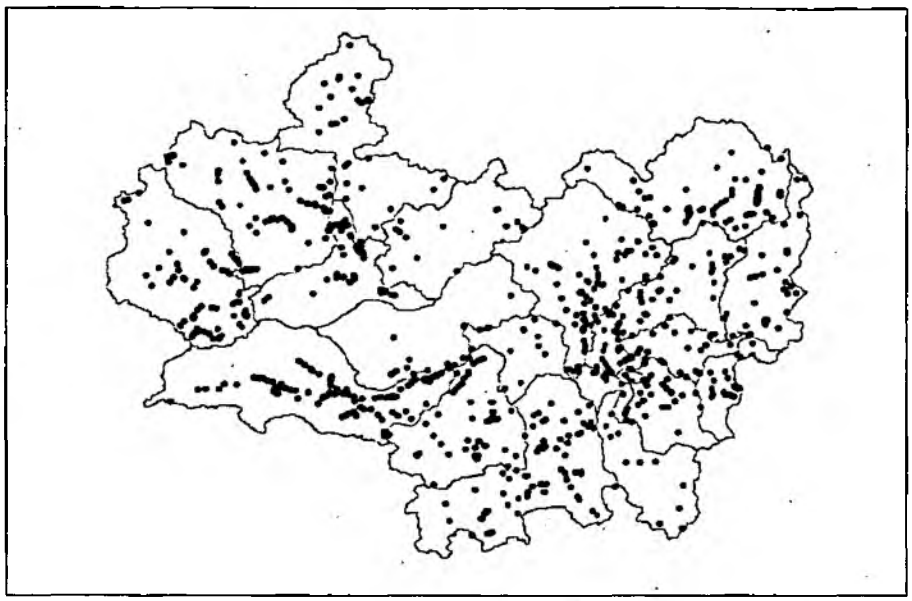
CATEGORY 3
HABITATS & SPECIES

WET WOODLAND



1. National Status

1.1 Wet woodland occurs on poorly drained or seasonally wet soils, usually with Alder, Birch and willows as the predominant tree species, but sometimes including Ash, Oak, Pine and Beech on the drier riparian areas. It is found on floodplains, as successional habitat on fens, mires and bogs, along streams and hillside flushes, and in peaty hollows. These woodlands occur on a range of soil types including nutrient-rich mineral and acid, nutrient-poor organic ones. The boundaries with dry woodland may be sharp or gradual and may (but not always) change with time through succession, depending on the hydrological conditions and the treatment of the wood and its surrounding land. Therefore wet woods frequently occur in mosaic with other woodland habitat types (e.g. with upland mixed Ash or Oak woods) and with open habitats such as fens. Management of individual sites needs to consider both sets of requirements.

1.2 Many Alder woods are ancient and have a long history of coppice management which has determined their structure, and in some situations it appears that this practice has maintained alder as the dominant species and impeded succession to drier woodland communities. Other wet woodland may develop through natural succession on open wetlands (sometimes following cessation of active management) and structurally are little influenced by direct forestry treatments.

1.3 Notable concentrations of wet woodland on fens occur in East Anglia, Shropshire and Cheshire, while hill-side and plateau Alder woods are more restricted to Wales, Cumbria and western Scotland. Fragments of ancient floodplain forest are rare, and the best examples are probably in the New Forest and northern Scotland, but fragments of Birch bog woodland occur more widely in scattered stands across the UK.

1.4 Some wet woods include habitats identified under Annex I of the EC Habitat Directive, for example residual alluvial forests and bog woodland.

1.5 There are no current precise data on the total extent of wet woodland in the UK, but in the late 1980's the Nature Conservation Council estimated the total extent of ancient wet woodland to be about 25,000 – 30,000 ha. The area of recent wet woodland may be at least as large again. Thus a crude estimate of the total wet woodland area in the UK is 50,000 – 70,000 ha.

1.6 Wet woodland is an important habitat for a number of priority species including Otter *Lutra lutra*, the weevils *Melanapion minimum* and *Rhynchaenus testaceus*, the craneflies *Lipsothrix ecucullata, L. nervosa, L. errans, and L. nigristigma* and the Netted Carpet Moth *Eustromia reticulata*. Their requirements should also be taken into account in the implementation of biodiversity action plans.

2. Factors Causing Loss or Decline

2.1 Wet woodland is affected by the following factors that impact directly or indirectly upon its current condition and dynamics:

2.2 Clearance and conversion to other land-uses, particularly in woods recently established on wetland sites.

2.3 Cessation of management in formerly coppiced sites may encourage succession to drier woodland types.

2.4 Inappropriate grazing levels and poaching of the soil by sheep, cattle and deer leading to a change in the woodland structure, ground flora impoverishment, and difficulties for regeneration.

2.5 Flood prevention measures, river control and canalization, leading to loss of dynamic disturbance-succession systems and invertebrate communities, as well as possible reductions in the extent of individual sites.

2.6 Constraints on the spread of woodland from conservation sites onto adjacent ground from agriculture, industrial or residential development, leading to greater uniformity of structure across the site.

2.7 Poor water quality arising from eutrophication, industrial effluents or rubbish dumping leading to changes in the composition of the ground flora and invertebrate communities.

2.8 Invasion by non-native species which alter vegetation composition and lower conservation value (e.g. Indian Balsam, *Impatiens glandulifera*); air pollution which may influence particularly bryophyte and lichen communities; and diseases such as *Phytophthora* root disease of Alder.

2.9 Climate change, potentially resulting in changes in the vegetation communities.

3. National Action Plan Objectives and Targets

3.1 The targets established in this plan are based on the objective of maintaining the current extent of semi-natural wet woodlands and encouraging a balance of appropriate management regimes (for example re-establishment of natural hydrological systems by blocking drains or removing unnecessary embankments) within regions across the distribution of the type. This will encourage the range of characteristic associated species, communities and ecological/hydrological processes to persist. The restoration targets are based on the desirability of restoring some of the former areas of ancient semi-natural wet woodlands (around 10%) which have become dominated by non-native species since World War II. Creation targets aim to encourage the expansion of wet woodland by encouraging natural colonisation and by planting using species mixtures of site-native and local genetic provenance.

3.2 The targets will require review and adjustment during the course of the plan. As an early step in plan implementation more precise estimates of extent, and distribution of wet woodland will need to be determined. Criteria for determining the appropriate balance of different management regimes; suitable areas for woodland expansion and restoration

(including creation of wet woodland within other woodland types) will also need to be developed.

3.3 Maintain current area (currently estimated at 24,000-30,000 ha) of ancient semi-natural wet woodland and total area of the type.

3.4 Initiate measures intended to achieve favourable conditions in 100% of wet woodlands within SSSI/ASSI and Special Areas of Conservation and in 80% of the total resource by 2004, and achieve favourable conditions over 70% of the designated sites and 50% of the total resource by 2010.

3.5 Initiate restoration of 3,200 ha to native wet woodland. Complete establishment of half of this by 2010 and all of it by 2015.

4. Regional Status

Wet woodland in Thames Region is highly fragmented and occurs in all LEAP areas. Catchments with significant quantities of wet woodland, dominated by either Alder or Willow, include the Kennet, Colne and Wey. Sites are so small and fragmented that there is no information currently available on the area of this habitat extant within the region. Groundwater seepages need surveying to identify flagship species at these sites.

5. Regional Priority Actions & Actions So Far

Wet Woodland Habitat Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.5	Evaluate implications of water level management plans for the expansion, restoration and management of these woods and seek changes as appropriate.			✓	✓						✓		✓						

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Water Level Management Plans produced for SSSIs containing wet woodland including Frilford Heath, Cothill Fen, and Kennet Valley Alderwoods.
- Habitat Directives Review for Cothill Fen and Kennet Valley Alderwoods.

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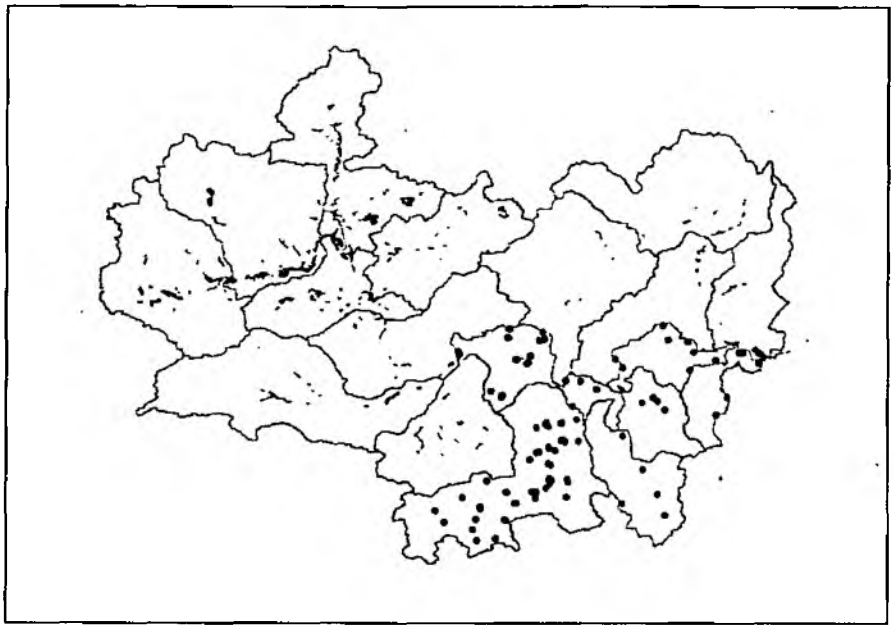
COASTAL AND FLOODPLAIN GRAZING MARSH



1. National Status

1.1 Grazing marsh is defined as periodically inundated pasture, or meadow with ditches which maintain the water levels, containing standing, brackish or fresh water. The ditches are especially rich in plants and invertebrates. Almost all areas are grazed and some are cut for hay or silage. Sites may contain seasonal water-filled hollows and permanent ponds with emergent swamp communities, but not extensive areas of tall fen species like reeds; although they may abut fen and reed swamp communities.

1.2 The exact extent of grazing marsh in the UK is not known but it is possible that there may be a total of 300,000 ha. England holds the largest proportion with an estimate in 1994 of 200,000 ha. However, only a small proportion of this grassland is semi-natural, supporting a high diversity of native plant species (5,000 ha in England, and an estimated 10,000 ha in the UK).

1.3 Grazing marshes are particularly important for the number of breeding waders such as Snipe *Gallinago gallinago,* Lapwing *Vanellus vanellus* and Curlew *Numenius arquata* they support. Internationally important populations of wintering wildfowl also occur including Bewick Swans *Cygnus bewickii* and Whooper Swans *Cygnus cygnus.*

2. Factors Causing Loss or Decline

2.1 Losses in the UK have been significant in the last 60 years. Losses of grazing marsh from the early 1930's to the mid-1980's include 64% in the Greater Thames, 48% in Romney Marsh and 37% in Broadlands. Some of the last remaining unimproved grasslands are highly sensitive to increased nutrient loadings. Unless conservation measures to retain this habitat are in place, with particular emphasis on the maintenance of water levels, flooding regimes and appropriate grazing or cutting, most sites will deteriorate.

3. National Action Plan Objectives and Targets

3.1 Maintain the existing habitat extent (300,000 ha) and quality.

3.2 Rehabilitate 10,000 ha of grazing marsh which has become too dry, or is intensively managed by the year 2000. This would comprise 5,000 ha already targeted in ESAs with an additional 5,000 ha.

3.3 Begin creating 2,500 ha of grazing marsh from arable land in targeted areas, in addition to that which will be achieved by existing ESA schemes, with the aim of completing as much as possible by the year 2000.

4. Regional Status

Floodplain grazing marsh has become highly fragmented in Thames Region over the last 50 years due to agricultural improvement and development. Important areas still remain e.g. within the Upper Thames tributaries ESA, and several large-scale initiatives are underway to restore grazing marsh in these areas. Important coastal grazing marsh sites remain in the east of the region alongside the Thames estuary at Rainham and Erith.

5. Regional Priority Actions & Actions So Far

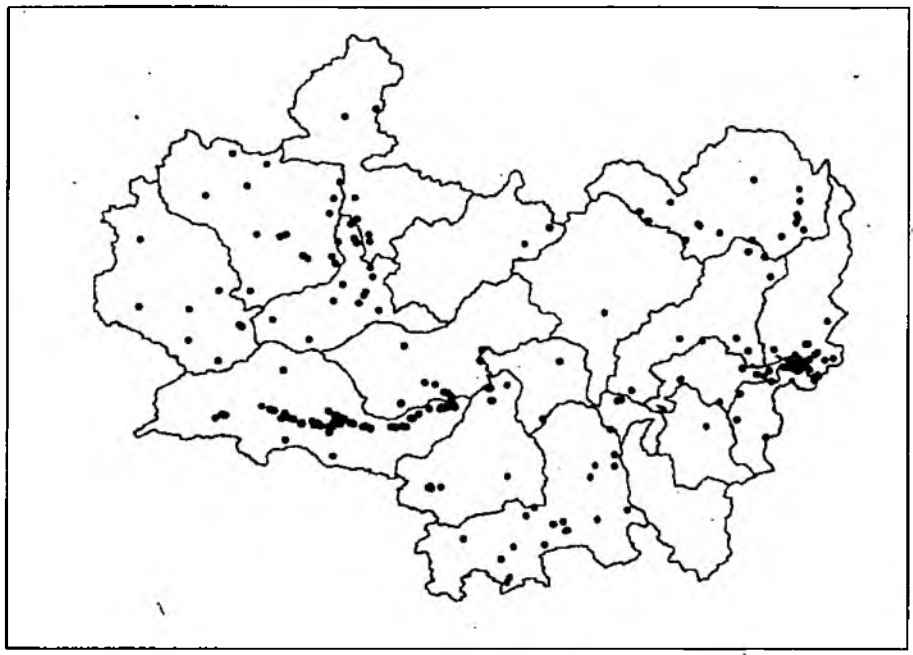
Coastal and Floodplain Grazing Marsh Habitat Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Rodina, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.3	Continue to ensure that flood defence works are undertaken in an ecologically sensitive manner.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5.2.1	Promote the existing programme of water level management plans for grazing marsh SSSIs.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5.2.4	Avoid the reseeding of dredged materials where these are unavoidably deposited on grazing marsh areas.																		
5.2.5	Encourage the production of WLMPs on non-designated priority sites.	✓									✓							✓	
5.2.6	Apply the principles of the Water Directive Framework to the quality and quantity of water in grazing marshes.																		
5.2.8	Prevent the loss of grazing marsh by encouraging the uptake of agri-environment schemes.																		
5.2.10	Implement actions in LEAPs for the maintenance and restoration of hydrological conditions in wetlands.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Grazing marsh restoration projects implemented at Otmoor and Marsh Gibbon on the Oxon/Bucks Ray and at Sherborne on the Windrush.
- Water Level Management Plans produced for many grazing marsh sites including Oxford Meadows, Otmoor etc.
- Floodplain restoration, EU LIFE project co-funded with RSPB in Cherwell catchment.
- Re-instated approximately 60 ha grazing marsh including installing a new water supply and water level control system at Ingrebourne Marshes SSSI.
- Maintenance of several kms of ditches and water level raising at Inner Thames Marshes SSSI.

REEDBEDS



1. National Status

1.1 Reedbeds are wetlands dominated by stands of the Common Reed *Phragmites australis*, wherein the water table is at or above ground level for most of the year. They tend to incorporate areas of open water and ditches, and small areas of wet grassland and carr woodland may be associated with them. There are about 5000 ha of reedbeds in the UK, but of the 900 or so sites contributing to this total, only about 50 are greater than 20 ha, and these make a large contribution to the total area.

1.2 Reedbeds are amongst the most important habitats for birds in the UK. They support a distinctive breeding bird assemblage including five nationally rare Red Data Birds the Bittern *Botaurus stellaris*, Marsh Harrier, *Circus aeruginosus*, Cetti's Warbler *Cettia cetti*, Savi's Warbler *Locustella lusciniodes* and Bearded Tit *Panurus biarmicus*. Provide roosting and feeding sites for migratory species (including the globally threatened Aquatic Warbler *Acrocephalus paludicola)* and are used as roost sites for several raptor species in winter.

1.3 Five GB Red Data Book invertebrates are also closely associated with reedbeds including the Reed Leopard Moth *Phragmataecia castaneae* and a rove beetle *Lathrobium rufipenne*.

2. Factors Causing Loss or Decline

2.1 Small total area of habitat and critically small population sizes of several key species dependent on the habitat.

2.2 Loss of area by excessive water abstraction and, in the past, land drainage and conversion to intensive agriculture.

2.3 Lack of or inappropriate management of existing reedbeds leading to drying, scrub encroachment and succession to woodland.

2.4 Most of the important reedbeds are found on the coast of eastern England, where relative sea-level rise is predicted to lead to the loss of significant areas of habitat.

2.5 Pollution of freshwater supplies to the reedbed: siltation may lead to drying; toxic chemicals may lead to loss of fish and amphibian prey for key species; accumulation of poisons in the food chain and eutrophication may cause reed die-off.

3. National Action Plan Objectives and Targets

3.1 Identify and rehabilitate by the year 2000 the priority areas of existing reedbed (targeting those of 2 ha or more) and maintain these thereafter by active management. This target should provide habitat for 40 pairs of Bittern and provide optimum conditions for other reedbed species and should be targeted primarily in the south-east of Britain.

3.2 Create 1,200 ha of new reedbed on land of low nature conservation interest by 2010. The creation of new reedbed should be in blocks of at least 20 ha with priority for creation in areas near to existing habitat, and linking to this wherever possible. The target should provide habitat for an estimated 60 breeding pairs of Bitterns boosting numbers to previous levels. It should be targeted in the south-east of Britain.

4. Regional Status

There are large numbers of reedbeds in Thames Region, but the great majority are very small and drying out. The most important sites lie in the Kennet Valley, eg at Thatcham Reedbeds and in the east of the region at Rye Meads and Ingrebourne Marshes.

