THIRD QUINQUENNIAL REVIEW OF SCHEDULES 5 AND 8 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

REPORT AND RECOMMENDATIONS FROM THE JOINT NATURE CONSERVATION COMMITTEE

June 1996

JOINT NATURE CONSERVATION COMMITTEE

CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES

ENGLISH NATURE

SCOTTISH NATURAL HERITAGE

The JNCC is a committee of the Countryside Council for Wales, English Nature and Scottish Natural Heritage, together with independent members and with representatives from the Countryside Commission and Northern Ireland.

CONTENTS

SUMMARY

As required by Section 24 of the Wildlife and Countryside Act, 1981 (amended by Section 133 of the Environmental Protection Act, 1990), the Joint Nature Conservation Committee has carried out the third five-yearly review of Schedules 5 and 8 of the Wildlife and Countryside Act. The Joint Nature Conservation Committee recommends the following amendments to these Schedules.

Animals recommended for addition to Schedule 5

Vertebrates

Alosa fallax	Twaite shad	Section 9(4)(a) only
Arvicola terrestris	Water vole	Sections 9(4)(a) and 9(4)(b) only
Cetorhinus maximus	Basking shark	Full protection
Gobius cobitis	Giant goby	Full protection
Gobius couchii	Couch's goby	Full protection
Rana lessonae	Pool frog	Full protection

Invertebrates

Atrina fragilis	Fan mussel	Sections 9(1), 9(2) and 9(5)
Bembecia chrysidiformis	Fiery clearwing moth	Full protection
Clavopsella navis	Marine hydroid	Full protection
Coenagrion mercuriale	Southern damselfly	Full protection
Gortyna borelii	Fisher's estuarine moth	Full protection
Lucanus cervus	Stag beetle	Section 9(5) only

Scheduled animals for which increased protection is recommended

Alosa alosa	Allis shad	Add protection under Section 9(4)(a)
Eurodryas aurinia	Marsh fritillary butterfly	Full protection
Lycaena dispar	Large copper butterfly	Full protection
Margaritifera margaritifera	Pearl mussel	Add protection under Section 9(5)

Species recommended for removal from Schedule 5

Hadena irregularis	Viper's bugloss moth

Plants recommended for addition to Schedule 8

Flowering plants

Dianthus armeria	Deptford pink	Full protection in England and Wales only
Eleocharis parvula	Dwarf spike-rush	Full protection
Hyacinthoides non-scripta	Bluebell	Section 13(2) - sale only
Leersia oryzoides	Cut-grass	Full protection
Tephroseris integrifolia ssp. *maritima*	South Stack fleawort	Full protection

Mosses

Anomodon longifolius	Long-leaved anomodon	Full protection
Bryum neodamense	Long-leaved threadmoss	Full protection
Desmatodon cernuus	Flamingo moss	Full protection
Hygrophynum polare	Polar feather-moss	Full protection

Lichens

Alectoria ochroleuca	Alpine sulphur-tresses	Full protection
Catolechia wahlenbergii	Goblin lights	Full protection
Cladonia convoluta	Convoluted cladonia	Full protection
Enterographa elaborata	New Forest beech-lichen	Full protection

Fungi

Battarraea phalloides	Sandy stilt puffball	Full protection
Boletus regius	Royal bolete	Full protection
Buglossoporus pulvinus	Oak polypore	Full protection
Hericium erinaceum	Hedgehog fungus	Full protection

A report of this review, including full statements of the reasons which led to the recommendations, is presented.

1. BACKGROUND

1.1 The statutory basis of quinquennial reviews

1.1.1 Schedules 5 and 8 of Part I of the Wildlife and Countryside Act, 1981 list animals (other than birds) and plants which are specially protected. Under Section 22 of the Act the Secretary of State for the Environment may, by order, add any animal (other than a bird) to Schedule 5 or any plant to Schedule 8 when one or both of the following circumstances apply:

- in his opinion, the animal or plant is in danger of extinction in Great Britain or likely to become so endangered unless conservation measures are taken

- for the purpose of complying with an international obligation.

Conversely, the Secretary of State may remove any animal from Schedule 5 or any plant from Schedule 8, if, in his opinion, it is no longer endangered or likely to become so.

1.1.2 The protection afforded by the Act to animals and plants listed on Schedules 5 and 8 extends throughout Great Britain, unless otherwise specified, and to adjacent territorial waters, which currently extend twelve miles out to sea. The Secretary of State may apply all or only some of the relevant provisions of the Act to animals and plants listed on the schedules and he may limit the protection afforded to certain times of the year or to particular areas of Great Britain. The provisions relate to a range of activities.

1.1.3 For animals the provisions under Section 9 of the Act are:

Section 9 (1)

Killing, injuring or taking

Section 9 (2)

Possession

Section 9 (4)

(a) Damaging or destroying any structure or place used for shelter or protection, or obstructing access to this structure or place

(b) Disturbing animals while they are occupying structures or places used for shelter or protection

Section 9 (5)

(a) Selling, offering or exposing for sale, possessing for the purpose of sale, or transporting for the purpose of sale

(b) Publishing or causing to be published any advertisement offering to buy or sell.

1.1.4 For plants the provisions under Section 13 of the Act are:

Section 13 (1) (a)

Picking, uprooting or destroying

Section 13 (2)

(a) Selling, offering or exposing for sale, possessing for the purpose of sale or transporting for the purpose of sale

(b) Publishing or causing to be published any advertisement offering to buy or sell.

1.1.5 Activities under Sections 9(2), 9(5) and 13(2) apply to live specimens, dead specimens or derivatives. All wild plants are protected under Section 13(1)(b) of the Wildlife and Countryside Act against deliberate uprooting by unauthorised persons, but additional protection is afforded through scheduling.

