

15 REPTILES AND AMPHIBIANS

1 International obligations

Under the terms of the 'Bern' Convention on the Conservation of European Wildlife and Natural Habitats (see B, 3.2.3), the United Kingdom, as a contracting party, is required to take the necessary legislative and administrative measures to ensure the conservation of important habitats of the sand lizard, smooth snake and natterjack toad.

2 Reptiles

2.1 Six native species of terrestrial reptiles occur in Britain. Of these, the smooth snake and sand lizard are regarded as endangered species and have been given full protection through Schedule 5 of the Wildlife and Countryside Act 1981. Site selection should take particular account of both species. The other four species are widespread and relatively numerous, and so the representation of outstanding assemblages should be the guiding principle. Reptiles are difficult to survey quantitatively; qualitative guidelines are therefore recommended. Reptile sites, at least for the endangered species, will be sand-dunes and lowland heaths. Where there is contiguous, open, semi-natural habitat, this should be included even though reptiles may not have been recorded in all parts of the site. Suitable man-made structures (e.g. tumuli, embankments and stone walls) should also be included.

2.2 There should be a presumption for selection of reptile sites on the following grounds.

2.2.1 In Dorset all important and established populations of smooth snake Coronella austriaca and sand lizard Lacerta agilis should be selected; for sand lizards, sites might be considered "important" because of the overall strength of a dispersed population or because of the presence of an apparently discrete colony or colonies. In other counties all established populations should be selected.

2.2.2 In any AOS, the best locality containing at least three of the other species, adder Vipera berus, grass snake Natrix natrix, common lizard Lacerta vivipara and slow worm Anguis fragilis, should be selected. Sites should not be chosen to represent populations of one or two species, but the occurrence of any species should count positively in the evaluation of sites chosen largely on other grounds, especially in areas where the species concerned is rare or at the geographical limits of its range.

3 Amphibians

3.1 Six native species of amphibians occur in Britain (see Table 29). Of these the natterjack toad and warty (great crested) newt are regarded as endangered and vulnerable respectively and have been given full protection through Schedule 5 of the Wildlife and Countryside Act 1981. Site selection should take particular account of both species. Any breeding site of these species adjacent to an existing SSSI should be considered for inclusion in the SSSI. The other four species are widespread and relatively numerous, and so the representation of outstanding assemblages should be the guiding principle. Any site with an assemblage score of five or more (see 3.2.3 and Table 29) which is adjacent to an existing SSSI should be considered for

inclusion in the SSSI. At a site where several breeding pools are utilised by amphibians, numbers of individuals should be summed to derive a total for the site. Amphibian SSSIs should exclude recently created garden ponds, swimming pools, etc., and assessments should exclude any populations of species known to have been introduced. The site boundary should include suitable semi-natural terrestrial habitat where this occurs contiguous to or near the breeding site. Natterjacks require open terrestrial habitat, but the other species prefer structurally diverse mixtures of open, scrub and woodland habitats.

3.2 There should be a presumption for selection of amphibian sites on the following grounds.

3.2.1 For the natterjack toad Bufo calamita, all important and established colonies should be selected. "Established" means that there should be evidence of a viable colony having been at the site over a period of five years or more but not necessarily breeding every year. It may not be necessary for five years' observations to be available, as a study of the age/size structure of the population may provide sufficient historical information. "Important" should be taken to include colonies in the following types of site:

(i) sites with populations greater than the median size for a British population (i.e. more than 100 adults or 25 spawn strings per year should have been present during at least two of the last five years);

(ii) all heathland sites;

(iii) the best or sole representatives in a Watsonian vice-county.

3.2.2 For the warty newt Triturus cristatus, all exceptional sites (those where a night count in the breeding season exceeds 100 individuals) are eligible. In order to confirm population stability and/or to overcome problems associated with variability between counts (due to changes in vegetation cover etc.), collection of data for three years is recommended for sites which are candidates for selection. If no site satisfies this criterion, the best site for the species in the AOS qualifies for selection, though not until a thorough survey of the area has been made.

3.2.3 Outstanding assemblages of widespread species (i.e. warty newt, smooth newt T. vulgaris, palmate newt T. helveticus, common toad Bufo bufo and common frog Rana temporaria) should be selected. The natterjack should be included for sites which do not qualify separately under 3.2.1. A scoring system for assessment is given in Table 29, and a minimum value of 10 based on presence of at least four species is regarded as the qualifying score for site selection. When a survey of the area has been completed, the site with the highest score qualifies for selection if no site reaches a value of 10.

3.2.4 If survey of an AOS reveals a large number of sites which qualify on grounds of warty newt counts or assemblage scores, the CSD specialist should be consulted for advice about which are to be selected. As a general rule, priority should be given to those sites which qualify both for warty newts and for their amphibian assemblage.

4 Relevant literature

ARNOLD, E.N., BURTON, J.A., & OVENDEN, D.W. 1978. A field guide to the reptiles and amphibians of Britain and Europe. London, Collins.

BUCKLEY, J. 1982. A guide for the identification of British amphibians and reptiles. London, British Herpetological Society.

COOKE, A.S., & SCORGIE, H.R.A. 1983. The status of the commoner amphibians and reptiles in Britain. Peterborough, Nature Conservancy Council (Focus on nature conservation No. 3).

FRAZER, D. 1983. Reptiles and amphibians in Britain. London, Collins (New Naturalist).

NATURE CONSERVANCY COUNCIL. 1983. The ecology and conservation of amphibian and reptile species endangered in Britain. Shrewsbury, Nature Conservancy Council.

Table 29 A scoring system for the selection of sites with assemblages of amphibians

		Low population	Good population	Exceptional population
		Score 1	Score 2	Score 3
Warty newt	Seen or netted in day	<5	5-50	>50
	Counted at night	<10	10-100	>100
Smooth newt	Netted in day)	<10	10-100	>100
	Counted at night)			
Palmate newt	Netted in day)	<10	10-100	>100
	Counted at night)			
Common toad	Estimated	<500	500-5,000	>5,000
	Counted	<100	100-1,000	>1,000
Common frog	Spawn clumps counted	<50	50-500	>500

Scores have to be for breeding sites observed during the breeding season. Daytime netting should be made during a 15-minute period for sites with less than 50 m of water's edge, for 30 minutes for sites with 50-100 m, etc. To compute the total score for a site, add the scores for individual species and add one point for four of these species present and two points for five species. If natterjack toads are present, add two more points.

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.