5. Regional Priority Actions & Actions So Far

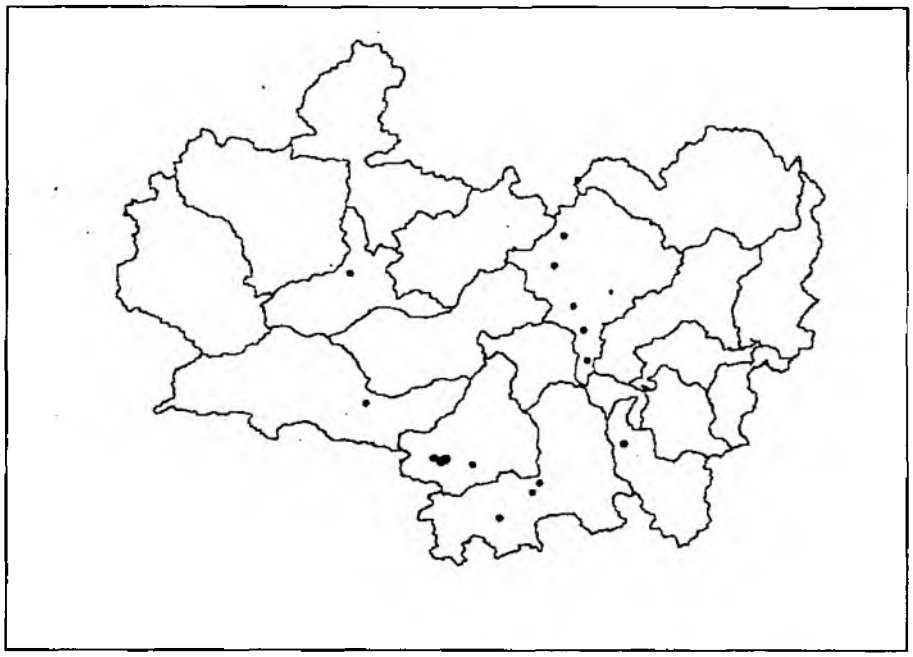
Reedbeds Habitat Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
4.2	Create new reedbed on land of low nature conservation interest in blocks of at least 20 ha with priority for creation in areas near to existing habitat, and linking to this wherever possible.							✓		✓									
5.1.5	Encourage the development of both sympathetic water abstraction, water level management policies and of appropriate coastal management plans in order to protect existing reedbeds.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions So Far

- Implementation of Thatcham Reedbeds Enhancement Project and WLMP.
- Creation of 22 ha reedbed at Otmoor RSPB Reserve.
- Creation of 5 ha reedbed at EA-owned Rye Meads Reserve.
- Production of Water Level Management Plans for numerous SSSIs containing reedbeds eg. Thatcham Reedbeds, Woolhampton Reedbed, Cothill Fen.
- Design completed for 37 ha of reedbed to be incorporated into Maidenhead, Windsor and Eton Flood Alleviation Scheme.
- Extensive reedbed planted on tidal Thames foreshore at Greenwich as part of Millennium Dome development.

FENS



1. National Status

1.1 The UK is thought to host a large proportion of the fen surviving in the EU. As in other parts of Europe, fen vegetation has declined dramatically in the past century.

1.2 Fens are peatlands which receive water and nutrients from the soil, rock and ground water as well as from rainfall: they are minerotrophic. Two types of fen can broadly be distinguished: topogenous and soligenous. Topogenous fens are those where water movements in the peat or soil are generally vertical. They include basin fens and floodplain fen. Soligenous fens, where water movements are predominantly lateral, include mires associated with springs, rills and flushes in the uplands, valley mires, springs and flushes in the lowlands, trackways and ladder fens in blanket bogs and laggs of raised bogs.

2. Factors Causing Loss or Decline

Fens are dynamic semi-natural systems and in general, management is needed to maintain open-fen communities and their associated species richness. Without appropriate management (e.g. mowing, grazing, burning, peat cutting, scrub clearance), natural succession will lead to scrub and woodland forming.

3. National Action Plan Objectives and Targets

3.1 Identify priority fen sites in critical need of, and initiate, rehabilitation by the year 2005. All rich fen and other sites with rare communities should be considered.

3.2 Ensure appropriate water quality and water quantity for the continued existence of all SSSI fens by 2005.

4. Regional Status

There are relatively few fen sites in Thames Region and all are small in size. Many of these are designated as SSSIs and Cothill Fen in Oxfordshire is a candidate Special Area of Conservation (SAC) under the Habitats Directive.

5. Regional Priority Actions & Actions So Far

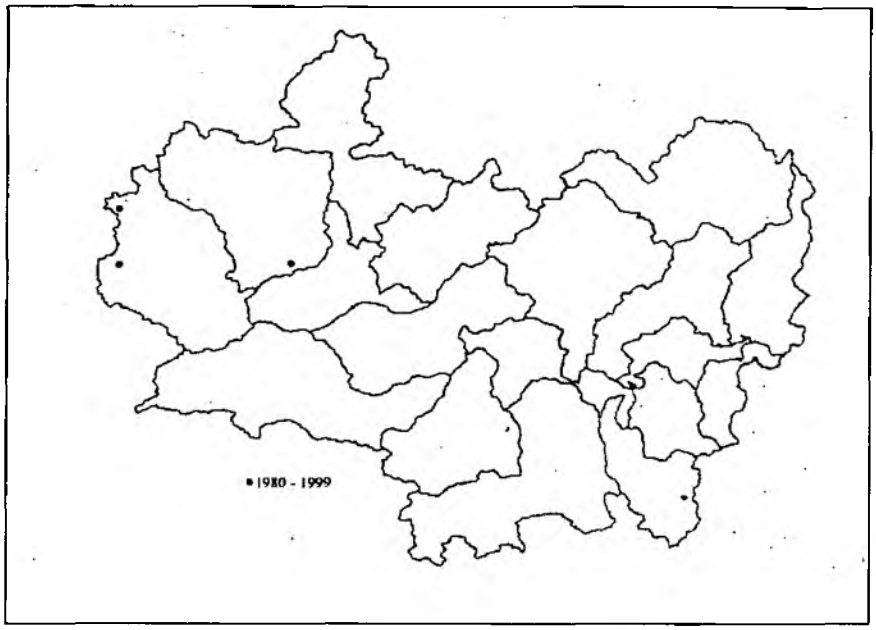
Fens Habitat Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.2	Review water resource uses and aim to meet new targets where they affect fens.																		
5.1.4	Prepare and implement water level management plans for fen sites.			✓	✓						✓		✓						

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Habitats Directive review of consents affecting Kennet and Lambourn Floodplain SAC and Cothill Fen SAC.
- Water Level Management Plans written for Kennet and Lambourn Floodplain, Cothill Fen, Barrow Farm Fen etc.

LESSER HORSESHOE BAT *Rhinolophorus hipposideros*



1. National Status

1.1 The Lesser Horseshoe Bat was originally a cave-roosting bat, although most summer maternity colonies now use buildings, particularly old large houses and farm buildings. Most still hibernate in underground sites such as caves. Females forage within 2-3km of the maternity roost, feeding on insects taken in flight in mixed woodland, hedgerows and treelines.

1.2 In Britain, Lesser Horseshoe Bat is now found only in south-west England and Wales. It was formerly present in south-east England and in the Midlands. Current estimates suggest a UK population of 14,000 divided equally between Wales and England. About 230 summer (or all-year) roosts are known and about 480 hibernation roosts. Of the latter, only 20% are used by more than 10 bats. The Lesser Horseshoe Bat is widespread throughout central and southern Europe, but has undergone severe decline in the northern part of its range.

1.3 This species is included in Appendix II of the Bonn Convention (and its Agreement on the conservation of Bats in Europe) and Appendix II of the Bern Conservation Convention (and Recommendation 36 on the Conservation of Underground Habitats). It is also listed on Annex II and IV of the EC Habitats and Species Directive. It is protected under Schedule 2 of the Conservation (Natural Habitats, etc.) Regulation 1994 (Regulation 38) and Schedule 5 of the Wildlife and Countryside Act 1981. The 1996 IUCN Red list of Threatened Animals classifies this species as vulnerable (VU A2c).

2. Factors Causing Loss or Decline

2.1 Loss of, or damage, to summer maternity roost sites. This is mainly due to deterioration and unsympathetic renovation of old buildings and barns, although identifying small colonies can be problematic.

2.2 Loss of, or damage to, underground sites used mainly for hibernation, often through blocking of old mines of similar sites for safety purposes, and increased leisure or 'casual' use.

2.3 Further loss, damage and fragmentation of woodland foraging habitats, old hedgerows and tree lines, and other appropriate habitats.

3. National Action Plan Objectives and Targets

3.1 Maintain the current range and population.

3.2 In the long term, expand the current range through natural recolonisation and landscape enhancement, into areas where research shows that climatic and landscape features are suitable.

4. Regional Status

The Lesser Horseshoe Bat is a very rare bat in the Thames Region. It is found in only one site regularly and that is a disused railway tunnel at Chipping Norton.

5. Regional Priority Actions and Actions So Far

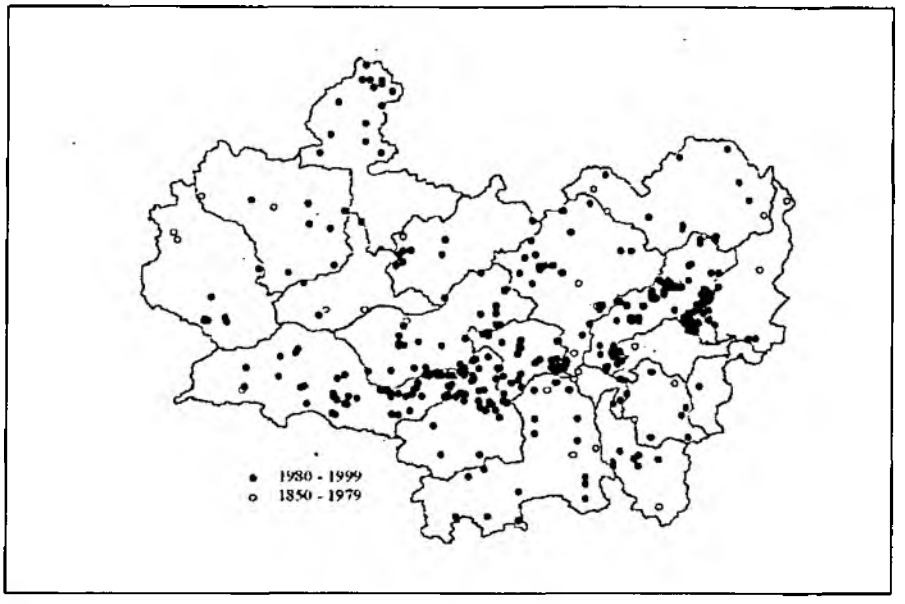
Lesser Horseshoe Bat Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.1	Pursue the principles and requirements of the Agreement on the Conservation of Bats in Europe.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions So Far

- None.

PIPISTRELLE BAT *Pipistrellus pipistrellus*



1. National Status

1.1 Although it remains the most abundant and widespread bat species in the UK, the Pipistrelle is thought to have undergone a significant decline in numbers this century. Estimates from the National Bat Colony Survey suggest a population decline of approximately 70% between 1978 and 1993. The current pre-breeding population estimate for the UK stands at approximately 2,000,000. The problems of estimating populations trends have been compounded by the recent discovery that there may be two distinct species of Pipistrelle bat in the UK.

1.2 The Pipistrelle is listed on Appendix III of the Bern Convention, Annex IV of the EC Habitats Directive and Appendix II of the Bonn Convention (and is included under the Agreement on the Conservation of Bats in Europe). It is protected under Schedule 2 of the Conservation (Natural Habitats, etc.) Regulations, 1994 (Regulation 38) and Schedules 5 and 6 of the WCA 1981 and Schedules 5 and 6 of the Wildlife (Northern Ireland) Order 1985.

2. Factors Causing Loss or Decline

2.1 Reduction in insect prey abundance, due to high intensity farming practices and inappropriate riparian management.

2.2 Loss of insect-rich feeding habitats and flyways, due to loss of wetlands, hedgerows and other suitable prey habitats.

2.3 Loss of winter roosting sites in buildings and old trees.

2.4 Disturbance and destruction of roosts, including the loss of maternity roosts due to the use of toxic timber treatment chemicals.

3. National Action Plan Objectives and Targets

3.1 Maintain existing populations and range of Pipistrelles.

3.2 Restore populations to pre-1970 numbers.

4. Regional Status

Pipistrelle bats are by far the most common and widespread species of bat found in the Region. Due to the confidentiality of the data, the Agency have had difficulty in obtaining all relevant records, but it should be assumed that this species occurs in many more locations than are shown on the map opposite.

5. Regional Priority Actions & Actions So Far

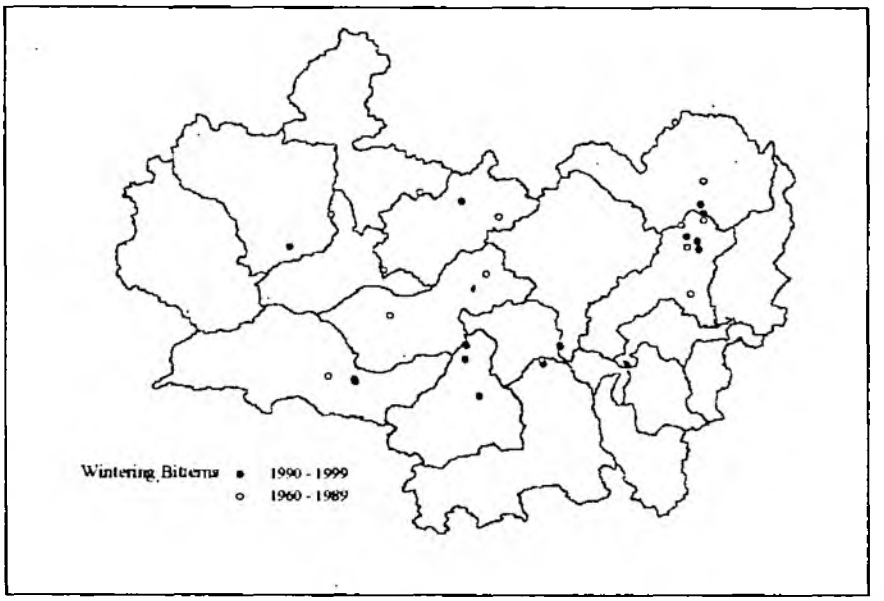
Pipistrelle Bat Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.1	Encourage water quality levels which will help support populations of aquatic insects on which Pipistrelles feed.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Input to AMP3 process.

BITTERN *Botaurus stellaris*



1. National Status

1.1 The Bittern is a declining, localised and rare breeding species. It is confined almost entirely to lowland marshes in Norfolk, Suffolk and Lancashire, dominated by the common reed *Phragmites australis,* where it feeds principally on fish and amphibians. The UK population had declined to fifteen or sixteen booming males in 1994 from a peak of 70 pairs in the late 1960s, when it bred in eight counties.

1.2 The Bittern is listed on Annex I of the EC Birds Directive and Appendix III of the Bern Convention. It is protected in the UK under Schedule I of the WCA 1981 and Schedule I of the Wildlife (Northern Ireland) Order 1985.

2. Factors Causing Loss or Decline

2.1 Loss of suitable large reedbeds through seral succession, inappropriate management (particularly drainage and water abstraction) and fragmentation.

2.2 Degradation of habitat through water pollution, pesticide and heavy metal pollution.

2.3 Food availability, especially of eels, affected by inappropriate habitat management and pollution.

2.4 Salt water intrusion into coastal reedbeds.

2.5 Problems due to small population size.

3. National Action Plan Objectives and Targets

3.1 The Bittern has declined by over 50% in the past 25 years. The objectives of the plan are modest, and represent an aim of increasing the population level to a more sustainable level over the next 25 years in stages. This appears to be relatively easily achievable by restoring a small proportion of existing reedbeds and by creating new reedbeds (thus linking with the reedbed habitat plan).

3.2 To arrest the decline of the Bittern, maintaining at least 20 booming birds over the present range, and to start to increase the population and range before the year 2000.

3.3 Increase the population to about 50 booming males by 2010, by ensuring appropriate management of the existing 22 large reedbeds where Bittern once occurred.

3.4 Initiate work to secure the long-term future of Bitterns in the UK by providing suitable habitat for a population of not less than 100 booming males by 2020.

3.5 Encourage the creation of at least 1,200 hectares of reedbed in blocks of greater than 20 hectares at existing, former and new areas in England and Wales.

4. Regional Status

In winter, the Lee Valley is the best place in the country for Bitterns, with up to seven birds present and it could, with appropriate management, support breeding Bitterns. The largest areas of reedbed in the Lee Valley are at Rye Meads and this would be expected to be the favoured area. In recent years small numbers have been regularly recorded in the Kennet Valley during the winter months.

5. Regional Priority Actions & Actions So Far

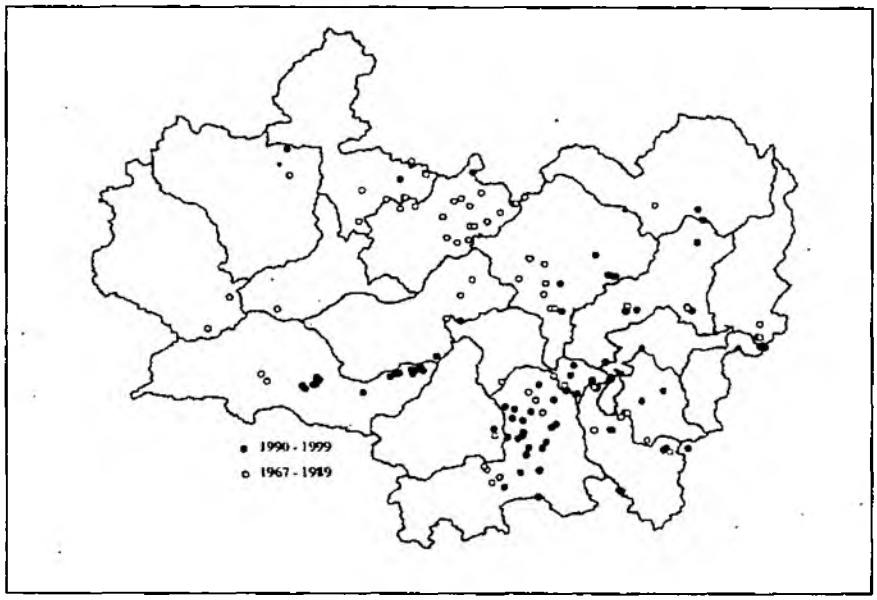
Bittern Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.1	Facilitate reedbed restoration through collaborative projects and appropriate wetland strategies, to maintain wet conditions and prevent scrub encroachment in existing reedbeds.				✓	✓		✓		✓						✓		✓	

☐ *Regional Priority Actions* ✓ = *Actions So Far*

6. Examples of Action So Far

- Thatcham Reedbeds enhancements implemented.
- 22 ha of reedbed lagoon constructed at Otmoor in collaboration with RSPB.
- 5 ha of reedbed created at EA-owned Rye Meads Reserve.
- 37 ha of reedbed designed into Maidenhead, Windsor and Eton Flood Alleviation Schemes.

REED BUNTING *Emberiza schoeniclus*



1. National Status

1.1 The Reed Bunting inhabits reedbeds and other wetland habitats, as well as drier farmland sites such as overgrown ditches and hedgerows. This species is found throughout Britain and Ireland, although it is scarcer in the uplands and the far north and west. There are also some gaps in distribution elsewhere but with no clear pattern. A decline in numbers has occurred in recent years. In Britain, BTO census results show a relatively high population level from the late 1960's to the mid 1970's, followed by a decrease of more than 50% to a new more stable lower level during the early 1980's. The Waterways Bird Survey, in particular, showed a steep decline from 1974 to 1983, but little change in numbers since then. The species also decreased in range by around 12% between the two breeding atlas periods (1968-72 and 1988-1991), with the UK population estimated at around 240,000 pairs during the latter period. It is not a species of conservation concern elsewhere in Europe, where it is common and widespread.

1.2 The Reed Bunting is protected under the Wildlife and Countryside Act 1981, the Wildlife (Northern Ireland) Order 1985 and the EC Birds Directive, and is listed on Appendix II of the Bern Convention.

2. Factors Causing Loss or Decline

2.1 The decline of the Reed Bunting has occurred at the same time as decreases in the numbers and/or range of a suite of other farmland birds, many of which share its diet of cereal, grass and wildflower seeds, and also feed their young on insects. It is therefore likely that its decline on farmland may be largely due to: changes in agricultural practices, particularly the increased use of pesticides and fertilisers; the switch from spring-sown to autumn-sown crops and the consequent loss of winter stubble fields; the more intensive use of grassland; and the general reduction in habitat diversity on farmland due to the loss of mixed farming and increased specialisation.

