

SUBJECT TO REVISION

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**Guidelines for the selection of biological SSSI's
Part 2: Detailed guidelines for habitats and species groups**

16 FRESHWATER AND ESTUARINE FISH

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16 FRESHWATER AND ESTUARINE FISH

1 Introduction

- 1.1 Table 30 lists all native and non-native species of freshwater, anadromous and estuarine fish occurring in Britain. The NCC is funding an investigation by Dr Peter Maitland and the Institute of Terrestrial Ecology into the status and distribution of the rarer species, but a full report will not be available until 1991.
- 1.2 There are very few water bodies in Britain with natural fish communities. Many communities have been distorted by introductions of non-native species and/or native species from a previously restricted geographical range. Where historical records are sparse or absent it may be extremely difficult to determine whether a population or community should be classed as 'natural'. For this reason diversity does not provide a valid criterion for selecting SSSIs. It will only be in exceptional circumstances (e.g. extreme isolation or high research potential) that SSSI selection on community grounds will be applicable.

2 Criteria for site selection on grounds of isolated populations or rare species

- 2.1 Examples of ecotypic or genetically distinctive fish populations which are worthy of conservation are:

populations of charr in North Wales, the Lake District and southern Scotland, and also certain genetically distinct 'races' elsewhere in Scotland;

possible post-glacial relict races of brown trout in northern Scotland;

spine-deficient three-spined stickleback (an aberrant form which may be a genotype or an ecotype) in the Outer Hebrides.

The site with the largest population of any such fish in an AOS may be selected.

2.2 Nationally rare species for which all breeding sites qualify for selection are:

vendace Coregonus albula, probably now only present in the English Lake District; listed in Schedule 5 of the Wildlife and Countryside Act 1981;

whitefish Coregonus lavaretus - the gwyniad of North Wales, the schelly of the Lake District and the powan of south-west Scotland; listed in Schedule 5;

allis shad Alosa alosa, an anadromous species which probably still spawns in the lower reaches of a few rivers;

twaite shad Alosa fallax, an anadromous species which breeds in the lower reaches of a few rivers;

burbot Lota lota, which is almost certainly extinct in Great Britain; listed in Schedule 5.

2.3 A nationally uncommon species for which some breeding sites qualify for selection is:

smelt Osmerus eperlanus, an anadromous species which breeds in a number of English rivers but is rare in Scotland and Wales. The spawning areas of the smelt in Scotland and Wales, but not those in England, may be selected.

3 EC Habitats Directive

3.1 Sites with the following species listed on Annex II of the above Directive also qualify for consideration: Atlantic salmon *Salmo salar*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, brook lamprey *Lampetra planeri*, spined loach *Cobitis taenia* and bullhead *Cottus gobio*. Sites for these species should be selected according to the criteria listed in Annex III of the Directive. Allis shad *Alosa alosa* and twaite shad *Alosa fallax* are also listed on Annex II of the Directive. Site selection of these species is already covered in paragraph 2.2 above; the Annex III criteria need only be applied where the site is also being put forward for SAC designation.

4 Relevant literature

Maitland, P.S. 1972. *A key to the freshwater fishes of the British Isles with notes on their distribution and ecology*. Ambleside, Freshwater Biological Association (Scientific Publication No. 27).

Maitland, P.S. 1974. The conservation of freshwater fishes in the British Isles. *Biological Conservation*, 6, 7-14.

Maitland, P.S. 1977. *Freshwater fish in Scotland in the 18th, 19th and 20th centuries*. *Biological Conservation*, 12, 265-278.

Newbold, C. 1985. Changes in the freshwater fish fauna of Great Britain and their conservation priorities. *In: Institute of Fisheries Management. Proceedings of 16th Annual Study Course, York*, 14-32.

Wheeler, A.C. 1977. The origin and distribution of the freshwater fishes of the British Isles. *Journal of Biogeography*, 4, 1-24.

Table 30 British freshwater, anadromous and estuarine fish and their distribution