1.1.6 Under Section 24 of the Wildlife and Countryside Act the Nature Conservancy Council (NCC) was required, five years after the passing of the Act in 1981 and every five years thereafter, to review Schedules 5 and 8 and to advise the Secretary of State whether in its opinion any animal or plant should be added to or removed from the Schedules. The NCC was also empowered to make such recommendation at any time, outside the constraints of the five-yearly reviews. Recommendations were to be accompanied by a statement of the reasons which led to the advice. Under Section 133 of the Environmental Protection Act, 1990, the Joint Nature Conservation Committee (JNCC) became responsible for discharging these functions.

1.2 Previous quinquennial reviews

1.2.1 The results of the first review by NCC was presented to the Secretary of State in October 1986. The proposals recommended further protection for 52 animals and 31 plants and reduced protection for 3 species. All except two of these proposals were implemented. The proposed deletion from Schedule 5 of the sandbowl snail *Catinella*

arenaria was rejected and protection for the basking shark *Cetorhinus maximus* was referred back for reconsideration.

1.2.2 The second quinquennial review was carried out largely by NCC but completed by JNCC, as recommendations were presented to the Secretary of State in October 1991, six months after NCC was disbanded. This review proposed that 18 animals should be added to Schedule 5, 73 plants should be added to Schedule 8 and 3 plants should be removed from Schedule 8. All except four of these recommendations were implemented. The proposal to schedule the fan mussel *Atrina fragilis* was withdrawn and protection was not afforded to the wildcat/domestic cat hybrid, the basking shark or the giant goby *Gobius cobitis* . A further five plant species were added to Schedule 8 on the recommendation of the Department of the Environment because, although not in danger of extinction in Great Britain, they are listed on Appendix 1 of the Bern Convention.

1.3 Protected species

1.3.1. Up-to-date lists of species on Schedules 5 and 8 of the Wildlife and Countryside Act, 1981 are given in Appendix 1, which also indicates the year of scheduling.

1.3.2. Appendix 2 is a list of species for which Britain has obligations under international conventions and the EC Habitats and Species Directive. Species listed on Annex IV of the EC Habitats and Species Directive are also given protection under the Conservation (Natural Habitats etc) Regulations, 1994 (see Appendix 3). Appendices 2 and 3 contain summaries of the protection required and afforded under the international agreements and consequent legislation.

1.3.3 Dual protection exists for nine plant species and a large number of animal species, because they are scheduled under both the Wildlife and Countryside Act, 1981 and the Conservation (Natural Habitats etc) Regulations, 1994. This overlap is shown in Appendix 2. It has been suggested that for administrative reasons there may be some advantage in removing from Schedule 5 and Schedule 8 of the Act all species which are listed under Schedule 2 and Schedule 4 of the Regulations. However, the Department of the Environment has advised that because the protection afforded under these two pieces of legislation is slightly different, dual listing for these species should be maintained.

2. CONDUCT OF THE THIRD QUINQUENNIAL REVIEW

2.1 Quinquennial review working group

2.1.1 A working group of specialists with representation from the JNCC Support Unit, English Nature, the Countryside Council for Wales and Scottish Natural Heritage was set up to co-ordinate the third quinquennial review. The group met first in June 1994 to initiate the review, compile a timetable, clarify procedures and draw up criteria for the choice of species for Schedules 5 and 8. The timetable for the review is shown in Appendix 4 and the criteria adopted for the choice of species are given in Appendix 5.

2.2 Initial consultation

2.2.1 A series of consultations within the statutory conservation agencies and with non-governmental organisations (NGOs) and others is an integral part of the quinquennial review process. An initial consultation sought suggestions for amendments to the schedules from these sources. A consultation pack was put together by the working group. This document contained background information about the legislation and the review procedure, lists of protected species (Appendices 1 and 2 to this report) and guidelines for recommending species for scheduling (see Appendix 5). Standard proformas on which to submit suggestions were included (see Appendix 6).

2.2.2 The consultation pack was distributed widely within the statutory conservation agencies. The initial consultation with NGOs was co-ordinated through Wildlife and Countryside Link and Plantlife Link, who contacted the organisations listed in Appendix 7, collected and collated responses and submitted the recommendations to the working group. Other organisations consulted at this stage were the Countryside Commission, the Forestry Authority, the Institutes of Terrestrial and of Freshwater Ecology, the National Rivers Authority and the Marine Biological Association.

2.2.3 Specialist staff in the statutory conservation agencies were delegated by the working group to assess the status of all the species at present listed on Schedules 5 and 8 and to recommend whether or not they should continue to remain on the schedules.

2.2.4 As a result of the initial consultation, over 50 submissions were made for amendments to Schedule 5 and about 150 for amendments to Schedule 8. Eighteen of these suggestions were for removing species from the schedules or for changing the degree of protection afforded to species already on the schedules. Twelve of the suggestions were submitted through Wildlife Link and 112 through Plantlife Link. The National Rivers Authority produced six recommendations and the Institute of Freshwater Ecology submitted two.

2.3 Consideration of submissions

2.3.1 The submissions resulting from the initial consultation with conservation agency staff, NGOs and others were examined by the quinquennial review working group in April 1995. A large number of the plants were not considered suitable candidates for scheduling, despite being highly threatened and in need of conservation. This is because the threat to these species is habitat deterioration, often as a result of lack of management, or unintentional damage. As scheduling would not directly address these problems they cannot be used to justify protection under Section 13 of the Wildlife and Countryside Act. As stated in the 'Decision criteria' (Appendix 5) a taxon should be nominated only if scheduling has the potential to afford significant benefit to it. For plants, direct benefits are simply protection against intentional picking, uprooting or destruction, and prohibition of trade: scheduling can do nothing directly to prevent unintentional destruction or habitat degradation.