2.2 Deterioration of wet habitats may have had a serious effect on population. BTO census data suggests that numbers in wetland habitats have declined. Loss of small ponds, unsympathetic river engineering and the encroachment of scrub and carr are all likely to have had an adverse effect on both the breeding and wintering populations. The main period of recent land drainage was 1968-1985, when both arterial watercourses and field drains were modified on a large scale, leading to a loss in both the quantity and quality of the Reed Bunting's characteristic wetland habitats.

3. National Action Plan Objectives and Targets

3.1 In the short term, halt or reverse the decline in numbers of the Reed Bunting by the year 2003 so that the Breeding Bird Survey index is at least at 1996 levels.

3.2 In the long term, see a sustained recovery in numbers so that the BBS index is at least at 50% higher than 1996 levels.

4. Regional Status

The Reed Bunting is widespread throughout the Region, and there are likely to be many more recent breeding records than those shown on the map opposite.

5. Regional Priority Actions & Actions So Far

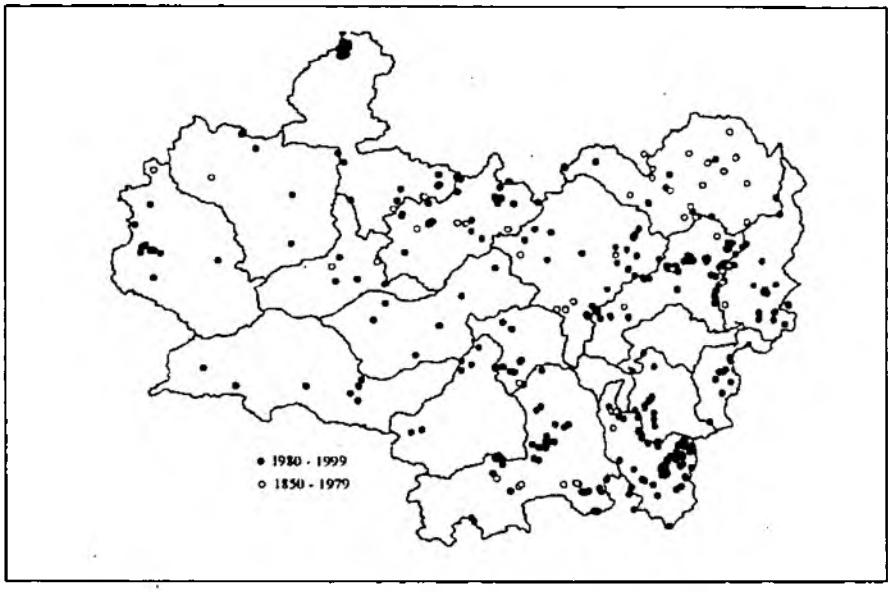
Reed Bunting Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.4	Promote sympathetic management of watercourses for reed bunting.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5.4.3	Promote advice on the sympathetic management of freshwater wetlands and farmland watercourses to landowners and managers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions So Far

- Production of conservation guidelines for Flood Defence in Thames Region.

GREAT CRESTED NEWT *Triturus cristatus*



1. National Status

1.1 The Great Crested Newt is still quite widespread in Britain. It is widespread but local in Scotland, where there are fewer than 1000 individuals. The species may be numerous locally in parts of lowland England and Wales but is absent or rare in Cornwall and Devon. It is absent from Northern Ireland.

1.2 The species has suffered a decline in recent years with studies in the 1980's indicating a national rate of colony loss of approximately 2% over five years. It is estimated that there are a total of 18,000 ponds containing Great Crested Newts within Britain, although only 3,000 of these have been identified. The British population is amongst the largest in Europe, where it is threatened in several countries.

1.3 The Great Crested Newt is listed on Annexes II and IV of the EU Habitats Directive and Appendix II of the Bern Convention. It is protected under Schedule 2 of the Conservation (Natural Habitats, etc.) Regulations, 1994, (Regulation 38), and Schedule 5 of the WCA 1981.

2. Factors Causing Loss or Decline

2.1 Loss of suitable breeding ponds, caused by water table reduction, in-filling for development, farming, waste disposal, neglect or fish stocking and the degradation, loss and fragmentation of terrestrial habitats.

2.2 Pollution and toxic effects of agro-chemicals.

3. National Action Plan Objectives and Targets

3.1 Work in the early 1980's documented a 2% decline in the number of ponds in the UK every five years. A more recent report suggests that 42% of the Great Crested Newt populations in the London area have been lost in 20 years. Assuming a 0.4-2% annual loss of ponds, and assuming 18,000 populations, then between 72-360 populations are being lost each year. A target of 100 re-colonisations will offset these losses. This represents new ponds required to offset losses due to neglect and should be in addition to preventing site loss through development.

3.2 Where feasible restore populations to 100 unoccupied sites each year for the next five years, creating new ponds and managing habitat where necessary.

3.3 Maintain the range distribution and viability of existing Great Crested Newt populations.

4. Regional Status

Great Crested Newts are widespread but localised in Thames Region. The region contains two candidate SAC's designated wholly or partly for their Great Crested Newt populations, namely Little Wittenham and Mole Gap to Reigate Escarpment.

5. Regional Priority Actions & Actions So Far

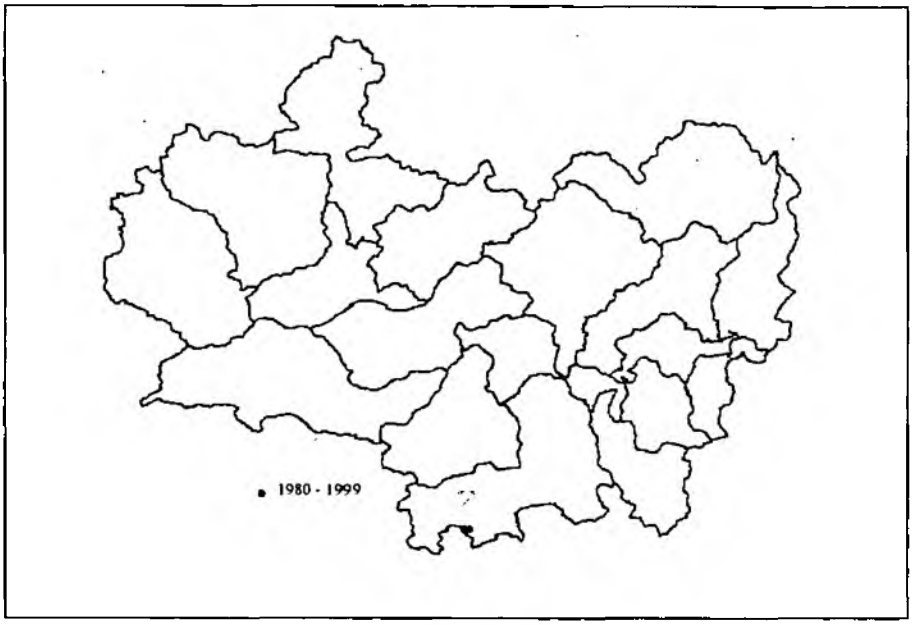
Great Crested Newt Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.4.1	Publish guidance for LAs, developers, land managers and others on legal obligations for the species, local management and, where appropriate, translocation techniques for the species.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions So Far

- Several ponds created every year.
- Habitat creation for Great Crested Newt carried out at Little Wittenham SAC.
- Co-funded the Surrey Wildlife Trust Great Crested Newt Survey and the development of a distribution database.

SPANGLED DIVING BEETLE *Graphoderus zonatus*



1. National Status

1.1 The Spangled Diving Beetle is known to occur naturally in Britain only in Woolmer Forest, North Hampshire. Within the Woolmer Forest area, adults occur in a wide range of pools, most of which are relatively recent in origin, and which vary considerably in vegetation, pH, depth and degree of permanence. These include a deep, permanently flooded pond, with its bottom covered by *Sphagnum,* created by peat cutting in 1895; pools resulting from military activities; and pools dug as breeding sites for Natterjack Toads. Several of the pools receive inflows and are less acidic, and one has been limed. These pools have in common the absence of fish. Teneral adults of the beetle have been found in four of these ponds, indicating successful breeding. Woolmer Pond was excavated in 1986 and 1993 to recreate its mere structure. In the following years larvae were present in the pond from April to July, with third instars into August. Newly emerged adults occurred at the end of June, having pupated at the bases of rush tussocks. Adults may overwinter out of the water. In captivity young larvae feed on Cladocera, and older larvae feed on Water Boatman and *Notonecta* nymphs; they show a preference for open water.

1.2 In Europe the Spangled Diving Beetle has two sub-species. The nominate form extends from south and central Europe to Mongolia, whilst *G. z. verrucifer* is boreo-alpine, extending from Scandinavia to northern Siberia and Italy. In mainland Europe the beetle occurs in the exposed edges of wave-washed sandy lakes, amongst submerged vegetation with some peat substratum, usually in moorland. The British form is probably the nominate form; this is consistent with the confinement of the Spangled Diving Beetle to southern England, despite the abundance of apparently suitable habitats in Scotland

1.3 In Great Britain the Spangled Diving Beetle is currently classified as *Endangered.* It is given special protection under Schedule 5 of the Wildlife and Countryside Act 1981.

2. Factors Causing Loss or Decline

2.1 Desiccation of ponds, caused by low winter rainfall and, possibly, water abstraction.

2.2 Pollution by increased run-off from neighbouring roads, and leakage of effluent from a nearby pig farm.

2.3 Hydrological succession, leading to the loss of open water and eventually scrub encroachment.

2.4 Increases in pH, allowing colonisation by fish.

3. National Action Plan Objectives and Targets

3.1 Ensure that at least four sub-populations are maintained within the Woolmer Forest area by 2010.

4. Regional Status

As mentioned above, the Spangled Diving Beetle occurs in a range of ponds within Woolmer Forest in North Hampshire. The proposals for recovery are to maintain and enhance this population and to establish further populations at appropriate nearby sites, all of which are SSSIs. Potential sites include: The Moat Pond, Thursley, Small Flash, Churt Common, Linchborough Park Pond, Hampshire, Shortheath Common, Hampshire and Black Pond, Esher Common, Surrey.

5. Regional Priority Actions & Actions So Far

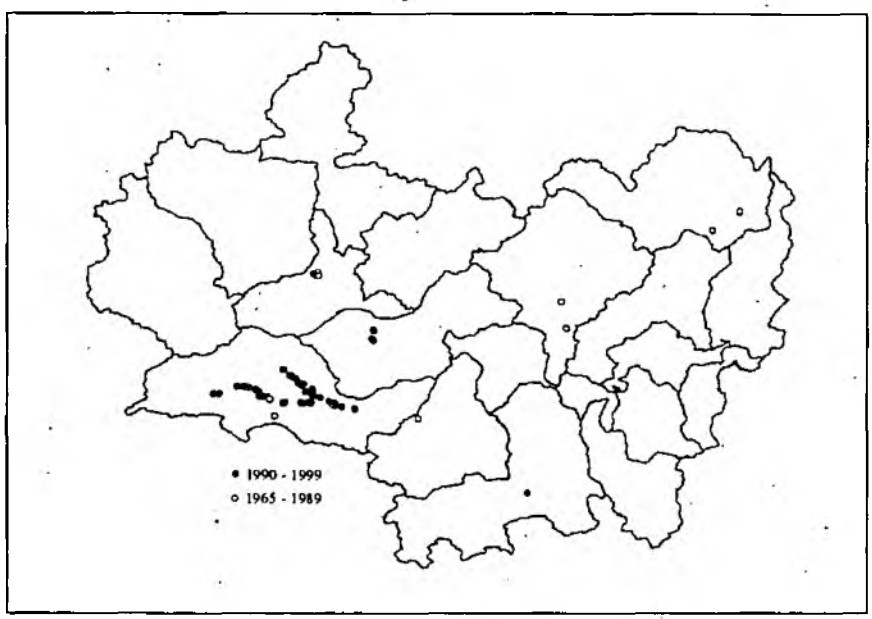
Spangled Diving Beetle Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.1	Undertake a review of water abstraction policies within the area where the species occurs.										■								
5.1.2	Address the requirements of this species in the LEAP process and in relevant WLMPs.										■								

■ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions So Far

- None.

DESMOULIN'S WHORL SNAIL *Vertigo moulinsiana*



1. National Status

1.1 This species was formerly considered threatened on a global scale but new records suggest that this is not the case. In the UK, Desmoulin's Whorl Snail is known from a series of sites in England stretching in a broad band from Dorset to Norfolk. It is restricted to long-established calcareous wetlands, usually where there is a tall growth of sedges (*Carex spp*), Saw-sedge (*Cladium mariscus*), Reed Sweet-Grass (*Glyceria maxima*) or Common Reed (*Phragmites australis*) and a wide variety of other emergent waterside vegetation.

1.2 This snail is listed on Annex II of the EU Habitats Directive, and is listed as rare in the GB Red List.

2. Factors Causing Loss or Decline

2.1 Destruction of wetlands.

2.2 Habitat degradation, particularly as a result of changes in hydrology.

3. National Action Plan Objectives and Targets

3.1 Maintain viable populations of the snail across its current range to ensure favourable conservation status.

3.2 Survey to determine the full extent of the snail's current distribution and precise habitat requirements.

4. Regional Status

Desmoulin's Whorl Snail occurs in several catchments in Thames Region and is almost certainly under-recorded. The most extensive populations are in the Kennet catchment, where it occurs frequently throughout the middle Kennet and Lower Lambourn floodplains.

5. Regional Priority Actions & Actions So Far

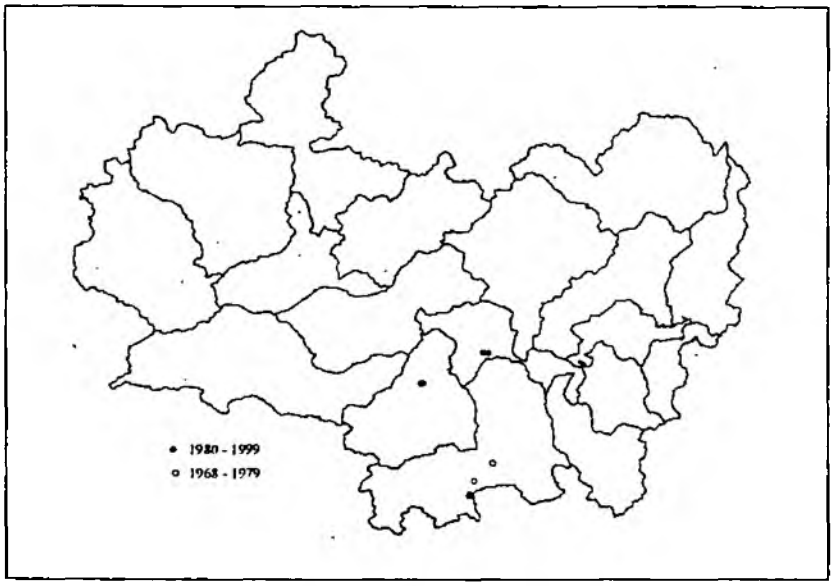
Desmoulin's Whorl Snail Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.3	Seek to ensure that local flood defence activities and water level management plans take account of the requirements of the species.			✓	✓												✓		
5.2.1	Seek to ensure that local water abstraction policies take account of the need to protect the snail.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions So Far

- Habitat Directive Review of Consents carried out for Kennet and Lambourn floodplain SAC and Cothill Fen SAC.
- Water Level Management Plans written for Kennet and Lamboum Floodplain, Cothill Fen and Thatcham Reedbeds.
- Habitat enhancements carried out at Thatcham Reedbeds and Cholsey Marsh for Desmoulin's Whorl Snail.
- Reinstatement of Sedge fen including ditching and water control units, carried out at Denham Lock Wood SSSI.

CRANEFLY *Lipsothrix nervosa*



1. National Status

1.1 *Lipsothrix nervosa* is a species of wet, rotting twigs and branches in seepages in deciduous woodland; it is believed to require continuous shade and a constant supply of rotting timber.

1.2 Though having a wide distribution which includes southern England, the south Midlands and South Wales, this species is very localised and for the most part occurs as small populations. Since the 19755/76 drought, and especially during the drought prone 1990s, the species has declined markedly in abundance and many of its known sites have dried out. The decline has particularly affected the eastern and central part of its range. There is an unconfirmed Scottish record. This species is endemic to the UK.

1.3 In Great Britain this species is classified as *Local.*

2. Factors Causing Loss or Decline

2.1 The loss or degradation of woodland seepages through woodland clearance, conifer afforestation, drainage or water abstraction.

3. National Action Plan Objectives and Targets

3.1 Maintain populations at all known sites.

4. Regional Status

Key populations in Thames Region occur at important wet woodland sites in the Loddon, Wey and Lower Thames LEAP areas, such as Windsor Forest, California Country Park-Everglades Swamp, Devil's Punchbowl, and Thursley Common.

5. Regional Priority Actions & Actions So Far

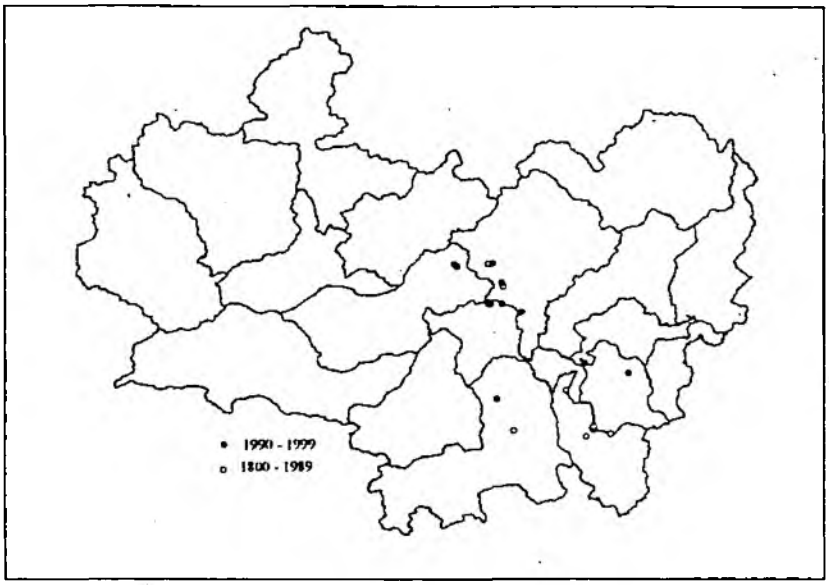
Cranefly Lipsothrix nervosa Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.2	Address the requirements of this species in the LEAP process and in relevant WLMPs.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions So Far

- None.

STARFRUIT *Damasonium alisma*



1. National Status

1.1 Starfruit occurs in muddy or gravel margins of shallow ponds with seasonally fluctuating water levels on commons or village greens. It was formerly recorded in several English counties northwards of Shropshire and Yorkshire but, by 1990, the species was restricted to three native sites, one in Surrey and two in Buckinghamshire. Populations of Starfruit are subject to wide fluctuations: one site in Buckinghamshire produced 300 plants in 1992, following a pond clearance, but a total of only 15 plants occurred in 1994 at two native sites – probably as a result of high winter rainfall.