<u>Common name</u>	<u>Scientific name</u>	<u>England and Wales</u>		<u>Scotland</u>	<u>Status of rarer species</u>
Sea lamprey	<i>Petromyzon marinus</i> L.	A	Native	Native	
River lamprey	<i>Lampetra fluviatilis</i> (L.)	A	Native	Native	
Brook lamprey	<i>Lampetra planeri</i> (Bloch)		Native	Native	
Sturgeon	<i>Acipenser sturio</i> L.	E/A	Native	Native	Vagrant, not known to breed in GB.
Allis shad	<i>Alosa alosa</i> (L.)	E/A	Native	Native	Rare, declining, May breed in a few rivers.
Traite shad	<i>Alosa fallax</i> (Lacepede)	E/A	Native	Native	Rare. Spawns in a few rivers.
Salmon	<i>Salmo salar</i> L.	A	Native	Native	
Trout (brown, sea, etc.)	<i>Salmo trutta</i> L.	(A)	Native	Native	
Rainbow trout	<i>Salmo gairdneri</i> Richardson		Introduced	Introduced	
Humpback salmon	<i>Oncorhynchus gorbuscha</i> (Walbaum)	A	Introduced	Introduced	
Charr	<i>Salvelinus alpinus</i> (L.)		Native	Native	Secure in NW Scotland but rare in S Scotland, N England and Wales.
American brook trout, speckled charr	<i>Salvelinus fontinalis</i> (Mitchell)		Introduced	Introduced	
Whitefish, schelly, powan, gwyniad	<i>Coregonus lavaretus</i> (L.)		Native	Native	Only 5 or 6 sites in GB. Listed in Schedule 5. Probably extinct in Scotland.
Vendace	<i>Coregonus albula</i> (L.)		Native	Native	2 sites in English Lake District. Listed in Schedule 5.
Houting	<i>Coregonus oxyrinchus</i> (L.)	E/A	Native	Native	Vagrant, not known to breed in GB.
Grayling	<i>Thymallus thymallus</i> (L.)		Native	Introduced	
Smelt	<i>Osmerus eperlanus</i> (L.)	E/A	Native	Native	Lost from many sites but still spawns in a few rivers.
Pike	<i>Esox lucius</i> L.		Native	Ancient introduction	
Carp	<i>Cyprinus carpio</i> L.		Introduced	Introduced	
Grass carp	<i>Ctenopharyngodon idella</i> (Val)		Introduced under licence for weed control	Introduced under licence for weed control	
Crucian carp	<i>Carassius carassius</i> (L.)		Native?	Absent	
Goldfish	<i>Carassius auratus</i> (L.)		Introduced	Introduced	
Barbel	<i>Barbus barbus</i> (L.)		Native	Native	
Gudgeon	<i>Gobio gobio</i> (L.)		Native	Introduced	
Tench	<i>Tinca tinca</i> (L.)		Native	Introduced	
Silver bream	<i>Blicca bjoerkna</i> (L.)		Native	Absent	
Common bream	<i>Abamis brama</i> (L.)		Native	Introduced	
Bleak	<i>Alburnus alburnus</i> (L.)		Native	Absent	
Minnow	<i>Phoxinus phoxinus</i> (L.)		Native	Ancient introduction	
Bitterling	<i>Rhodeus sericeus</i> (Bloch)		Introduced	Absent	
Rudd	<i>Scardinius erythrophthalmus</i> (L.)		Native	Introduced	
Roach	<i>Rutilus rutilus</i> (L.)		Native	Ancient introduction	
Chub	<i>Leuciscus cephalus</i> (L.)		Native	Introduced	
Orfe	<i>Leuciscus idus</i> (L.)		Introduced	Introduced	
Dace	<i>Leuciscus leuciscus</i> (L.)		Native	Introduced	
Spined loach	<i>Cobitis taenia</i> L.		Native	Absent	Uncommon, mainly in central and eastern England.
Stone loach	<i>Noemacheilus barbatulus</i> (L.)		Native	Ancient introduction	
Wels	<i>Silurus glanis</i> L.			Absent	
Eel	<i>Anguilla anguilla</i> (L.)		Native	Native	
Three-spined stickleback	<i>Gasterosteus aculeatus</i> L.	(E)	Native	Native	

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<u>Common name</u>	<u>Scientific name</u>		<u>England and Wales</u>	<u>Scotland</u>	<u>Status of rarer species</u>
Ten-spined stickleback	<i>Pungitius pungitius</i> (L.)		Native	Native	
Burbot	<i>Lota lota</i> (L.)		Native	Absent	Considered extinct in GB. Listed in Schedule 5.
Sea bass	<i>Dicentrarchus labrax</i> (L.)	E	Native	Native	
Largemouth bass	<i>Micropterus salmoides</i> (Lacepede)		Introduced	Absent	
Pumpkinseed	<i>Lepomis gibbosus</i> (L.)		Introduced	Absent	
Rock bass	<i>Ambloplites rupestris</i> (Rafinesque-Schmaltz)		Introduced	Absent	
Perch	<i>Perca fluviatilis</i> L.		Native	Ancient introduction	
Ruffe	<i>Gymnocephalus cernua</i> (L.)		Native	Introduced	
Pikeperch, zander	<i>Stizostedion lucioperca</i> (L.)		Introduced	Absent	
Common goby	<i>Pomatoschistus microps</i> (Kroyer)	E	Native	Native	
Thick-lipped mullet	<i>Crenimugil labrosus</i> (Risso)	E	Native	Native	
Thin-lipped mullet	<i>Chelon ramada</i> (Risso)	E	Native	Native	
Golden mullet	<i>Chelon auratus</i> (Risso)	E	Native	Absent	
Bullhead	<i>Cottus gobio</i> L.		Native	Introduced	
Flounder	<i>Platichthys flesus</i> (L.)	E	Native	Native	

E = estuarine

A = anadromous (ascending rivers from the sea to breed)

Parentheses indicate occurrence in fresh water as well as in these circumstances.