2.3.2 Implementation of wide-ranging habitat and species action plans is in many cases a more suitable means of conserving animal and plant species than listing them on Schedules 5 and 8. The impetus provided by the UK Biodiversity Action Plan for rare species conservation is a much more positive and apposite approach than simply legislating against the damaging activities identified in Sections 9 and 13 of the Wildlife and Countryside Act.

2.3.3 In April 1995 the working group recommended broad acceptance of 41 of the suggestions received, although modifications were made to several of them. Five of the recommendations were to remove species from the schedules; four were to increase protection for species already on Schedule 5; 14 were for adding new animals to Schedule 5; 18 were for adding new plants to Schedule 8.

2.3.4 A detailed case for each of the proposed amendments was produced by the JNCC Support Unit Staff, in consultation with country agency staff, and incorporated in the first draft report on the quinquennial review. In working up detailed proposals, a number of sources in addition to the original suggestion sheets were tapped. The principle JNCC databases used were the Invertebrate Site Register, the Recorder program's species dictionary, the Rare Vascular Plants Database and the Lower Plants Biodiversity Register. The Institute of Terrestrial Ecology's Biological Records Centre was also consulted.

2.3.5 The first draft report was circulated for comment widely within the conservation agencies, to the NGOs already consulted through Wildlife and Countryside Link and Plantlife Link, and to other organisations listed in Appendix 8. As a result of this second round of consultation a large number of comments were received, about 30 of them from NGOs or their members.

2.3.6 New suggestions were assessed by the working group and the proposals in the first draft report were revisited. All the suggestions received but not finally endorsed by the working group are listed, together with reasons for their rejection, in Appendix 9.

2.3.7 The first draft report was revised and the second draft was submitted to the Countryside Council for Wales, English Nature and Scottish Natural Heritage for consideration at high levels. The recommendations were officially endorsed by the country conservation agencies and submitted to the Joint Nature Conservation Committee in June 1996. The Committee also approved them. Appendix 10 summarises the final recommendations for amendments to Schedules 5 and 8. Detailed cases for each of these proposals make up Section 3 of this report. The recommendations are to:

- remove one animal from Schedule 5
- add 12 animals to Schedule 5
- increase protection for 4 animals already on Schedule 5
- add 17 plants to Schedule 8

2.4 'Sale only' controls

As part of the quinquennial review of Schedule 5, the Department of the Environment requested that the effectiveness of sale controls should be reviewed for species at present protected only under Section 9 (5) of the Wildlife and Countryside Act. These animals are the four commoner amphibians and 21 species of butterfly (see Appendix 1). The licensing authority is the Department of the Environment.

2.4.1. Amphibians

2.4.1.1 For the common frog, common toad, smooth newt and palmate newt a general licence for sale came into effect on 1 January 1995. This removed the need for individual applications for sale or associated advertising, possession or transport. The general licence allows the sale of adult specimens only (not spawn, tadpoles or immature animals) and it does not cover sale during the breeding season nor the

sale of animals caught during the breeding season. There are also a number of English counties where the general licence is not applicable to smooth and palmate newts, with the aim of regulating exploitation in areas where these species are uncommon. It is still possible to apply for an individual licence for circumstances not covered by the general licence. Such applications are assessed by the Department in consultation with the appropriate conservation agency.

2.4.1.2 The restrictions placed on exploitation under the general licence are considered desirable and appropriate by the conservation agencies. A drawback of this general licence is that it does not require returns to be made, so no monitoring of the volume of trade is possible. Because the scale of exploitation cannot be measured its impact on wild populations cannot be assessed. It is recommended that procedures are reviewed in advance of 1 January 1998, when the licence is due for renewal, to assess whether a general licence is still appropriate. If so, consideration should be given to attaching a condition obliging traders to inform the Department or the relevant conservation agency about the type and volume of trade. This may be considered necessary, at least for the common frog, because it is included in Annex V of the EC Habitats and Species Directive. The UK is therefore required to carry out surveillance of this species and, in the light of this, to take the necessary measures to ensure that taking from the wild and exploitation are compatible with the common frog being maintained at a favourable conservation status.

2.4.2 Butterflies

2.4.2.1 Individual licences are required for the sale of the 21 butterfly species listed on Schedule 5 in respect of Section 9(5) only. Most of the licence applications are for dead specimens. Country conservation agencies are consulted by the Department before licences are issued. Applicants are required to state how, when and where specimens have been acquired from the wild and, if a licence is issued, the trader is obliged to inform the Department within 14 days of the sale about the numbers of specimens sold and to give the name and address of the purchasers. It is not an offence to take these butterfly species from the wild, nor is a licence required to sell captive bred stock.

2.4.2.2 Recent work on important butterfly sites in southern England has shown that the rate of loss of colonies of key species (largely those protected with respect to sale) is continuing at an alarming rate, while re-establishments are only occasionally successful. It is therefore important that existing individual colonies of these species are protected from depredation for trade. Of the 21 species under consideration, the large tortoiseshell is probably extinct and the large copper is reliant on augmentation from a captive population to maintain the single introduced 'wild' population. None of the other species is in danger of extinction in Great Britain. However, it is considered that the legislation should be used to protect individual colonies, as well as to prevent extinction in the country as a whole. Several of these species have a number of distinct races or sub-species, which are very important in terms of biodiversity and are extremely vulnerable to collecting.