1.2 The UK represents the northern edge of the species range, with a scattered distribution across Europe, from Spain to Asia Minor and North Africa. It is listed as endangered on GB Red List and is protected under Schedule 8 of the WCA 1981.

2. Factors Causing Loss or Decline

2.1 Neglect and mismanagement of ponds on grazed commons or greens, including over-shading by trees and shrubs, with associated collection of leaf litter and the excessive growth of submerged and marginal plants.

2.2 Loss of habitat through development, drainage and in-filling of pools and wet hollows.

2.3 Introduction of water level controls reducing seasonal fluctuations.

2.4 Introduction of invasive, non-native species of water plants.

3. National Action Plan Objectives and Targets

3.1 Safeguard populations at all known sites, including considering SSSI notification.

3.2 Establish suitable conditions and restore to a minimum of ten former sites by 2004.

3.3 Organise long-term management of the restored ponds to ensure the plant's future survival.

4. Regional Status

The Starfruit now occurs at a dozen sites in Bucks and Surrey. The site at New Pond, Gerrards Cross is considered to hold the only regularly occurring native population of this species in Buckinghamshire but here it is threatened by Swamp Stonecrop (*Crassula helmsii*). Inappropriate management is threatening its survival at other sites. Starfruit has been re-introduced at Black Park, near Slough.

5. Regional Priority Actions & Actions So Far

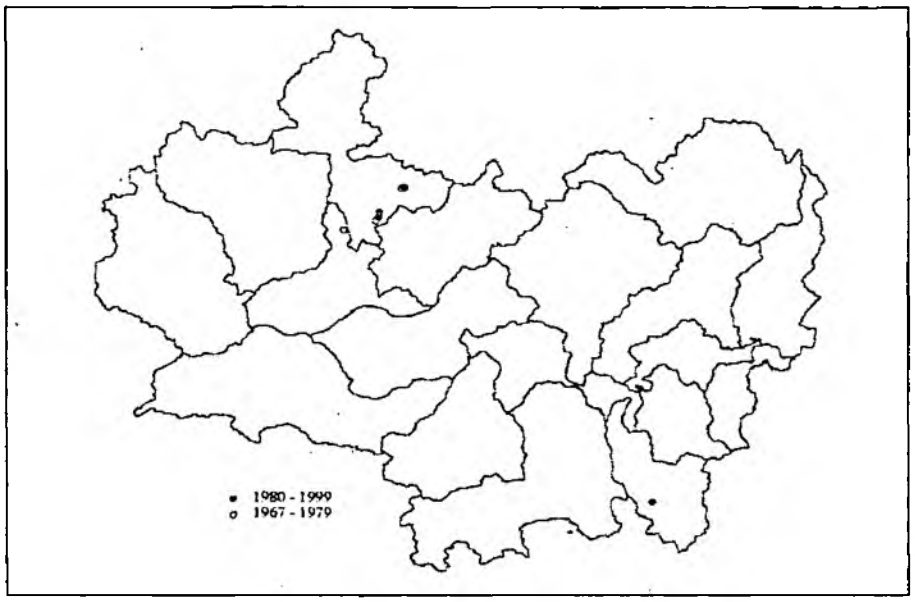
Starfruit Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.1	Promote measures to maintain water quality at all extant sites.						✓		✓		✓			✓	✓		✓		
5.2.3	Prepare and promote an appropriate water level management plan for sites containing this species.						✓		✓		✓			✓	✓		✓		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions So Far

- Starfruit survey carried out in various ponds in North East Area.
- Ongoing water quality monitoring being carried out in all 12 extant sites at Coleshill Ponds 1 and 2, Daisy Pond, Mannings Pond, Littleworth Common, Latchmoor Pond, New Pond, Brimmer Pond, Heath House Pond, Half Penny Pond, Chequers Pond and Black Park.
- Site Management Plans (including water level management) currently in preparation for all existing Starfruit sites, in collaboration with Plantlife.

TRUE FOX-SEDGE *Carex vulpina*



1. National Status

1.1 True Fox-sedge is a species of wet ditches and pond sides mainly on chalk or limestone, and often grows in standing water. It prefers open conditions and under shade it soon ceases to flower and dwindles to extinction.

1.2 Most of the extant populations for this species are in Kent and Sussex, but it is also found in Gloucestershire and along the River Ray in Oxfordshire. It may also still occur in South Yorkshire (the last record here was made in 1983). However, it is very difficult to distinguish True Fox-sedge from False Fox-sedge (*C.otrubae*) and the distribution of each species may therefore be somewhat confused. Despite this, it is certain that True Fox-sedge has undergone a marked decline since its taxonomic separation from False Fox-sedge. True Fox-sedge occurs in suitable situations throughout Europe and into Asia.

1.3 In GB this species is now classified as *Vulnerable*. It receives general protection under the Wildlife and Countryside Act 1981.

2. Factors Causing Loss or Decline

2.1 Although not well known, these are thought to include:

- Drying of sites due to drought, drainage and water abstraction.
- Wholesale clearance of ditches where it grows.
- Shading of sites due to growth of scrub and other tall vegetation.

3. National Action Plan Objectives and Targets

3.1 Ensure that viable, dynamic populations are maintained on all extant sites.

3.2 Restore populations at five suitable sites by 2003.

3.3 Establish an *ex-situ* programme to protect genetic diversity, create a reserve population and provide experimental material.

4. Regional Status

True Fox-sedge has a very sparse, widely scattered distribution in the Otmoor basin in Oxfordshire and also occurs further up in the Ray catchment at Blackthorn Fox Covert. The only other recently recorded location is near Newdigate, Surrey, in the upper Mole catchment.

5. Regional Priority Actions & Actions So Far

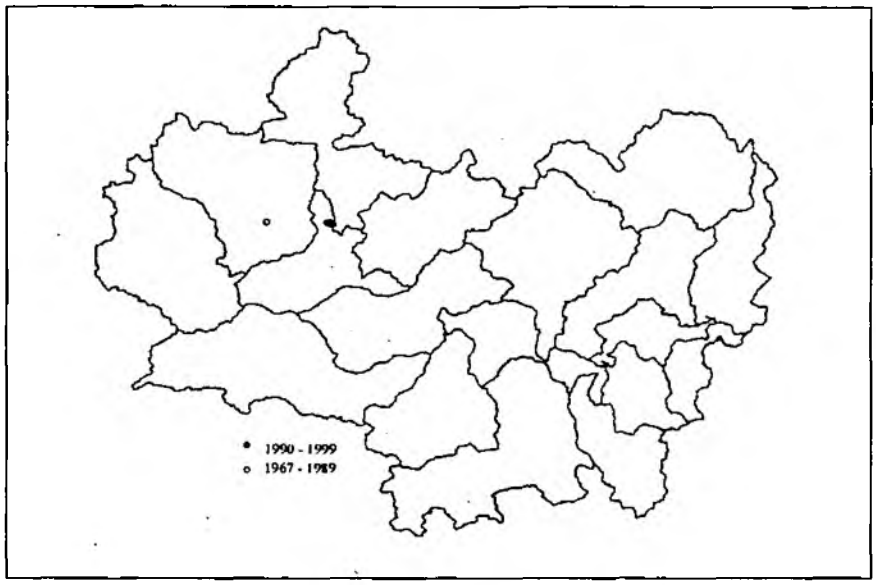
True Fox-sedge Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Reading, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.4	Ensure that extant and restored populations for True Fox-sedge are not threatened with inappropriate watercourse management.																		
5.2.5	Ensure that Local Environment Agency Plans and Water Level Management Plans take full account of the requirements of this species. In particular, ensure that no further sites for True Fox-sedge are lost through increases in levels of water abstraction.																		
5.4.2	As far as possible, ensure that all relevant agri-environment project officers, relevant drainage engineers and waterways managers are advised of locations of this species, its importance and management needed for its conservation.													✓					

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions So Far

- None.

CREEPING MARSHWORT *Apium repens*



1. National Status

1.1 Creeping Marshwort is a small, creeping umbellifer which grows in open, wet, usually base-rich permanent pasture subject to winter flooding. It occurs through central and southern Europe, and North Africa. This species has been recorded from sites in Oxfordshire and Buckinghamshire, Scotland, South east Yorkshire, Norfolk and Suffolk, with two putative sites in the Thames Valley persisting until 1960 and 1970. It is now restricted to two sites in the UK, both of which are in the Thames Region. One of these is a designated SSSI in Oxfordshire, where the population is thought to be approximately 100 plants.

1.2 Recent taxonomic investigations appear to have indicated that this species co-exists, but does not hybridise, with Fool's Water-cress (*Apium nodiflorum),* although the two species maybe almost indistinguishable in the field.

2. Factors Causing Loss or Decline

2.1 Agricultural intensification, including the use of herbicides, control of winter flooding, overgrazing and ploughing.

3. National Action Plan Objectives and Targets

3.1 Maintain the population at the two Oxfordshire sites.

3.2 Restore to two Thames Valley sites by 2005.

3.3 Identify suitable sites for re-introduction and encourage suitable management of former sites, particularly those in the Thames Valley, to encourage germination of any seed remaining viable.

4. Regional Status

Creeping Marshwort occurs at Port Meadow and Binsey Meadow, both on the outskirts of Oxford. There is a management group for the site at Port Meadow and the species has recently been translocated to six locations at Binsey Meadow.

5. Regional Priority Actions & Actions So Far

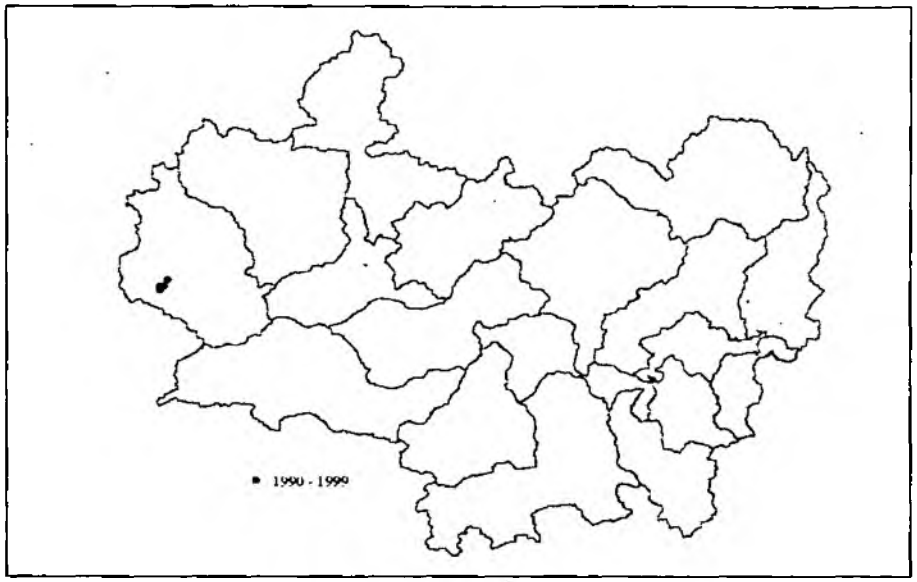
Creeping Marshwort Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Chenwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.2	Encourage the consideration of this species in water level management plans if this proves to be an important factor in its habitat requirements.	■		✓															

■ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions So Far

- Scrape created at Langel Common, Witney, to encourage re-colonisation by Creeping Marshwort.
- Population monitoring carried out at Port Meadow.
- Water Level Management Plan produced for Port Meadow.
- Habitats Directive Review of Consents carried out for Oxford Meadows SAC, including Port Meadow.

LESSER BEARDED STONEWORT *Chara curta*



1. National Status

1.1 Lesser Bearded Stonewort is a species of calcareous water on peaty or sandy substrates and may behave as an annual or perennial. On the West coast it is found in flooded dune-slacks and dune pools and on the exposed shores of machair lochs. Elsewhere it is found in limestone lochs, and more rarely in clay pits, old peat cuttings and ditches. It frequently grows on sand in fairly shallow water and may be exposed when water levels drop in summer. In this habitat it is probably a summer annual, but spreading mainly by bulbils. In limestone lochs it occurs in depths of up to 4.5m and frequently forms dense beds which are probably perennial.

1.2 Lesser Bearded Stonewort was once widespread in East Anglia. It is now thought to be extinct in the Fens, and has not been seen in the Norfolk Boards for at least 13 years. Elsewhere it has recently been discovered at several new sites, and is now known at between 30 and 35 British sites, with several additional records from Northern Ireland (a marked increase on the number of sites (24) indicated in the Red Data Book of British Stoneworts). Outside of East Anglia, the sites are widely scattered, with records from Cornwall, South Wales, Anglesey, Scotland (as far north as Shetland) and Northern Ireland. Most of the extant sites are near the coast. It appears to be relatively widespread in Ireland, and a few records exists from elsewhere in Northern Europe and North Africa.

1.3 In Great Britain this species is classified as *Near Threatened*. It receives general protection under the Wildlife and Countryside Act 1981.

2. Factors Causing Loss or Decline

2.1 The most significant threat is nutrient enrichment from agricultural run-off, particularly in Orkney and Northern Ireland. This would appear to lie behind the extinction of the Lesser Bearded Stonewort in the East Anglian Fens.

2.2 Invasion of scrub and other vegetation is a threat to several extant Lesser Bearded Stonewort sites including its dune slack sites.

2.3 It is thought that the following factors may also be involved at some sites, and these may require further investigation:

- Falling water-table levels are a persistent threat to Lesser Bearded Stonewort's dune-slack sites, a problem which is often a consequence of water abstraction.
- Algal blooms have been reported from at least one site in Cornwall, which may cause problems by smothering the colonies of Lesser Bearded Stonewort. The algal blooms may be a result of increased nutrients.

3. National Action Plan Objectives and Targets

3.1 Maintain viable populations at all extant sites.

3.2 Restore populations to three historic sites by 2005 focusing on the East Anglian Fens in order to restore its former range.

4. Regional Status

The Lesser Bearded Stonewort is found at several sites in the Cotswold Water Park. The sites are confidential as the landowner does not want to release the whereabouts of this species.

5. Regional Priority Actions & Actions So Far

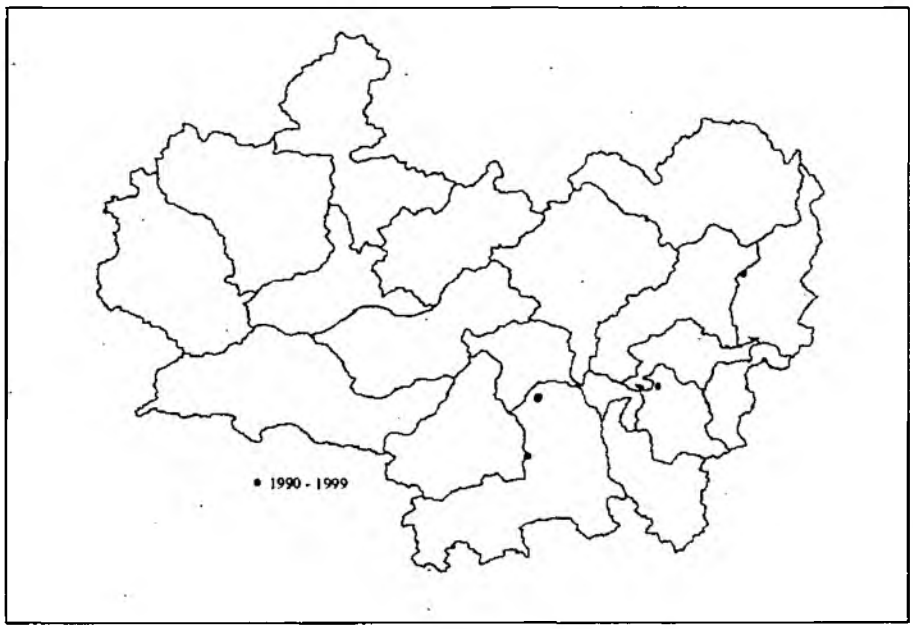
Lesser-Bearded-Stonewort Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1.1	Ensure that the LEAP process and Water Level Management Plans take full account of the requirements of this species.																		
5.2.5	Ensure that no further Lesser Bearded Stonewort sites are lost through increases in levels of water abstraction.																		
5.3.3	Assess the desirability and feasibility of introducing this species to suitable habitat in the vicinity of extant sites.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions So Far

- Cotswold Water Park Stonewort Survey funded by the Environment Agency.

VEILWORT *Pallavicinia lyellii*



1. National Status

1.1 Veilwort is a thalloid liverwort which grows mainly on bare, acid, peaty soils in lowland bogs and damp woodland. It is often associated with tussocks of *Molinia* and *Juncus* in the marginal areas of raised bogs. Other typical habitats include the bases of ditches and streams, and moist shaded sandstone rocks. Capsules are rarely produced and at some sites only one sex is present. Frequent associates include *Calypogeia* spp, *conocephalum conicum, Kurzia* spp, *Pellia epiphylla* and *Tetraphis pellucida.* Recent research has indicated that the persistence of Veilwort at one site alongside the faster-growing *Pellia epiphylla,* may be due to the colonisation of fresh surfaces by spores. Observations in Kent and Sussex suggest that this species is able to colonise available surfaces relatively rapidly.

1.2 This species has been recorded from 17 British sites since 1950 mainly in southern England and west Wales. During the last 200 years it has been recorded from 26 sites in Somerset, Hampshire, Isle of Wight, East and West Sussex, Surrey, Greater London, Berkshire, Essex, Suffolk, Ceredigion, Gwynedd, Greater Manchester, North Yorkshire and Cumbria. It has declined significantly in the Northern part of its range and is now thought to be extinct in Cumbria, North Yorkshire, Greater Manchester as well as in West Sussex. This species is known from approximately seven sites in the Irish Republic. It is widespread in Europe and occurs in all of the major continents apart from Antarctica, its scarcity in Britain in difficult to explain.

1.3 Veilwort is provisionally classified as *Vulnerable* in Great Britain. It receives general protection under the Wildlife and Countryside Act 1981. It is also classified as *Vulnerable* in Europe as a whole.

2. Factors Causing Loss or Decline

2.1 Land drainage may have been responsible for the loss of many populations of this species.

2.2 Over-shading due to scrub encroachment may be a threat to some populations, although at other localities Veilwort persists under heavily shaded conditions. Excessive exposure is also a potential threat.

2.3 Climbing and associated activities at some sandrock localities in southern England may have caused damage to Veilwort colonies.

3. National Action Plan Objectives and Targets

3.1 Maintain populations of Veilwort at all extant sites, and increase their extent where appropriate and feasible.

3.2 If feasible, re-establish populations of Veilwort from a possible soil spore-bank at three suitable historic sites by 2005.