2.4.2.3 A number of cases are known which demonstrate that individual colonies are at risk from trade. Examples are:

- repeated collection by known dealers of silver studded blue butterflies from a site in Shropshire holding an unusual form of the species

- a dealer challenged taking large numbers of high brown fritillary from a National Trust property in Lancashire before this species was afforded full protection

- repeated collection from the isolated and distinctive population of large heath butterfly at Thorne Moors SSSI (a Lincolnshire Trust Reserve) and material from this site offered for sale at entomological trade fairs.

For these reasons and because there is a thriving trade in dead butterfly specimens the conservation agencies strongly recommend that the present controls on sale are retained for all 21 species currently listed. (See also the proposal in Section 3.1 of this report for enhanced protection for the large copper butterfly).

2.4.2.4 There is a 'grey area' relating to captive-bred stock which needs clarification in law. If a gravid female is taken from the wild and subsequently in captivity lays eggs which give rise to adult offspring, there is doubt about whether that stock should be regarded as originating from the wild. If it were, a licence would be required to sell the specimens or to transport, possess or advertise them for sale. The effect on wild

populations of taking females when they are gravid is equivalent to collecting large numbers of wild progeny later in the season, so is undesirable from a conservation viewpoint.

2.4.2.5 One of the main reasons for scheduling the 21 butterfly species was to monitor the trade in these species. The country conservation agencies urgently request that past licence returns are made available to them from the Department and that returns are collated and passed to them regularly in the future. Without this information it will be impossible to assess the impact of legal trade in butterflies on wild populations and to review in an informed way the necessity for continuing the controls in the future.

3. RECOMMENDATIONS FOR AMENDMENTS TO THE SCHEDULES

3.1 Recommendations for amendments to Schedule 5

The table below summarises the Joint Nature Conservation Committee's recommendations for amendments to Schedule 5. The list also functions as an index to the detailed cases for these amendments, which follow the table.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Alosa fallax	Twaite shad (or golden dawn)
Type of animal: Fish	

Distribution in Great Britain

The twaite shad occurs in inshore waters around much of the coast of Great Britain. The primary spawning sites are restricted to rivers flowing into the Bristol Channel area (Severn, Wye, Teme, Usk and Twyi), although there is also evidence of spawning in rivers draining into the Solway Firth and Cardigan Bay (Potts and Swaby 1993).

Distribution elsewhere

This species is found in the Mediterranean, Black and Baltic Seas and occurs around the coasts of the north east Atlantic from North Africa to Iceland.

Status in Britain

Once common, this fish has declined this century and is now rare in Britain.

International status

The twaite shad is listed on Appendix III of the Bern Convention and Annexes II and V of the EC Habitats and Species Directive.

Existing legal protection in Britain

This species is included on Schedule 3 of The Conservation (Natural Habitats, etc.) Regulations, 1994, which means that it should not be killed or taken by poison or explosives. Because it is listed on Annex II of the EC Habitats and Species Directive, Special Areas of Conservation will be designated to protect important breeding sites of the twaite shad.

Habitat

The Twaite shad is an anadromous species which spends most of its life in coastal waters but migrates into rivers to breed. Spawning occurs in spring on gravely and sandy bottoms in tidal areas or in the lower freshwater reaches of rivers.

Threat

Current levels of angling and incidental capture by commercial fishing pose little threat to this species. Pollution of rivers and estuaries, obstruction of migration routes by weirs and barrages and disturbance of spawning areas, for instance by channel modification, are the main threats to its existence.

Recommendation

Protect by listing on Schedule 5 of the Wildlife and Countryside Act, 1981, in respect of Section 9(4)(a) only.

Justification for recommendation

Protection under Section 9(4)(a) would make it an offence intentionally to damage, destroy or obstruct access to spawning areas. Since obstruction of migration routes and disturbance of spawning areas are primary threats to this fish, protection under this section of the Act would be an appropriate conservation measure. Article 7 of the Bern Convention requires Contracting Parties to take appropriate measures to ensure the protection of animals listed on Appendix III. Under the EC Habitats and Species Directive, Special Areas of Conservation will be proposed for some of the breeding sites, but not all of them are likely to be covered by this mechanism.

Benefits which would accrue from acceptance of the recommendation

Acceptance of this recommendation would help to prevent damage to spawning areas and would encourage the construction of adequate fish passes around existing and new weirs and barrages, so allowing the twaite shad access to its breeding sites.

Reference

Potts, G.W. and Swaby, S.E. 1993. *Marine fishes on the EC Habitats and Species Directive.* Confidential report to the Joint Nature Conservation Committee.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Arvicola terrestris	Water vole
Type of animal: Mammal	

Distribution in Great Britain

The water vole occurs throughout Britain, but its distribution is becoming increasingly patchy.

Distribution elsewhere

Arvicola terrestris is widespread throughout most of Europe, extending eastwards in Russia, but is absent from Ireland, much of France and most of the Iberian peninsula.

Status in Britain

This animal is declining rapidly.

International status

The international status is largely unknown, but many western European countries report declines similar to those in Britain. In eastern Europe, where the water vole is less aquatic in its habits, the population appears to be more stable.

Existing legal protection in Britain

None.

Habitat

The water vole lives beside rivers, ditches, canals, ponds and lakes, especially in the lowlands. It favours steep banks with abundant vegetation, where it makes nesting burrows with the entrance above or below the water level. Its diet consists mainly of plants, both aquatic and terrestrial.

Threats

The current main threat to this species is probably from predation by mink, which has become widely established in the wild after escaping from fur farms. The water vole is now much less common up to 400 m. altitude, but relatively more common above 400 m. This may be due to the fact that few mink are found in high altitude headwaters. Other factors which may have contributed to the decline of the water vole are disturbance and

pollution. Loss and modification of habitat through river engineering works and dredging are probably creating situations in which the water vole is vulnerable to mink predation, as well as directly reducing populations. There is evidence that if habitat condition is favourable populations of water vole can sustain themselves even where mink are present.

Recommendation

Add to Schedule 5 for protection under Sections 9(4)(a) and 9(4)(b) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

The water vole has undergone a dramatic and chronic decline this century. Recent survey by the Vincent Wildlife Trust (Strachan and Jefferies 1993) found that this species has disappeared from 67% of its previous sites. It is therefore Britain's most declining mammal, with losses greater than those suffered in the past by the otter. If decline continues at the present rate, 94% of the water vole's previous sites will have been lost by the turn of the century.

As the water vole is not hunted, collected or sold, the recommendation is merely to protect its place of shelter and to prohibit disturbance while it is occupying this place. This would increase the likelihood of water vole populations surviving in the face of predation by mink.

Benefits which would accrue from acceptance of the recommendation

These measures should help the water vole by encouraging consideration of favourable habitat management when river and ditch management is undertaken in sites which support this animal. Scheduling would also bring attention to the plight of the water vole and form the cornerstone of a species recovery programme.

Reference

Strachan, R. and Jefferies, D. 1993. *The water vole Arvicola terrestris in Britain 1989 - 1990: its distribution and changing status.* The Vincent Wildlife Trust.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Cetorhinus maximus	Basking shark
Type of animal: Fish	

Distribution in Great Britain

The basking shark is observed during the months of May to September predominantly off the south and west coasts of Great Britain, from Dorset to northern Scotland. The preferred areas are the south coasts of Devon and Cornwall and around the Isle of Arran in the Clyde estuary. Formerly there were large aggregations of basking sharks around the Inner Hebrides and the Minches on the West coast of Scotland, but recently these have not been seen.

Distribution elsewhere

This shark occurs frequently off the west coast of the Isle of Man. It has an extensive range within coastal and continental shelf regions of cold and warm temperate waters in the Atlantic and Pacific Oceans and the Mediterranean. Its distribution in deeper waters is unknown. In the north-east Atlantic it occurs from the North Cape of Norway as far south as North Africa.

Status in Britain

Basking sharks are recorded annually, mainly in a few favoured areas. The number of sightings is dependent upon weather conditions and sea temperature. There are no reliable data on population size or on fluctuations, but the species appears to be much less common in Britain than formerly.

International status

The basking shark is classified as Insufficiently Known in the published IUCN global Red List (Groombridge ed. 1993). However, using the revised IUCN criteria (World Conservation Union 1994), it is likely to qualify as Vulnerable at a global level on grounds of a probable world population reduction of at least 20% within the next 50 to 60 years (Fowler 1996). Evidence suggests that a similar decline has already occurred during the past 50 to 60 years, at least in the northern hemisphere. Some local or regional populations may be considered Endangered or even Critically Endangered, particularly where targeted fisheries are in progress, are likely to occur, or have resulted in a serious decline in the population in the past. Where the animal is protected from fisheries, the species is probably in the Lower Risk category (i.e. not on the local Red List). It is a protected species in Isle of Man waters under the Wildlife Act, 1990.

Existing legal protection in Britain

There are quotas for the basking shark in European waters, under the Common Fisheries Policy.

Habitat

The basking shark is the second largest fish in the world and the largest in UK waters, measuring up to 10m in length. It grows slowly, has low fecundity (probably producing about 5 offspring in alternate years) and is slow to mature. The average age of mature females in the population is likely to be about 20 years. It uses coastal waters to feed and pair, although pregnant females are rarely caught, suggesting possible use of deeper water during the gestation period. The fish is harmless to man and cruises surface waters with its huge mouth gaping, in order to catch plankton. Although it is largely pelagic, it can occur in very shallow water and is only rarely recorded far offshore in oceanic bycatch (Bonfil 1994). Sightings in British Waters are mainly in summer months, which suggests seasonal migration may occur, either from deep to shallow water or from lower to higher latitudes in warmer weather. However, there is no reliable information on migration routes or wintering grounds.

Threats

The activities which pose a particular threat to basking sharks are directed fisheries and disturbance by man, either intentionally or accidentally. There are occasional non-directed accidental captures by fisheries. For example, Berrow (1994) estimated that 77 to 120 basking sharks are taken annually in the bottom set gill-net fishery in the Celtic Sea. Exploitation of basking sharks in UK waters is effected through an EC quota of 100 tonnes of liver per year, equivalent to about 300 sharks. Currently there is little, if any, direct take of basking sharks in British waters but until recently there was one Scottish fisherman who harpooned them. Directed basking shark fisheries outside the UK are likely to have an effect on the numbers of basking sharks seen in UK waters. A decline in numbers has been recorded around the Isle of Man (Watterson pers. comm.) despite full protection in its waters, presumably because individuals are caught when they move outside the small area of sea where protection is in operation. Failure of traditional fish stocks may encourage increased exploitation of species such as basking sharks, since there is a valuable market for their fins, meat and oil. There is a very important international trade in shark fins, especially in Asia. Basking sharks caught accidentally in gill nets are sometimes de-finned before being discarded. A trade in basking shark fins existed earlier this century between Ireland and Hong Kong (McNally 1976) and the potential exists for an upsurge in trade of fins from basking sharks taken in UK waters.

Adult basking sharks are known to return to the same area of coast each year. Fifteen individuals have been recorded on more than one occasion in Manx waters (Watterson pers. comm.). When feeding or pairing on the surface they are easily approached by boat and are therefore susceptible to harpooning or general disturbance. Because of this and their slow growth rate, populations are extremely vulnerable to depletion by targeted exploitation. There have also been a number of recent reports of basking sharks being harassed off south west Britain and of others being washed up dead or moribund with

severe injuries caused by propellers or boat hooks (Marine Conservation Society press release, May 1995).