3.3 Establish by 2005 *ex situ* stocks of this species to safeguard extant populations.

4. Regional Status

4.1 Veilwort has been recorded at five locations in the south and east of the Thames region in recent years.

5. Regional Priority Actions & Actions So Far

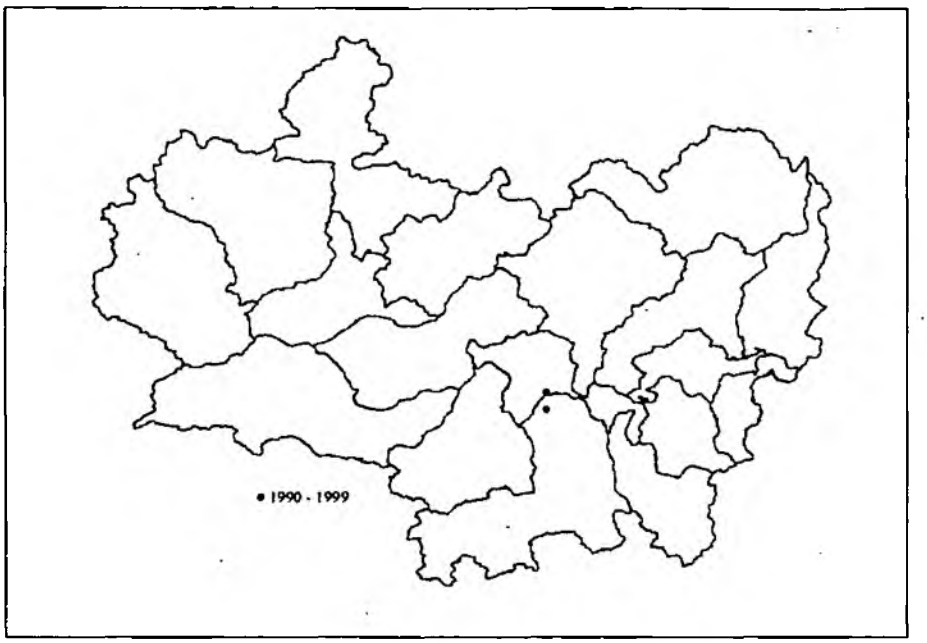
Veilwort Species Action Plan - Priority Actions For Thames Region . 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.2	Ensure that the habitat quality of extant sites is not adversely affected by land drainage activities.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions

- None.

ROYAL BOLETE *Boletus regius*



1. National Status

1.1 Royal Bolete is known mainly from grassy areas under broadleaved trees in ancient, deciduous woods, particularly Hornbeam or Beech woods but also Oak woods, on calcareous or acidic sandy soils. It is an ectomycorrhizal species which depends on old host trees. Many of its known host trees are old Oak pollards. It has attractive, edible fruiting bodies which generally appear between May and September, although it is not known how reliable its fruiting is. The fruiting bodies are reddish in colour with a cap 6-15cm in diameter.

1.2 In Britain, this species is only known from southern England. There is very little information on its historic distribution in Britain. It may always have been rare, but some experts suggest that it may have declined over the last 40 years. In recent years, it has only been seen at three sites: the New Forest, Ashgreen (Surrey) and Windsor Forest. Elsewhere, this species has been recorded in scattered locations across central Europe.

1.3 In Great Britain Royal Bolete is classified as *Endangered*. It is specially protected under Schedule 8 of the Wildlife and Countryside Act 1981. This species is also included on the provisional European red data list.

2. Factors Causing Loss or Decline

2.1 Whilst there is no firm evidence of a decline in the British population of Royal Bolete, it is likely that it has disappeared from some sites following losses of old pollard trees with which it is associated.

2.2 Other potential threats may include replacement of broadleaved woods with conifers, and enrichment of soils through air pollution and run-off of agricultural chemicals.

3. National Action Plan Objectives and Targets

3.1 Maintain populations at all extant sites, and increase the extent of populations at these sites where feasible.

3.2 Ensure a continuity of suitable host trees at all extant sites.

4. Regional Status

Two of the three UK records for Royal Bolete occur in Thames Region at Windsor Forest and Ashgreen. It is thought that this fungus is under-recorded and may be more common than is presently thought.

5. Regional Priority Actions & Actions So Far

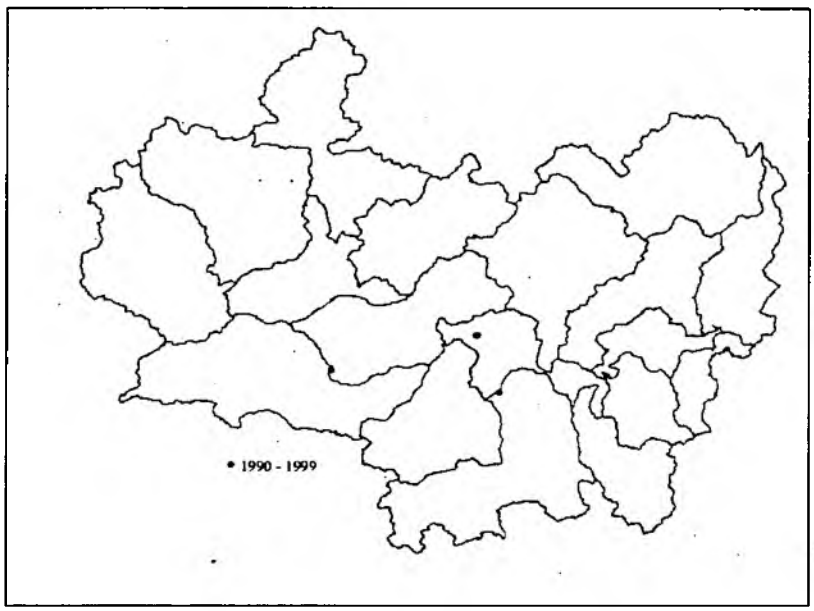
Royal Bolete Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.3	Assess the threats to known Royal Bolete sites posed by drift and run off of agricultural chemicals or by deposition of atmospheric nitrogen.								✓		✓								

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions So Far

- Habitats Directive Review of Consents underway for Windsor Forest SAC.

HYDNOID FUNGI



1. National Status

1.1 This group of stipitate hydnoid fungi are known as 'stalked tooth fungi' because the spore-bearing surface beneath the cap is composed of teeth-like projections. These fungi form mycorrhizal associations with either coniferous (C), typically Scots Pine in Britain, or broadleaved (B) trees (occasionally both). Although these are considered to be threatened in the UK, they are almost certainly under-recorded due to their inconspicuous nature and absence of people with skills to identify species in this group. There is some evidence that these species may be able to colonise new areas of suitable habitat in time. For example, tooth fungi have been recorded from some old pine plantations in Scotland.

1.2 Many of the species in this group have a strong hold in the Caledonian pine forests of Scotland including: *Phellodon melaleucus, Phellodon tomentosus, Bankera fuligineoalba, Phellodon confluens, Sarcodon imbricatus, Sarcodon glaucopus, Hydnellum ferrugineum, Hydnellum caeruleum, Hydnellum peckii, Hydnellum aurantiacum.* Other important areas for these fungi include the New Forest and Windsor Forest. Some of these are listed as occurring or having occurred in Wales (*Phellodon melaleucus, Phellodon tomentosus, Hydnellum ferrugineum, Hydnellum scrobiculatum*), and Northern Ireland (*Phellodon melaleucus*). Elsewhere records of these species are scattered throughout continental Europe and have also been recorded from North America.

1.3 In Great Britain *Hydnellum aurantiacum* is classified as *Critically Endangered; Bankera fuligineoalba, Hydnellum caeruleum, Hydnellum ferrugineum,* and *Sarcodon scabrosus* are all classified as *Endangered; Hydnellum concrescens, Hydnellum peckii, Hydnellum scrobiculatum, Hydnellum spongiospies, Phellodon confluens, Phellodon tomentosus, Phellodon melaleucus,* and *Sarcodon imbricatus* are all classified as *Vulnerable*. The recently discovered *Sarcodon glaucopus* probably merits *Endangered* status. All the species receive general protection under the Wildlife and Countryside Act 1981, although none are specifically protected under Schedule 8. All of these species are included in the provisional red list of European fungi.

2. Factors Causing Loss or Decline

2.1 Historic losses of native pine wood and wood pasture, and perhaps also recent losses of these habitats to agriculture and building development is likely to have reduced the UK population of these species.

2.2 Changing forest practices such as the introduction of clear-felling and underplanting with conifers may have resulted in the loss of some populations, although there is little evidence to support this. Losses of mature host trees to felling, or a break in the ecological continuity of mature trees on a site, may be a significant threat.

2.3 Nutrient enrichment of soils, especially by deposition of atmospheric nitrogen, in which these species occur may be a threat at some sites.

2.4 Invasion of Rhododendron is believed to be a threat on at least one site.

3. National Action Plan Objectives and Targets

3.1 Maintain population's at all extant sites.

3.2 By 2010, experimentally establish two new populations of one species in expanding native pine woods.

4. Regional Status

There are eight species of hydnoid fungi found in the Thames Region, seven of which were found in Great Windsor Park in 1999. These are: *Hydnellum concrescens, Hydnellum scrobiculatum, Phellodon confluens, Phellodon concrescens* and *Phellodon spongiospies. Hynellum scrobiculatum* also appears in the Lower Thames LEAP and *Phellodon tomentosus* also occurs in the Thames (Benson to Hurley) Pang & Wye.

5. Regional Priority Actions & Actions So Far

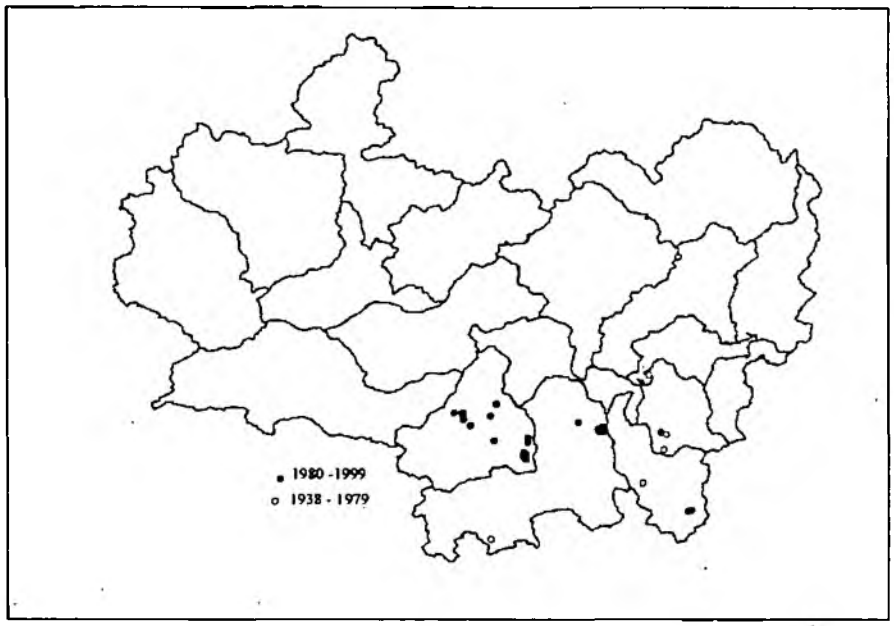
Hydnoid fungi Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.4	Assess the threats to sites for threatened hydnoid fungi posed by drift and run-off agricultural chemicals, or by deposition of atmospheric nitrogen. Where a threat is identified, seek to undertake remedial management to address the problem.								✓		✓								

☐ *Regional Priority Actions* ✓ = *Actions So Far*

6. Examples of Actions So Far

- Habitats Directive Review of Consents underway for Windsor Forest SAC.

PILLWORT *Pilularia globulifera*



1. National Status

1.1 Pillwort is a species of slightly acid to neutral lakes, ponds and marshlands where it grows on bare mud (often a clay or clay-sand substrate) subject to fluctuating water levels. Its former distribution was determined largely by the pattern of beneficial land uses which created the types of habitat in which it thrives. These include cattle ponds, curling ponds and mill ponds. More recently it has been found colonising disused sandpits where it grows in shallow water. It generally favours habitats with some disturbance.

1.2 Pillwort is an internationally threatened species that is declining throughout its range (Western Europe). The UK holds a substantial proportion of the world population. Recorded from around 250 ten km squares in the UK over the last 100 years, it has been seen in only 90 of these since 1970. However, it remains scattered in the UK, and there are still some substantial populations and several stronghold areas.

1.3 Pillwort is listed on Schedule 8 of the Wildlife (Northern Ireland) Order 1985, but it has not been seen since 1970 and may now be extinct in the province. It receives general protection under the Wildlife and Countryside Act 1981 in the rest of the UK, where it is now classified as *vulnerable*.

2. Factors Causing Loss or Decline

2.1 Nitrate/phosphate pollution with the associated increase in pH and the growth of competitive vegetation.

2.2 Abandonment of its main (sometimes artificial) habitats, with lack of disturbance being of particular importance.

2.3 Modification of water bodies for fishing, including permanent flooding, control of water levels and the creation of very steeply sloping banks on some lakes.

2.4 Decline of beneficial land uses e.g. curling, grazing, the digging of pits for sand and for paraffin-shale.

2.5 Drainage and ploughing of extant sites.

2.6 Introduction of competitive non-native species of non-marginal plants. Of particular concern is the invasive Australian Swamp Stonecrop (*Crassula helmsii*), which has a similar ecology to Pillwort.

2.7 Loss of pools created by mineral abstraction to landfill, afforestation and intense recreational uses, e.g. fisheries. Afforestation has destroyed Pillwort habitats at several sites in North Wales.

3. National Action Plan Objectives and Targets

3.1 Maintain the range of Pillwort and enhance the total UK population.

3.2 Facilitate natural colonisation of new sites.

3.3 Examine the feasibility of re-establishing Pillwort at further lost sites where conditions still appear to be favourable.

3.4 Establish an *ex-situ* programme to protect genetic diversity, create a reserve population and provide experimental material.

4. Regional Status

The Loddon and Wey catchments formerly contained significant populations of Pillwort but the species has declined over recent years in the Thames Region with the most recent records being for 1994 in the Mole catchment. Lack of survey data may obscure the actual distribution of the species.

5. Regional Priority Actions & Actions So Far

Pillwort Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.2.3	Encourage the creation of suitable habitats where opportunities arise in the vicinity of extant sites.																		
5.2.4	Ensure that Local Environment Agency Plans and Water Level Management Plans take full account of the requirements of this species.																		
5.2.5	Seek to maintain appropriate water level regimes when undertaking or authorising activities at extant sites.																		
5.4.1	Ensure that landowners and managers are aware of the presence of Pillwort and are advised on appropriate management.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Actions So Far

- None.

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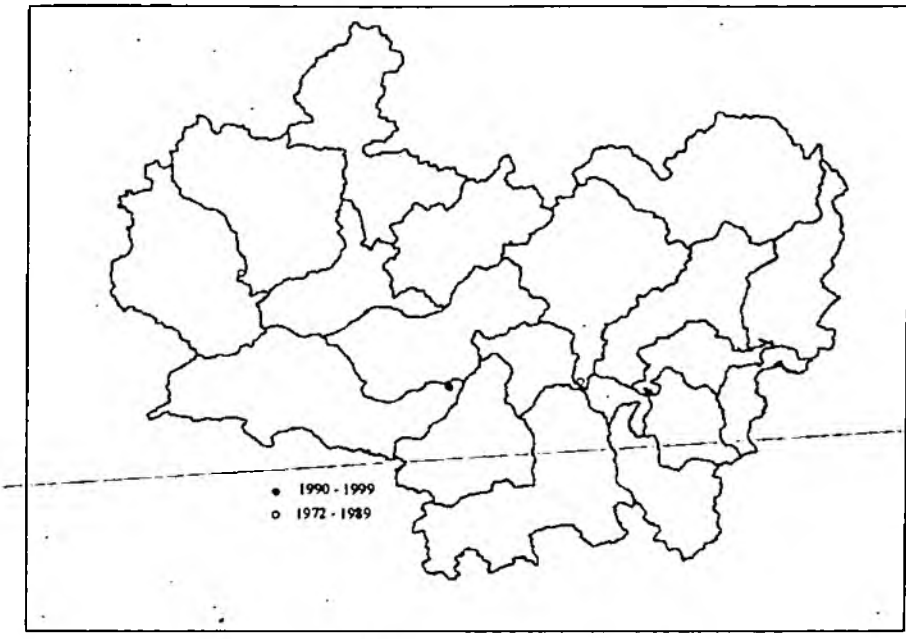
CATEGORY 4 SPECIES

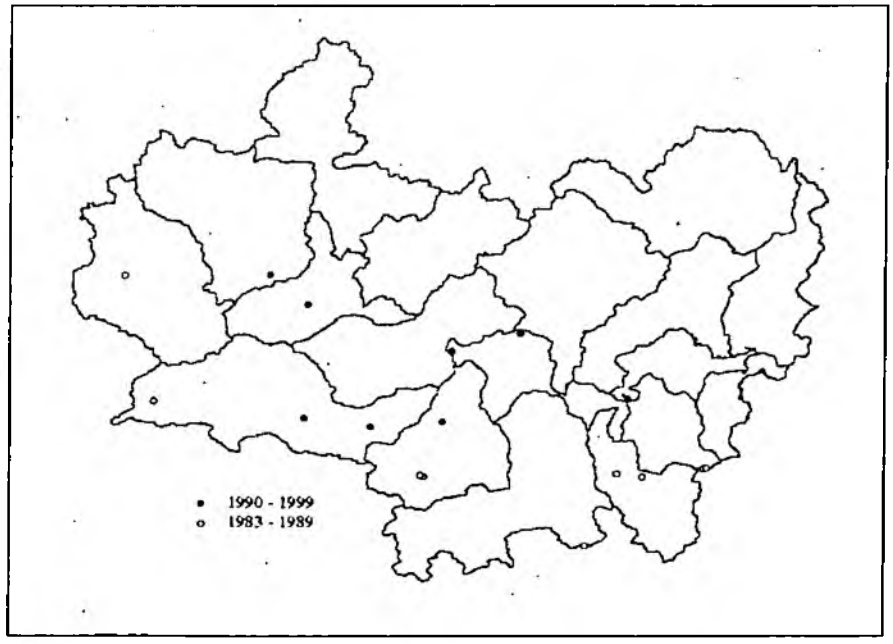
Category 4 species are those on the UK BAP priority list for which there are no specified actions for the Agency, but which may be affected by Agency activities. Less effort has been put into collecting distribution data for these species – hence the small number of distribution maps included in this version. Accurate distribution data is not currently available to the Environment Agency for the following species:

- Daubenton's Bat *Myotis daubentonii*
- Nathusius' Pipistrelle *Pipistrellus nathusii*
- Leisler's Bat *Nyctalus leisleri*
- Cetti's Warbler *Cettia cetti*
- Little Ringed Plover *Charadrius dubius*
- Shelduck *Tadorna tadorna*
- Snipe *Gallinago gallinago*
- Redshank *Tringa totanus*
- Curlew *Numenius arquata*
- Gadwall *Anas strepera*
- Pochard *Aythya ferina*
- Tufted Duck *Aythya fuligula*
- Black Redstart *Phoenicurus ochruros*
- Sand Lizard *Lacerta agilis*
- Common Goby *Pomatoschistus microps*
- Marsh Fritillary *Eurodryas aurina*
- Violet Click Beetle *Limoniscus violaceus*
- Ground Beetle *Armara stenua*
- Great Silver Diving Beetle *Hydrophilus piceus*
- Freshwater Snail *Lymnaea glabra*
- Freshwater Snail *Valvata macrostoma*
- Snipe Fly *Atrichops crassipes*
- Glaucous Beard Moss *Didymodon glaucus*
- Cernous Bryum *Bryum uliginosum*
- Millimetre Moss *Micromitrium tenerum*
- Clustered Earth Moss *Phemerum cohaerens*
- Spruce's Bristle Moss *Orthotrichum sprucei*
- Knot Hole Moss *Zygodon forsteri*
- Spreading-leaved Beardless Moss *Wessia squarrosa*