Watkins (1958) recorded commercial catches from surface animals in Scotland in summer to be about 95% females. Observations made in Isle of Man waters indicate that the sex ratio of basking sharks is similarly skewed, with up to 96% being female. If this sex ratio is exhibited throughout the UK, removal of large numbers of mature females could have serious consequences to the population as a whole.

Recommendation

Add the basking shark to Schedule 5, for full protection under Section 9 of the Wildlife and Countryside Act, 1981.

Justification for recommendation

There is evidence that targeting local populations of basking shark can result in severe depletion of the stock and a failure to recover. For example, a basking shark eradication programme was carried out in Barkley Sound, Vancouver Island in the 1950s, in response to complaints by Canadian salmon fishermen that basking sharks were being caught in their nets. The operation involved one or two specially armoured boats being used to ram sharks. It was reported (Clemens and Wilby 1961) that several hundred sharks (probably over 80% of the population) were killed in Barkley Sound during the 1950s, after which the problem apparently disappeared. The population has not recovered forty years later, so it seems that this short-term operation had a long-term and devastating effect. A similar pattern was apparent in Ireland, where a basking shark fishery was in operation off Achill Island, County Mayo, between 1947 and 1975 (Kunzlik 1988, McNally 1976). The average catches declined from 1,067 per annum in the period 1949 to 1958, to 119 in the decade between 1958 to 1968 and then to 40 per annum for the remaining years of the fishery. Although there was a decrease in fishing effort, over-exploitation by both local fishermen and Norwegian boats fishing outside the territorial limits is the most likely cause of the sharp decline in catches (McNally 1976). Recovery still has not taken place (Berrow & Heardman 1994). There are no reliable data for UK waters on the impact on basking shark populations of commercial fisheries, but the Canadian and Irish examples indicate how vulnerable the UK population might be if targeted by fisherman.

Recent data from the United States of America indicate that fisheries for other large sharks can have a significant effect on the resource. Examples are recent declines in the total west coast shark catch (Caillet, Holts and Bedford 1992), the marked decrease in thresher shark landings off southern California since the late 1970s (Holts and Sunada 1992) and a recent downward trend in catch per unit effort in sport fishing tournaments for sharks in Florida (Hueter 1992). Declines can happen very rapidly. Soupfin shark landings in California declined from 2,172 tonnes in 1941 to a mere 287 tonnes in 1944, with catch per unit effort in the one area dropping from 55.4 fish per 1,000 fathoms of gill net fished for 20 hours in 1942 to only 1.4 fish in 1944 (Anderson 1990).

Analysis of shark catches for the Chesapeake Bight region of the mid-Atlantic coast (Musick, Branstetter and Colvocoresses 1992) indicates that catch per unit effort since 1974 of common species has declined as much as five-fold and suggests that continued unregulated exploitation will cause a total stock collapse, from which recovery would take decades.

At the ninth meeting of the Conference of the Parties to the Convention on International Trade in Endangered Species (CITES) in November 1994, concern was expressed that levels of exploitation of some sharks were thought to be unsustainable and detrimental to the long-term survival of certain species. In recognition of the susceptibility of large sharks to targeted fishing they are protected in many countries (e.g. basking sharks in the Isle of Man, whale sharks in Maldives, white shark in California and South Africa, grey nurse sharks in New South Wales, Australia) and shark fisheries are now managed in US north-west Atlantic waters. The *Biodiversity Action Plan* (HMSO 1994) lays emphasis on the UK's responsibility for conserving internationally threatened species which occur in this country. The basking shark is now thought to qualify for the global Red List.

As no stock assessment of basking sharks is currently made, allocation of EC quotas is not based on scientific data relating to the sustainable exploitation of stocks. Protection is therefore necessary to avoid exploitation taking place. If the basking shark remains unprotected in UK waters, fishermen from other countries where it gains protection might come here to fish. The precautionary principle requires that the basking shark receives full protection in Britain, since exploitation in territorial waters could very swiftly reduce stocks. Furthermore, prohibition of trade, particularly in shark fins and oil, would help to prevent illegal fishing in the guise of incidental bycatch.

It is recommended that this species is treated in the same manner as the whales, all of which are fully protected in British waters, despite lack of adequate data on their population status and their vulnerability to existing threats.

Benefits which would accrue from acceptance of the recommendation

Basking sharks would be protected in British waters, at least until stock assessments had been made. The move would be exemplary, considering the threatened status of the basking shark elsewhere in the world, and it may encourage further research of a global nature.

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RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Gobius cobitis	Giant goby
Type of animal: Fish	

Distribution in Great Britain

This fish is currently confined to a limited number of sites on the coasts of Cornwall and the Isles of Scilly.

Distribution elsewhere

The giant goby has been recorded from the Mediterranean and Black Seas and the Atlantic coasts of Morocco, Spain, Portugal and France.

Status in Britain

This fish has a very limited distribution in Britain, where it occurs at the northern limit of its range.

International status

Uncommon and restricted in its distribution.

Existing legal protection in Britain

None.

Habitat

The giant (25 cm-long) goby lives in rock pools on the upper shore, often where salinity is low as a result of freshwater run-off. It prefers pools with bare rock bottoms or those containing filamentous green algae.