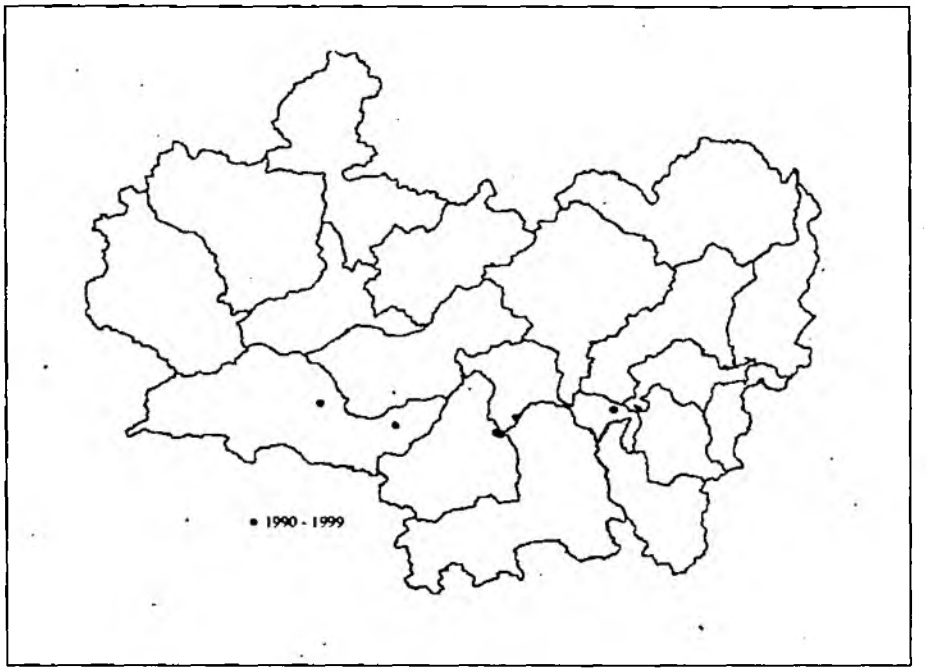
THAMES RAM'S HORN SNAIL *Planorbis (Gyraulus) acronicus*



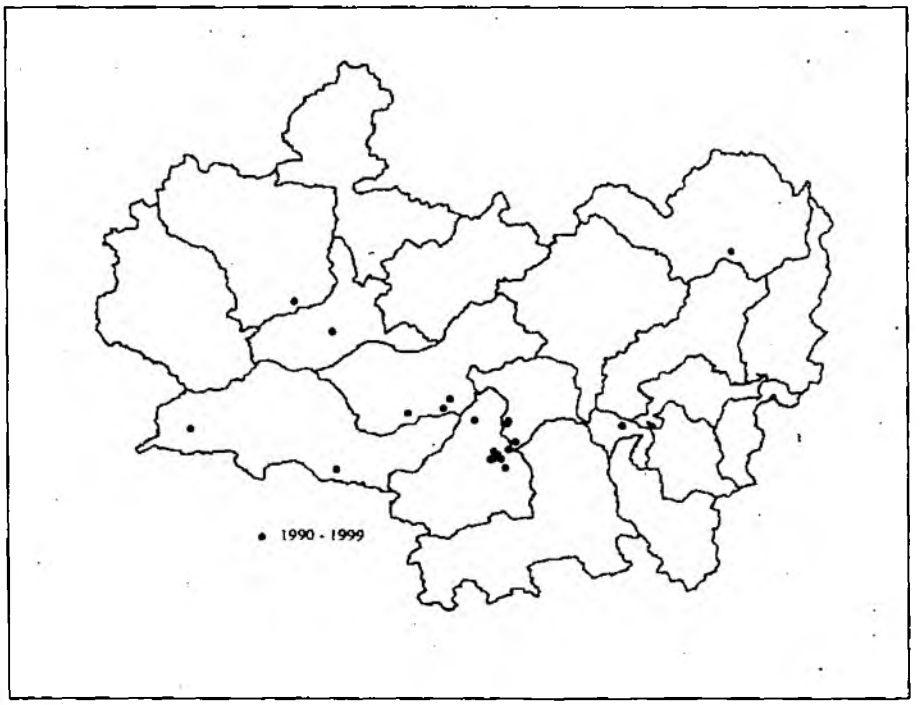
NATTERER'S BAT *Myotis nattereri*



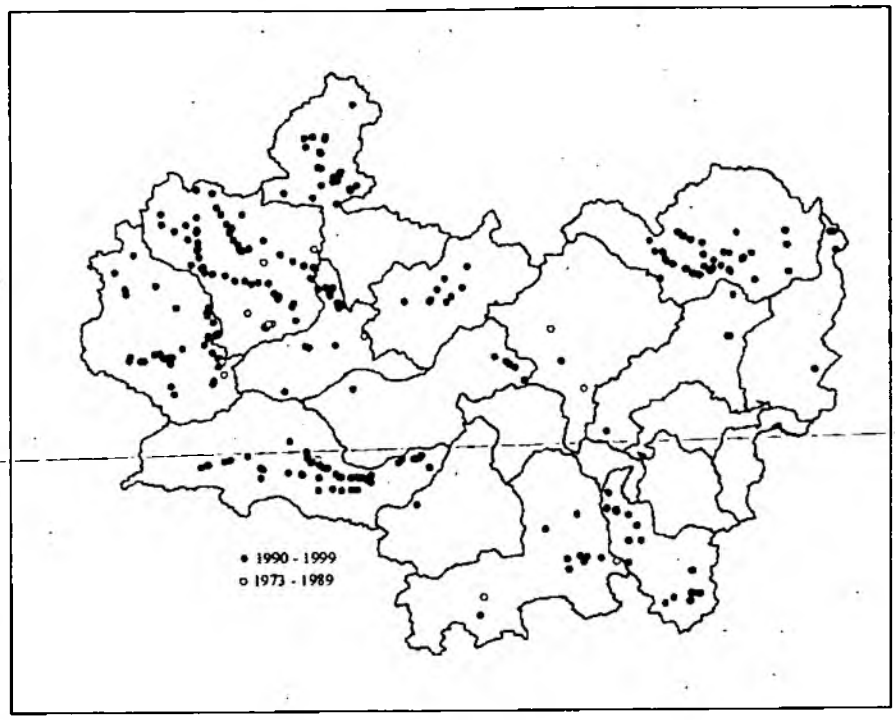
SEROTINE BAT *Eptesicus serotinus*



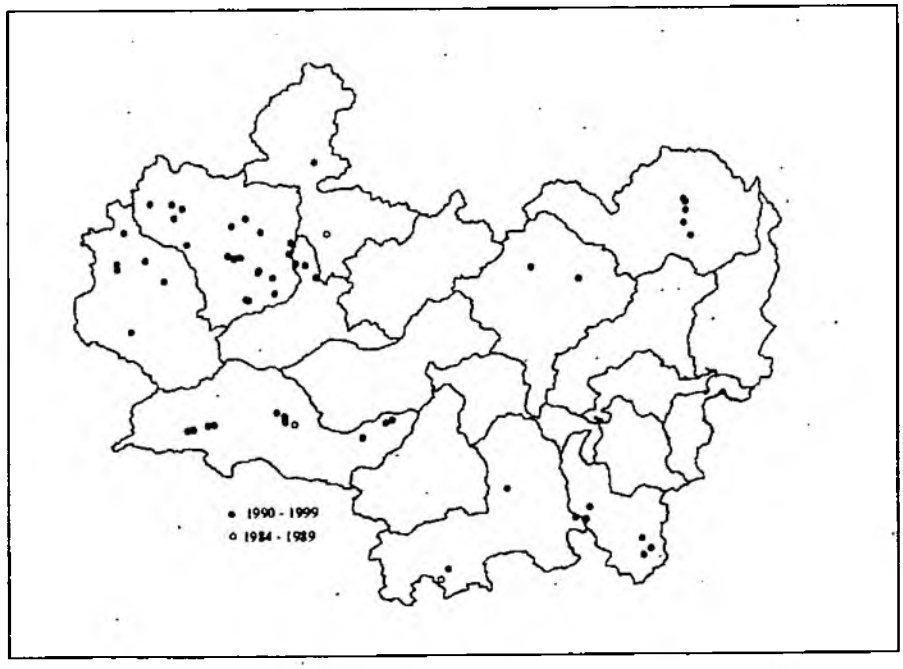
NOCTULE BAT *Nyctalus noctule*



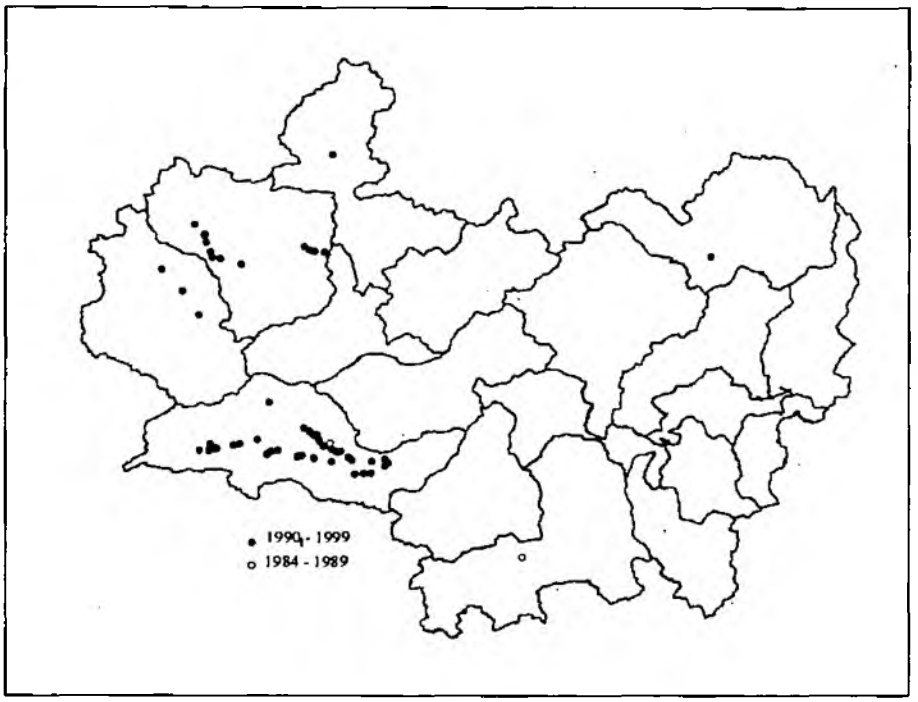
BULLHEAD *Cottus gobio*



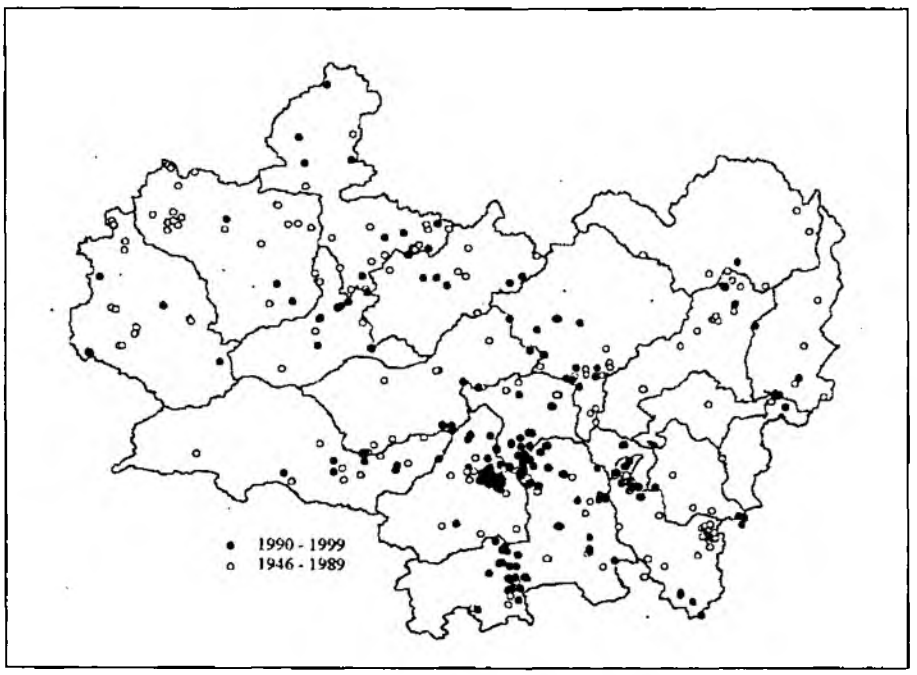
BROOK LAMPREY *Lamptera planeri*



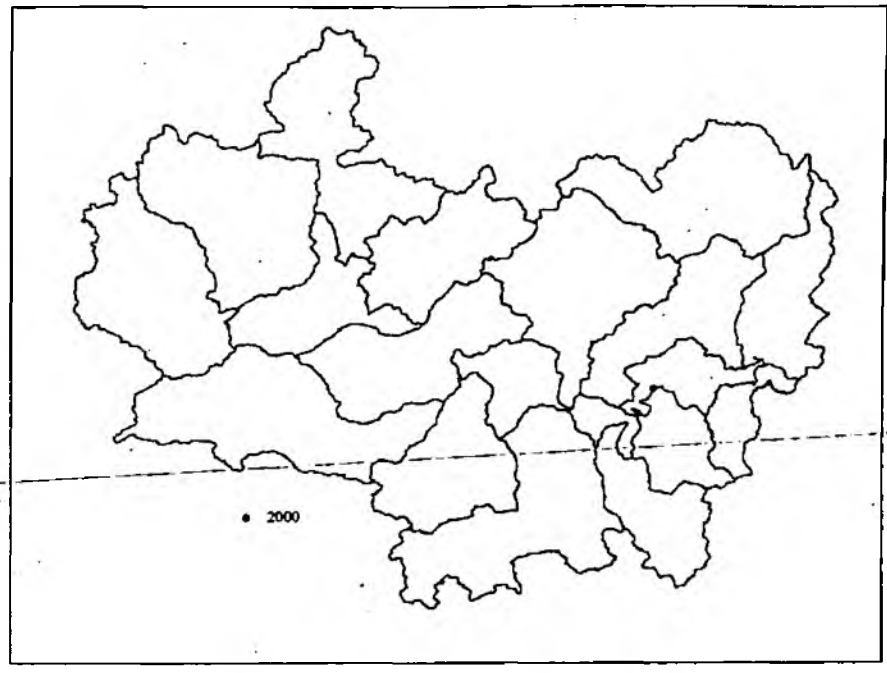
GRAYLING *Thymallus thymallus*



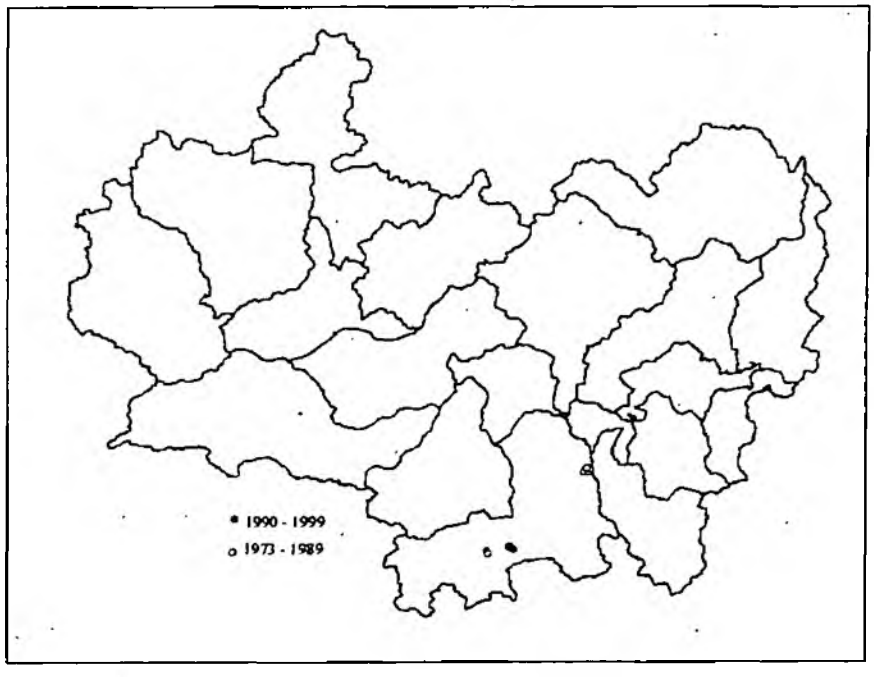
GRASS SNAKE *Natrix natrix*



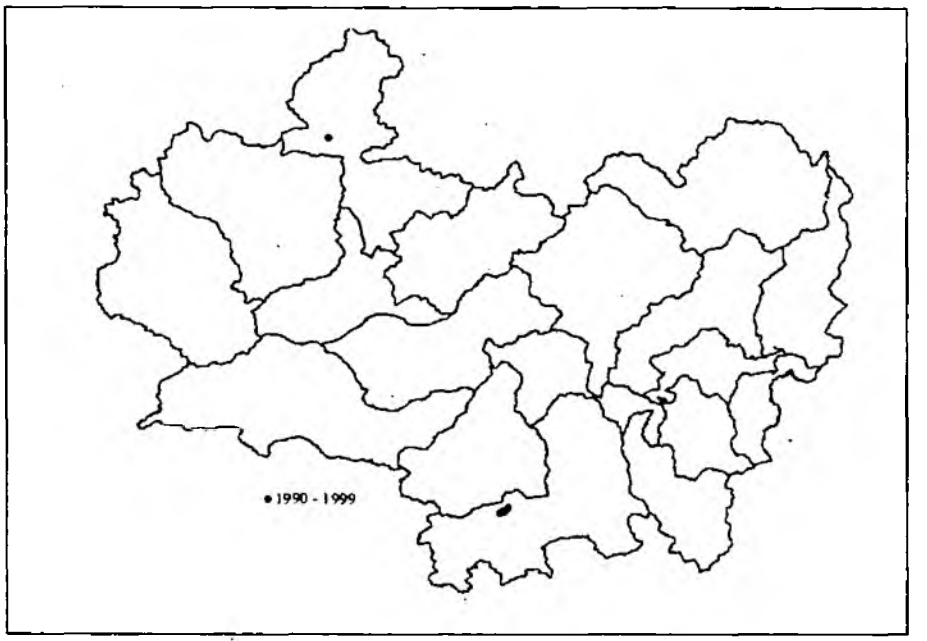
SEA LAMPREY *Petromyzon marinus*



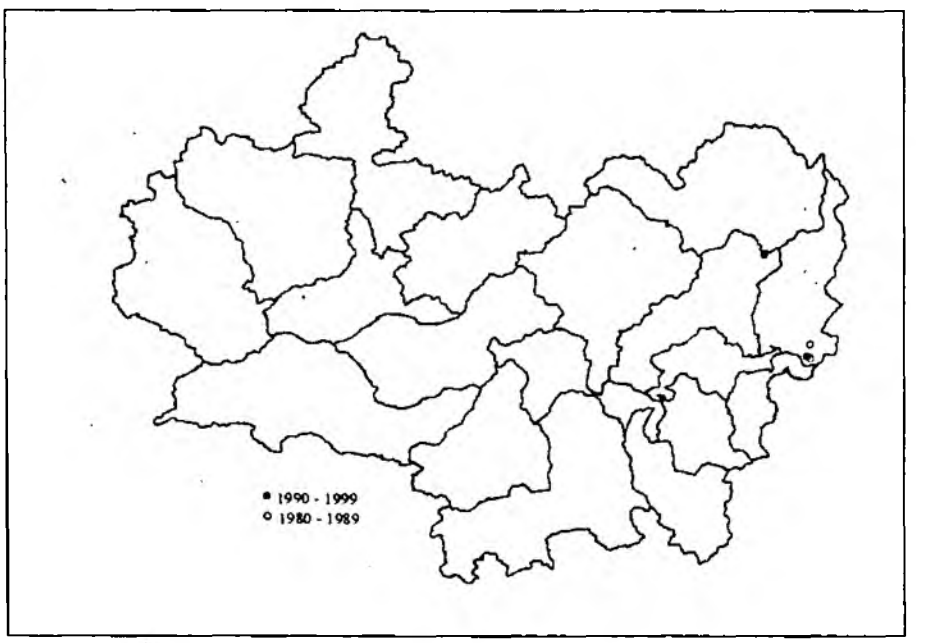
WHITE-FACED DRAGONFLY *Leucorrhina dubia*



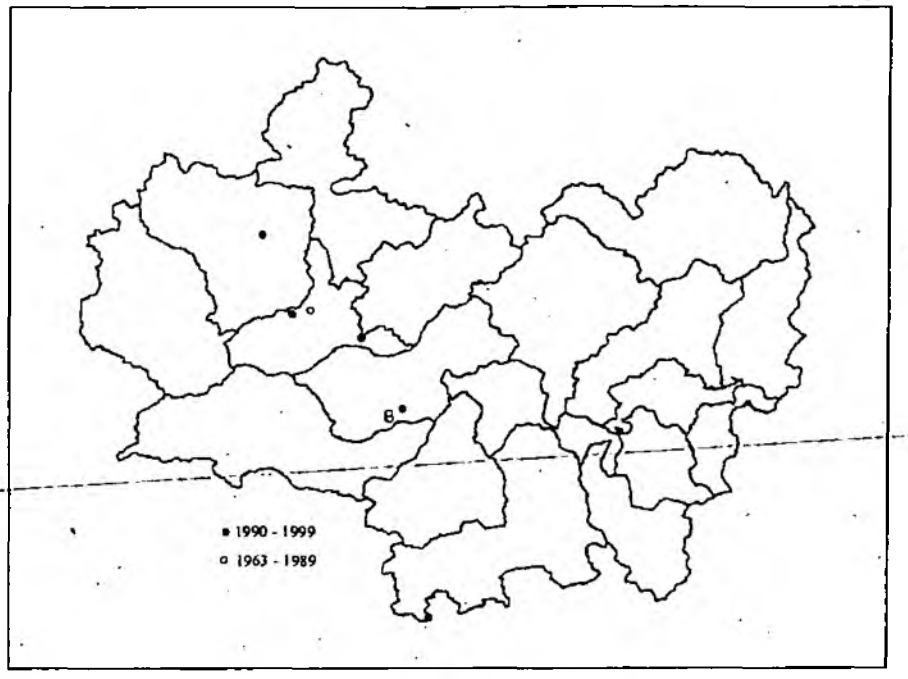
SCARCE CHASER *Libellula fulva*



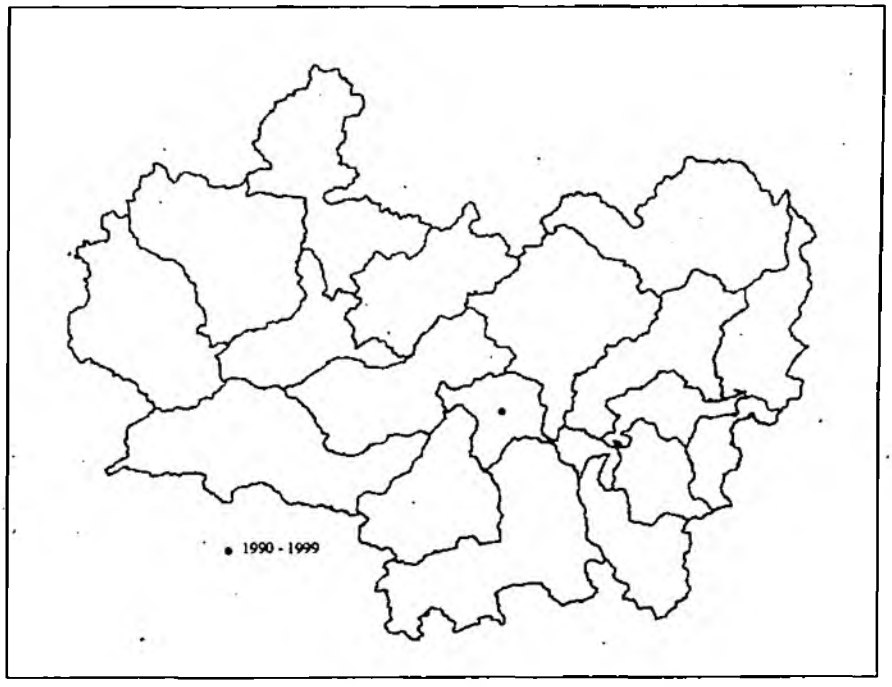
SCARCE EMERALD DAMSELFLY *Lestes dryas*



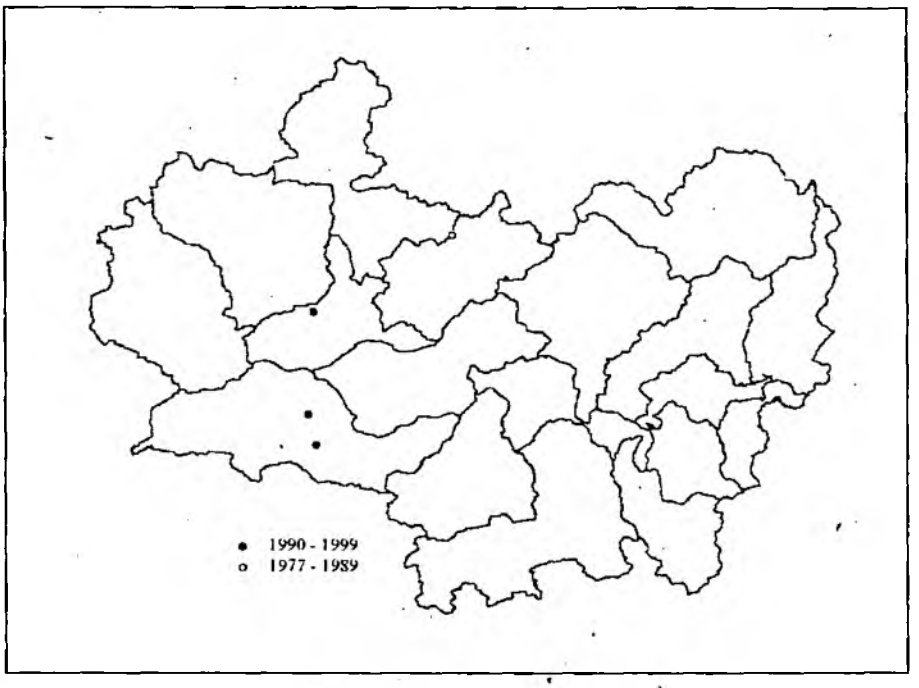
SOLDIER FLY *Oxycera analis*



PENNYROYAL *Mentha pulegium*

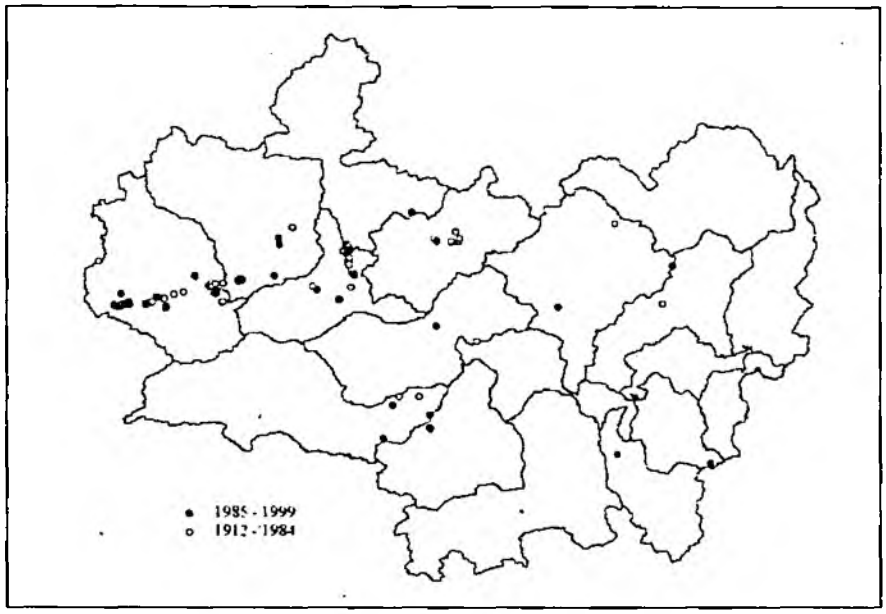


ORANGE-FRUITED ELM LICHEN *Caloplaca luteoalba*



CATEGORY 5
SPECIES

FRITILLARY *Fritillaria meleagris*



1. National Status

Fritillary (*Fritillaria meleagris)* is the only species of the genus *Fritillaria* that is found in Britain. Its natural range extends from this country, through central and northern Europe to Russia in the east, and southern Sweden in the north. Classic sites for Fritillary are, or were, meadows adjacent to lowland rivers where the flora consists of twelve or more grasses, a few sedges and a wide range of herbs associated with damp loam soils. Up to the 1930's the Fritillary grew in its thousands in more than 100 10-km squares. This once abundant plant can now be found in reasonable numbers (over 1000 plants) and in characteristic vegetation at only twelve sites. It is significant that of the twelve sites, eight are controlled by conservation bodies.

2. Factors Causing Loss or Decline

2.1 The most important reason for decline is the enormous advancement in agricultural technologies which has resulted in wholesale improvement by ploughing, fertilising and reseeding of meadows with the concomitant loss of herb rich swards.

2.2 The exploitation of sand and gravel resources, which has affected some Wiltshire sites.

3. National Action Plan Objectives and Targets

- None.

4. Regional Status

In Britain, its distribution is largely confined to southern and eastern England with a particularly strong association with the alluvial meadows of the River Thames and its tributaries. There are other centres of distribution in Suffolk, Staffordshire, Herefordshire, Buckinghamshire, and Cambridgeshire. Wiltshire is of particular importance for Fritillary containing some 30% of sites and around 80% of the total British population. Thames Region has 95% of the national population.

5. Regional Priority Actions & Actions So Far

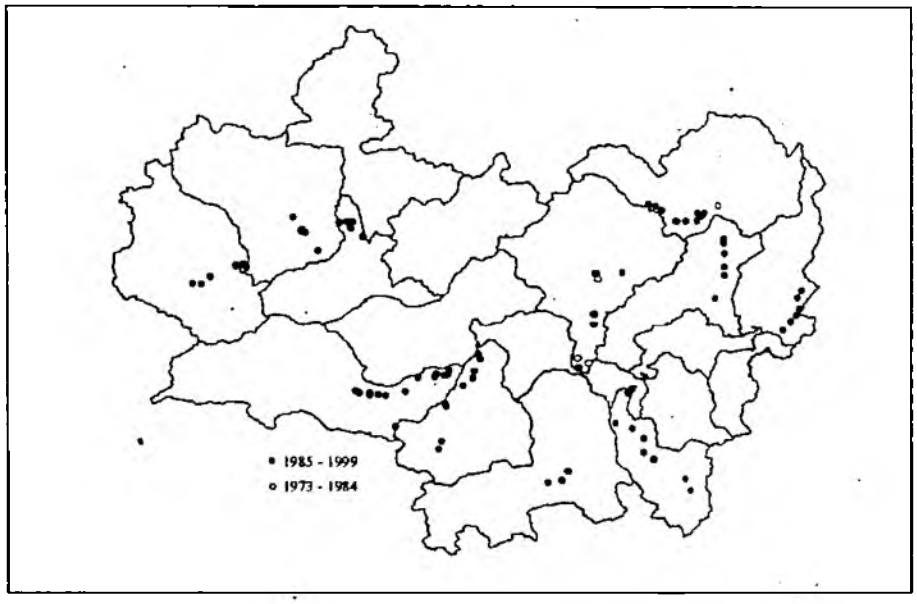
Fritillary Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Reading, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.0	Ensure that Flood Defence and Water Resource activities take account of the conservation requirements of the species.	✓	✓	✓	✓	✓	✓	✓					✓						
5.1	Produce and implement Water Level Management Plans for selected SSSI containing Fritillary.					✓													

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- WLMPs have been drawn up for North Meadow and Clattinger Farm SSSI.
- Habitat enhancement carried out at North Meadow (a culvert was unblocked as the site was becoming too waterlogged for Fritillary to flourish.) The site is now been monitored by English Nature.

BARBEL *Barbus barbus*



1. National Status

Barbel are indigenous to some east coast rivers e.g. the Thames, Trent, Yorkshire Ouse, Great Ouse and their tributaries,

In addition, most rivers in England and Wales, as a result of stocking, now have recruiting populations of Barbel. The main stocked rivers being the Wye, the Severn, the Rivers Teme and Avon, the Dorset Stour and Hampshire Avon and Bristol Avon, the River Frome, the Welsh Dee, the River Dane, the Sussex Ouse, the River Medway, the River Wensum and the Yorkshire Dove.

2. Factors Causing Loss or Decline

2.1 Barbel need well-oxygenated water to thrive and gravel runs to spawn and without these facilities there will be a significant loss of the species leading to a general decline in both numbers and health.

2.2 Degradation of spawning grounds. Barbel require relatively shallow, fast flowing water over clean gravel on which eggs can be laid and develop in the presence of well oxygenated water. Effective spawning grounds can be lost for example, as a result of dredging, impoundment and siltation.

2.3 Deficiency of suitable nursery areas. Although information on nursery requirements is limited, habitat providing adequate food resources together with shelter from excessive flow velocities and predation will be important to ensure early survival. Such requirements will be compromised by various management and development impacts, for example flood defence channelisation and hard bank protection.

2.4 Barriers to free movement. Barbel have relatively extensive migratory requirements, some moving very large distances during their lifecycle. Upstream movement, for example in search of suitable spawning grounds, may be impeded by weir structures.

2.5 A minority of game anglers believe that Barbel eat the eggs of spawning Trout and Salmon. Salmonids spawn in shallow water with gravel beds when the water is cold and Barbel at this time, are semi-dormant in the deeper slower water. Due to this misunderstanding, some game anglers have persecuted Barbel.

3. National Action Plan Objectives & Targets

None.

4. Regional Status

Modification of rivers, particularly in the mid to late 20th century, through channelisation, dredging, bank protection and impoundment has resulted in the degradation of suitable habitat for this species. As a result Barbel in the Thames have declined, retaining a patchy distribution where suitable habitat remains. One of the strongholds of this region is the River Kennet where good flow velocities and an abundance of gravel shallows provide excellent habitat.

5. Regional Priority Actions & Actions So Far

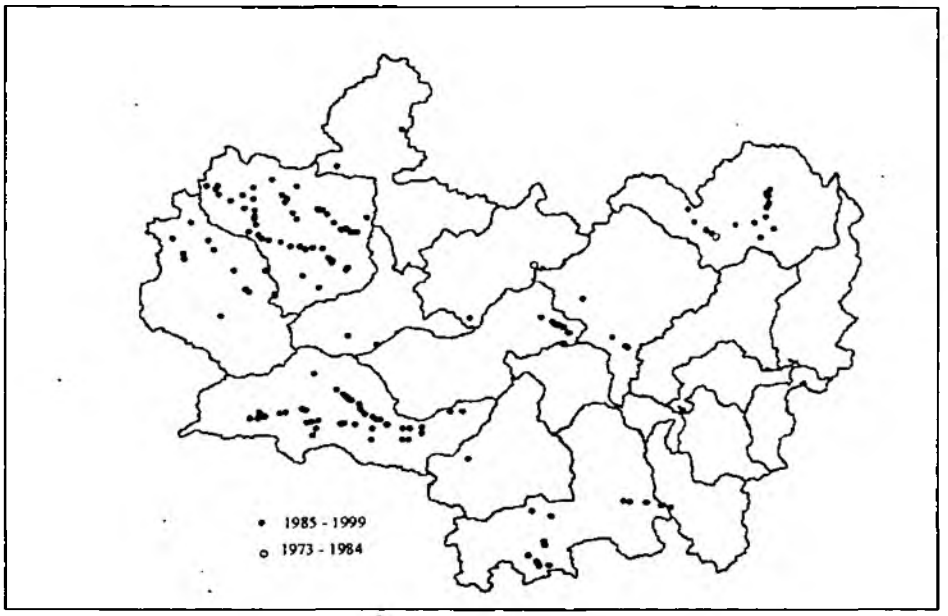
Barbel Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.0	Identify and protect potential spawning sites.	✓		✓	✓	✓			✓		✓		✓		✓	✓	✓	✓	✓
5.1	Seek opportunities for restoration, enhancement or creation of appropriate habitats.	✓		✓	✓	✓			✓		✓		✓		✓	✓	✓	✓	✓
5.2	Research juvenile requirements and locations.	✓		✓	✓	✓			✓		✓		✓		✓	✓	✓	✓	✓

☐ *Regional Priority Actions* ✓ *= Actions So Far*

6. Examples of Action So Far

- Many river enhancement schemes have incorporated the creation of spawning riffles potentially suitable for Barbel.
- River narrowing scheme on the River Colne which will hopefully improve the habitat for Barbel.
- Creation of bypass channel at Penton Hook now allows migration opportunities for adults and provides nursery habitat for juveniles.
- When river structures act as barriers to fish movement the range of some Barbel populations has been extended through stocking.
- In 1999 and 2000 several thousand 2 year old Barbel have been stocked into the main river Thames. These fish have all been marked to indicate stocking location. Information gathered from future recaptures will provide useful information on survival and movement of Barbel in the Thames.
- Agency fish removal policy implemented on the Kennet alleviates pressure from salmonid fishery interests.

WILD BROWN TROUT *Salmo trutta*



1. National Status

Brown Trout is chiefly a European species. Its northern limits are Iceland, northern Scandinavia, and Russia. Western limits are defined by the European coast-line, and the southern limits are defined by northern coastline of the Mediterranean sea and the Atlas mountains of North Africa. It has both resident and anadromous forms. Habitat requirements are water temperature which is restricted to a given range, higher oxygen content of the water than other fish species, water quality, suitable spawning grounds, extremes of flow, availability of food and intensity of predation on the trout. Native Wild Brown Trout are under threat from stocking and it is recommended that populations with unique 'gene pools' should be conserved wherever possible.

2. Factors Causing Loss or Decline

- Impoundment, i.e. weirs impeding movement of fish.
- Over-fishing.
- Water quality.
- Water quantity, i.e. there can be insufficient flow to sustain clean gravel spawning beds in some areas.
- Temperature: Wild Brown Trout require low water temperatures.

3. National Action Plan Objectives and Targets

- None.

4. Regional Status

4.1 Wild brown trout are widespread on the Cotswold tributaries and the Kennet, but only scattered populations remain in SE and NE catchments.