Threat

This species is targeted for collection by students and researchers, partly because it favours rock pools on the upper shore which are easily accessible. A number of scientists have used the species for DNA research. Although this work does not necessarily mean an animal has to be killed, the method of capture, usually by using an anaesthetic in the pool, can result in the animal's death. Selective sampling in this way can have a significant effect on small local populations. Results of recent distribution surveys have shown that in areas previously subjected to such sampling the giant goby was not recorded and may well

have been eliminated by these activities. In addition its 'place of shelter' is disturbed by educational and scientific surveys and, at sites near popular tourist resorts it is potentially threatened with destruction and degradation through public pressure and pollution.

Recommendation

Add to Schedule 5 for full protection under Section 9 of the Wildlife and Countryside Act, 1981.

Justification for recommendation

There has been an observed decrease in the range and numbers of this fish recently (Potts and Swaby 1993), as is borne out by its disappearance from sites popular with tourists, researchers and education establishments. Full protection is recommended because its 'place of shelter' is disturbed by people searching for it.

Benefits which would accrue from acceptance of the recommendation

Removal of specimens of the giant goby from the wild would be subject to control through licensing. However, *bona fide* researchers would be likely to be granted licences for taking the fish by less destructive methods, so the acquisition of knowledge needed to further the conservation of this species would not be hindered.

Reference

Potts, G.W. & Swaby, S.E. 1993. *A study of the distribution, status and potential vulnerability of the giant goby, Gobius cobitis in the British Isles*. Confidential report to the Joint Nature Conservation Committee, Peterborough.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Gobius couchii	Couch's goby
Type of animal: Fish	

Distribution in Great Britain

This recently described species is recorded in Britain only from the Helford estuary in Cornwall.

Distribution elsewhere

The only other country in which Couch's goby has been found is the Republic of Ireland, where it is known from two sites.

Status in Britain

Very rare.

International status

This species is rare in Ireland.

Existing legal protection in Britain

None.

Habitat

Existing information indicates that Couch's goby lives in rocky, intertidal areas, among seaweeds growing in sheltered places on muddy sand or rocks, or beneath stones in small pools of sea water. It is a small fish, growing to 9 cms in length.

Threat

The single British population is threatened because its habitat has been disturbed and its numbers reduced through collection by students and researchers. Marina development and pollution are also potential threats.

Recommendation

Add to Schedule 5 for full protection under Section 9 of the Wildlife and Countryside Act, 1981.

Justification for recommendation

This fish is known from only a single site in Britain and its numbers have decreased there over the last 15 years (Potts and Sawby 1991), probably as a result of collection. It is in danger of extinction. Full protection is recommended because not only is it taken, but its 'place of shelter' is threatened by people searching it out.

Benefits which would accrue from acceptance of the recommendation

Removal of specimens of the endangered Couch's goby from the wild would be subject to control through licensing. However, *bona fide* researchers would be likely to be granted licences, so the acquisition of knowledge needed to further the conservation of this species would not be hindered. Accidental taking of Couch's goby in mistake for the commoner gobies could be reduced through promoting general awareness of this species.

Reference

Potts, G.W. & Swaby, S.E. 1991. Marine fishes. British (non-bird) vertebrates Red Data Book. In: *Evaluation of the conservation requirements of rare British marine fishes*. Final Report. NCC CSD Report series No: 1228. Peterborough, Nature Conservancy Council.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Rana lessonae	Pool frog
Type of animal: Amphibian	

Distribution in Great Britain

There are a number of populations of the pool frog established in the wild in southern England which are presumed to have resulted from introductions from continental Europe. However, recent archaeological studies (Irving 1995) have indicated that at least one species of 'green' frog (believed to be *Rana lessonae*) occurred in Norfolk, Cambridgeshire and Lincolnshire during a period spanning the Bronze Age to the Middle Saxon period. It is now considered likely that the pool frog population possibly still present at a single site in Norfolk is native, rather than introduced. Other native populations may exist elsewhere in East Anglia.

Distribution elsewhere

Rana lessonae occurs throughout Europe from southern Sweden to Italy and eastwards to western Russia.

Status in Britain

The one known British population believed to be native may now be extinct, although at least one individual from this population exists in captivity. Other native populations may occur in other places in Norfolk, Cambridgeshire or Lincolnshire. Elsewhere in Britain the species is regarded as an introduction. The Norfolk population of the pool frog is perceptibly different from the Continental introductions and may differ genetically.

International status

Corbett (1989) reports that the species is threatened in Sweden and declining in Romania. *Rana lessonae* is listed on Appendix III of the Bern Convention and on Annex IV of the EC Habitats and Species Directive.

Existing legal protection in Britain

None, except that the Norfolk site is an SSSI.

Habitat

The pool frog is usually associated with small water bodies in fairly open, sunny positions. Outside the breeding season it may spend long period away from water. In its Norfolk site

it occurs in and around pingo pools (formed during the immediate post-glacial period in areas of permafrost) kept open by grazing.

Threats

There are a number of possible reasons for the decline of the Norfolk population, including reduction in grazing that has resulted in an increase in vegetation height and greater shading of ponds; predation by grass snakes; introduction of fish; pollution from atmospheric nitrogen; and eutrophication caused by Canada geese. Collection is a potential threat for any frogs which may remain in the wild because this population is (or was) perceptibly different from Continental European populations, making it more attractive than other British populations and more valuable to traders.

Recommendation

Addition to Schedule 5, with full protection under Section 9 of the Wildlife and Countryside Act, 1981. If definite proof is produced that one or more native populations exist in Britain, this species should also be listed on Schedule 2 of the Conservation (Natural Habitats etc) Regulations, 1994, in order to comply with the EC Habitats and Species Directive.