5. Regional Priority Actions & Actions So Far

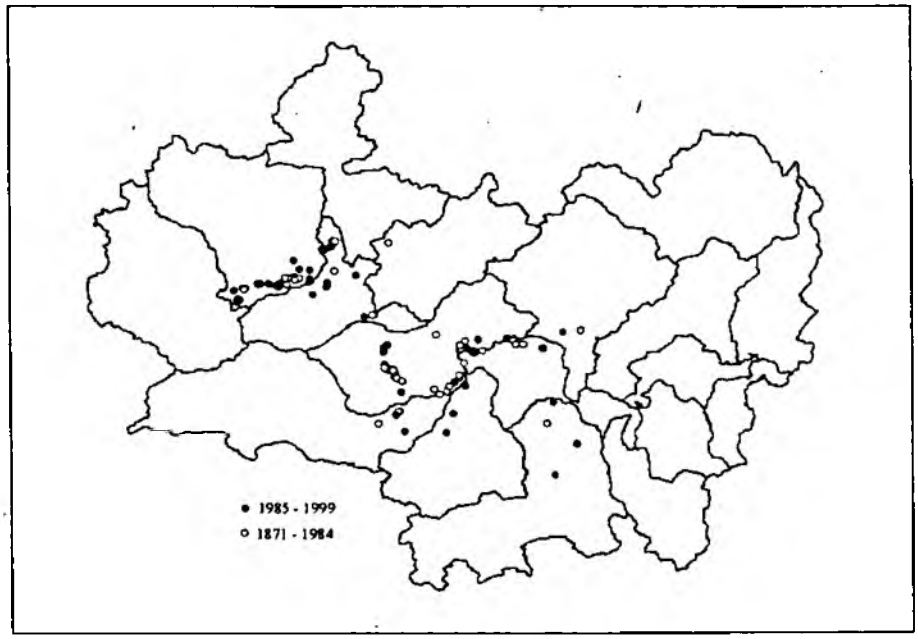
Wild Brown Trout Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.0	Encourage regeneration of native populations.																		
5.1	Monitor sea trout populations.									✓									
5.2	Comment on developments that may affect old sites with Wild Brown Trout.																		
5.3	Re-establish Wild Brown Trout populations where poor water quality or drought have affected them, and monitor these populations.																		
5.4	Survey rivers to establish where native Wild Brown Trout populations are.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5.5	Carry out habitat enhancement works to maintain Wild Brown Trout populations.	✓	✓	✓		✓	✓	✓			✓				✓				
5.6	Advise landowners on habitat enhancement for Wild Brown Trout.																		

☐ *Regional Priority Actions* ✓ *=Actions So Far*

6. Examples of Action So Far

- Some level of habitat enhancement has been carried out in most LEAP areas in the Thames region especially in the Thames (Eynsham to Benson) and Ock LEAP.

CLUB-TAILED DRAGONFLY *Gomphus vulgatissimus*



1. National Status

1.1 This is a medium-sized yellow-green and black dragonfly with a noticeably club-shaped tail. It is found along slow-flowing rivers or in adjacent woodland, although immatures can travel several kilometres from breeding sites. The Club-tailed Dragonfly is extremely local but it can occur in very large populations where the habitat is suitable. It is known to occur on the mature stages of several Welsh rivers and there are very strong populations on the Severn and the Thames. The Club-tailed Dragonfly is described by JNCC as nationally scarce, although this may now be an exaggeration of its rarity.

2. Factors Causing Loss or Decline

2.1 Water pollution resulting from pesticides, fertilisers, industrial and household waste.

2.2 Excessive dredging.

2.3 Clearance of riparian trees and adjacent woodlands.

2.4 Destruction of wetland habitats through land drainage.

3. National Action Plan Objectives and Targets

- None.

4. Regional Status

The Club-tailed Dragonfly has strong populations on the River Thames from Lechlade to below Windsor and smaller populations also occur in the Kennet and Loddon LEAP areas. There is also a relatively recent record for the Wey LEAP area.

5. Regional Priority Actions & Actions So Far

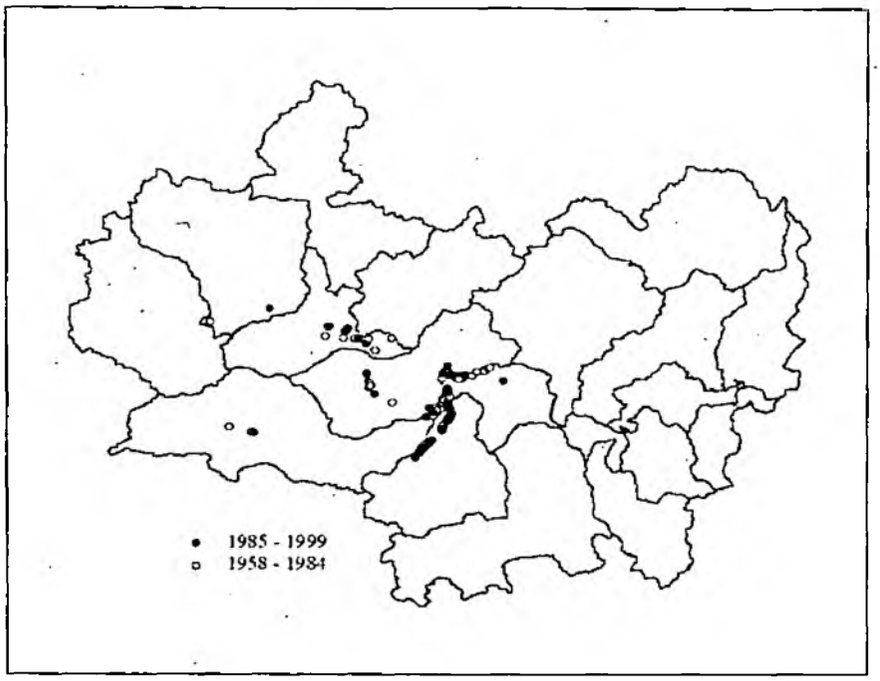
Club-tailed Dragonfly Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.0	Ensure land drainage and other EA activities take account of the requirements of the species.																		
5.1	Ensure that, where possible, the hydrology and water quality of occupied sites remains favourable.																		
5.2	Implement habitat enhancements to benefit the species.			✓															
5.3	Pass info gathered during EA survey/monitoring to JNCC/BRC for inclusion in national databases.																		

☐ *Regional Priority Actions* ✓ *= Actions So Far*

6. Examples of Action So Far

- Habitat enhancement in the Thames (Eynsham and Benson) and Ock LEAP has been carried out. Examples include: Little Wittenham Nature Reserve backwater desilting scheme 1990 and also at Little Wittenham, EA co-funded the creation of a backwater feature connected to the River Thames in 1999.

LODDON LILY *Leucojum aestivum*



1. National Status

1.1 Most of the Loddon Lily sites occur in willow carr or Alder woodland, along muddy river banks and ditches or on islets in rivers, often in areas that are flooded in winter. Most of its sites are by the Thames and its tributaries where it is found in more than 40 1km squares in two main areas: between Reading and Windsor and between Goring and Abingdon. A survey in the 1970s showed that over 100,000 clumps, 77% of the total British population, were contained within six sites on the Thames from Reading to Marlow, and by the Loddon near Twyford. Outside its main area, native populations occur along the Stour Valley in Dorset and at Littlehampton in Devon. Loddon Lily is widely distributed in marshes and wet meadows in Europe, from Ireland eastwards to the Netherlands and the Czech Republic, and southwards to Sardinia, Greece and Crimea.

1.2 Loddon Lily is listed as Near Threatened in the Red Data Book of Vascular Plants. It is legally protected in Austria, Belgium, France and Germany, Netherlands and Switzerland. A decline is reported in Russia and eastern Europe, mainly because of drainage and river engineering.

2. Factors Causing Loss or Decline

2.1 Many sites for Loddon Lily are vulnerable to development, with possible threats stemming from the construction of artificial riverbanks to control erosion, the straightening of river courses and the development of marinas and boat moorings.

2.2 Trampling of river bank vegetation poses an additional threat, and the digging up of bulbs is particularly damaging to the smaller colonies.

3. National Action Plan Objectives and Targets

- None.

4. Regional Status

The Thames Region provides the stronghold and northern most limit of Loddon lily in the UK.

5. Regional Priority Actions & Actions So Far

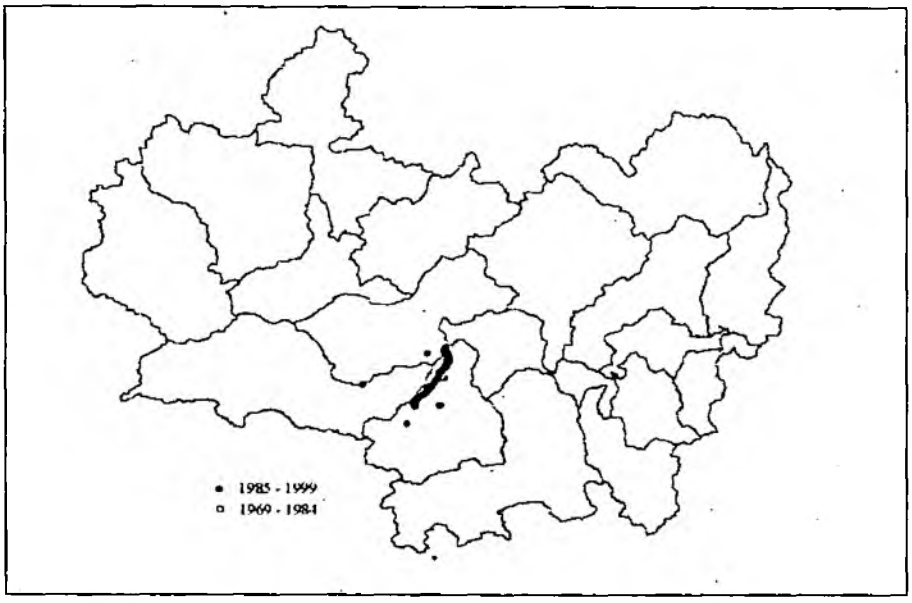
Loddon Lily Local Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.0	Ensure that flood defence operations take account of Loddon Lily conservation.	✓		✓	✓		✓		✓				✓						
5.1	Produce and implement water level management plans in SSSIs containing Loddon Lily.												✓						
5.2	Ensure that Environment Agency landholdings containing the species are managed appropriately.	✓		✓			✓		✓										

☐ *Regional Priority Actions* ✓ = *Actions So Far*

6. Examples of Action So Far

- Water Level Management Plan produced for Lodgewood and Sandford Mill SSSI.
- New site discovered at Taplow and protected and enhanced during Flood Defence Works.
- Habitat restored at Shiplake Mill Island.

LODDON PONDWEED *Potamogeton nodosus*



1. National Status

Loddon Pondweed is a submerged aquatic herb, with thick, opaque, net-veined floating leaves when plants are mature. This species is confined to a few calcareous and moderately, but not excessively, eutrophic rivers in lowland England. In the Loddon it is often particularly abundant in well aerated stretches below weirs and sluices. Apart from the River Loddon catchment, Loddon Pondweed also occurs in the Dorset Stour and the Avon in Somerset, Wiltshire and Gloucestershire.

Loddon Pondweed is a nationally rare species, known from only seven 10 x 10 km OS grid squares in Britain (post 1960).

2. Factors Causing Loss or Decline

2.1 Inappropriate flood defence works, eg dredging and weed cutting.

3. National Action Plan Objectives and Targets

- None.

4. Regional Status

4.1 The stronghold for Loddon Pondweed is the Loddon catchment, where populations are stable and possibly increasing.

5. Regional Priority Actions & Actions So Far

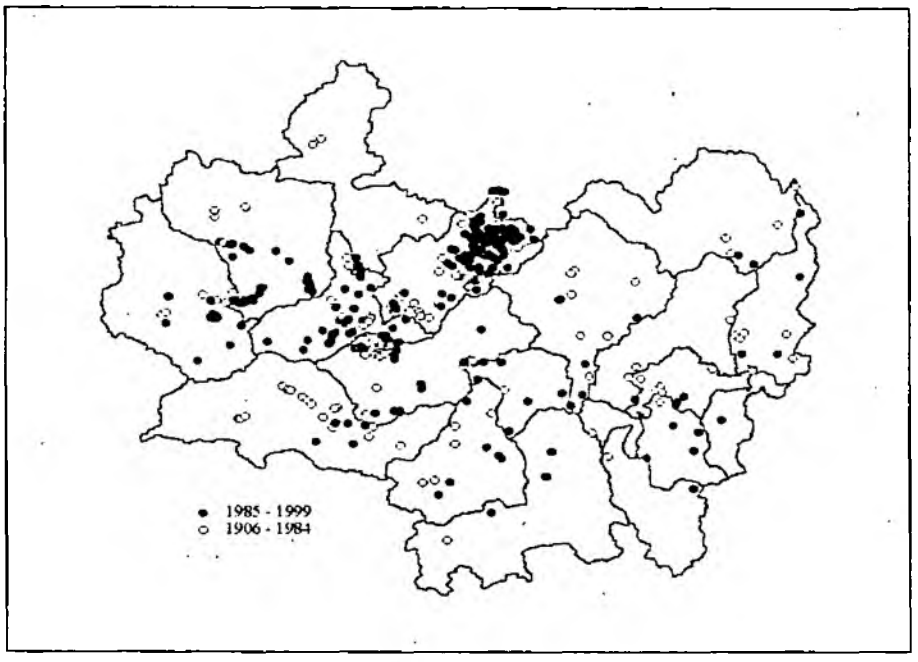
Loddon Pondweed Species Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1	Ensure its protection from flood defence works.						✓						✓						
5.2	Implement follow-up research on previous translocations.																		
5.3	Identify sites for translocation in the main River Thames.																		

Regional Priority Actions ✓ *=Actions So Far*

6. Examples of Action So Far

- None.

BLACK POPLAR *Populus nigra betulifolia*



1. National Status

1.1 Of the many so-called Black Poplars that occur in Britain only the *Populus nigra betulifolia* is truly native, having colonised 7000 years ago. It is not a woodland species, rather a tree of the open countryside, especially river valleys and floodplains. It is estimated that there are between 6000 and 8000 of these trees in Britain; most south of a line from the Mersey to the Humber estuaries. It is difficult to gauge exactly how many native Black Poplars exist in Britain as often hybrid poplars are mistaken for the native type. However, the Aylesbury Vale is a national stronghold where there are believed to be 5,000 specimens currently.

Black Poplar is included in the Red Data Book for Vascular Plants and is described as Vulnerable.

2. Factors Causing Loss or Decline

2.1 The lack of knowledge in terms of location and numbers of Black Poplar in conjunction with the problem of identifying native Black Poplar from hybrids has led to the felling of many of these trees in ignorance.

2.2 It is difficult to target conservation work as these trees are not often found in concentrations, but are usually dispersed throughout the country.

2.3 The vast majority of trees are males only ten suspected females have been identified. This greatly affects the reproductive capacity of the tree.

2.4 Absence of their natural habitat (floodplain forest) means that opportunities for natural regeneration are extremely limited.

3. National Action Plan Objectives and Targets

None.

4. Regional Status

The Thames Region is a stronghold of Black Poplar with two-thirds of the national population in Aylesbury Vale. The London Biodiversity Partnership and the Essex BAP produced Black Poplar SAPs on which the EA actions opposite are based.

5. Regional Priority Actions & Actions So Far

Black Poplar Local Action Plan - Priority Actions For Thames Region 2000-2003		Thames (Buscot to Eynsham) etc	Thame	Thames (Eynsham to Benson) & Ock	Kennet	Upper Thames	Thames (Benson to Hurley) Pang & Wye	Cherwell	Lower Thames	Thames Tideway	Wey	Ravensbourne & Marsh Dykes	Loddon	Wandle, Beverley Brook, Hogsmill	Mole	Roding, Beam & Ingrebourne	Colne	Upper Lee	North London
No.	**Text**																		
5.1	Collaborate with survey of all known trees to establish authenticity and sex.																		
5.2	Implement pollarding of selected trees in collaboration with local specialists and landowners.		✓																
5.3	Encourage local authorities to serve TPOs on trees under threat.																		
5.4	Add cuttings to the clone bank (with permission from the land owners).																		

☐ *Regional Priority Actions* ✓ = *Actions So Far*

6. Examples of Action So Far

- Pollarding programme implemented in the Thame Catchment to maintain Black Poplar and the landscape.
- The EA is collaborating with Aylesbury Vale Black Poplar Society to conserve the Black Poplar.
- As part of the planning process the EA recommend that Black Poplar are planted as mitigation or as a condition to selected planning applications.

LOCAL BAP GROUPS WITH EA CONSERVATION STAFF INVOLVEMENT IN THAMES REGION (1997-1999)

AREA/REGION	BAP GROUP
North East Area	Lee Valley Regional Planning Authority Steering Group Hertfordshire BAP Steering Group Essex BAP Steering Group Bedfordshire & Luton Wildlife Working Group (Member) Lee Valley Conservation Forum Steering Group Lee Valley BAP Steering Group Hillingdon & Hounslow Ecology Forum (Member)
South East Area	The Biodiversity of SE England (Consultee) A Framework for Biodiversity action in Berkshire 1999 Steering Group Earth Summit to Surrey Hills Steering Group Biodiversity Action Plan for Hampshire (Consultee) Wokingham BAP (Consultee) Bracknell Forest BAP (Consultee) Surrey BAP Steering Group Berkshire Rivers Framework Document Hampshire BAP Steering Group Windsor & Maidenhead Steering Group East Hampshire District Council Steering Group Wokingham (Consultee) Bracknell Forest (Consultee)
West Area	Oxfordshire Biodiversity Action Plan (Consultee) Oxfordshire Biodiversity Action Plan Steering Group Review of Wildlife & Habitats in Oxfordshire (Consultee) A Framework for Biodiversity Action in Berkshire (Consultee) Update of Biodiversity Activities in Berkshire 1996/97 (Consultee) Buckinghamshire BAP Steering Group Wiltshire BAP Steering Group (Consultee) Gloucestershire BAP (Consultee) Berkshire BAP (Consultee) The Cotswold Water Park Biodiversity Action Plan Steering Group (Consultee) Biodiversity Audit of the Cotswold Water Park (Consultee) Oxfordshire Habitat Action Plans – Wetlands Task Group Member and Consultee for others
Regional Office	SE England Biodiversity Forum

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British Dragonfly Society
British Entomological Society
British Lichen Society
British Mycological Society
Buckinghamshire County Council
Cotswold Water Park
English Nature
Essex Amphibian & Reptile Group
Essex Wildlife Trust
Hertfordshire & Middlesex Wildlife Trust
Hertfordshire Amphibian & Reptile Group
Hertfordshire Biological Records Centre
Hertfordshire County Recorder
Hertfordshire Naturalist Society
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Lee Valley Partnership
London Amphibian & Reptile Trust
London Biodiversity Partnership
London Ecology Unit
London Mammal Group
London Natural History Society
London Wildlife Trust
Northamptonshire Wildlife Trust
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Plantlife
Pond Action
Rare Breeding Birds Panel
Royal Society for the Protection of Birds
Surrey Wildlife Trust
Thames Water
UK Depressed River Mussel Steering Group
Wiltshire Wildlife Trust

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