Justification for recommendation

The single known population believed to be native is either recently extinct in the wild or is in a precarious state and very vulnerable to collection. It is possible that this was (or is) the last remnant of a population widespread in Cambridgeshire, Lincolnshire and Norfolk until the drainage of the fens in the eighteenth and nineteenth centuries. However, further investigation of reports of 'green frogs' in this area may lead to the discovery of other populations. *Rana lessonae*, where native, requires protection under the EC Habitats and Species Directive. The precautionary principle should be applied and any population suspected to be native should be afforded full protection while definitive proof of its origin and status is sought. Licences for collection could still be issued for any populations definitely known to be introduced.

Benefits which would accrue from acceptance of the recommendation

Legal protection is a pre-requisite for re-introduction programmes which may be considered appropriate in the future, as well as being necessary for the conservation of any surviving remnants of the wild native population.

References

Corbett, K. 1989. *Conservation of European reptiles and amphibians*. London, Christopher Helm.

Irving, B. 1995. *Status of the pool frog Rana lessonae Camerano as a native British species based on zooarcheological evidence from the English fens.* Technical report 95/30 from the Environmental Archaeology Unit, University of York.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Atrina fragilis	Fan mussel
Type of animal: Bivalve mollusc	

Distribution in Great Britain

Atrina fragilis occurs off the south and west coasts of Great Britain, around Orkney and Shetland and off the east coast of Scotland.

Distribution elsewhere

It occurs along the western coast of Europe southwards to Spain and Portugal.

Status in Britain

Although widely distributed around Britain, this mollusc is very infrequently found. It is known to have disappeared recently from Salcombe Harbour, Devon. It was formerly common off Cornwall but is now rare (Holme 1995).

International status

There is no international protection for this species, but the related species *Atrina (Pinna) nobilis* is protected in other European countries.

Existing legal protection in Britain

None.

Habitat

The fan mussel lives attached to small stones or shells in mud, sandy mud or gravel. It occurs offshore, mainly in water over 50 m deep.

Threats

At 30 cms in length, *Atrina fragilis* is the largest European bivalve mollusc and is therefore attractive to collectors, both amateur divers and commercial concerns. Dredging and bottom trawling are also threats, although not targeted against the fan mussel.

Recommendation

Addition to Schedule 5, for protection under Sections 9(1), 9(2) and 9(5) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

This large mollusc is scarce in Britain and attractive to collectors. Its sustainability in the face of collecting is believed to be low because it is long-lived, slow-growing and takes lengthy periods to replace its numbers. Scheduling would not prevent accidental taking during fishing operations. Protection of the 'place of shelter' under Section 9(4) is not included in the recommendation because habitat damage may occur as an incidental result of fishing operations and could not reasonably be avoided. This makes it even more important to prevent the additional losses which may occur through intentional collection. The Mediterranean fan mussel is similarly threatened by divers and fishing gear (Hignette 1983).

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect the fan mussel against intentional killing, injuring and taking, also against possession and sale, whether by private individuals or commercial concerns.

Reference

Holme, N.A. 1995. Conservation of marine molluses in the British Isles. In: *The Conservation biology of Molluscs*. ed. by E.A. Kay, 29 - 32. Gland, IUCN.

Hignette, M. 1983. Croissance de *Pinna nobilis* (Mollusque Eulamellibranchie) après implantation dans la reserve sous-marin de Monaco. *Rapports et procés-verbaux des Réunions. Commission Internationale pour l'Exploration de la Mer Mediterranée.* 28(3), 237-238.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Bembecia chrysidiformis	Fiery clearwing moth
Type of animal:	Insect: order Lepidoptera

Distribution in Great Britain

The Fiery Clearwing is only known from one locality in the last 30 years: coastal cliffs near Folkestone, Kent. Earlier records are more widespread at scattered localities along the south coast of England including Devon (1888-1950), Dorset (1869), Hants (1851-1924), Sussex (1874), north Kent (1946) and Essex (1851-1859) and one inland record from the Forest of Dean (1902). It is possible that small colonies remain undetected elsewhere in the former range.

Distribution elsewhere

Central and southern Europe.

Status in Britain

This species is listed in the Insect Red Data Book (Shirt 1987) as Endangered. In the past, it was sometimes found in considerable numbers flying around the food plant and visiting other flowers, but in recent times it has been found only occasionally by determined search for the larvae.

International status

None.

Existing legal protection in Britain

None.

Habitat

The larvae tunnel in the thick roots of curled dock *Rumex crispus*, common sorrel *R. acetosa* and possibly water-dock *R. hydrolapathum*. Larvae are believed to take two years to develop and pupate within the plant, near ground level. The present site is an area of soft, chalky slippages on steep slopes and the food-plants grow on disturbed ground created by soil slippage. The adults are day flying and are believed to require high temperatures for activity.

Threats

The moth exploits food plants growing in ruderal habitats created by small-scale soil movements which are dependant on continued, slow erosion of the cliffs. This is threatened by coastal defences, which attempt to stop erosion, and consequently allow the once open ground to become covered in scrub.

The fiery clearwing is a very pretty moth and much sought after by collectors, who obtain specimens by uprooting food plants and searching for larvae and pupae in the roots. This is destructive of the habitat and it does not require much collecting pressure to have a considerable impact. The accessible breeding areas within the site have recently been reported to be denuded of large dock plants. although it is possible that the moth is also breeding in inaccessible areas on the cliff face. Specimens of the moth have been offered for sale in recent years.

Recommendation

Add to Schedule 5 of the Wildlife and Countryside Act, 1981, for full protection under Section 9.

Justification for recommendation

This species is currently known from one site and changes to the site are increasingly restricting the areas which are suitable for it. It is particularly vulnerable to collecting because the larval life is long and the usual collecting method is destructive to the habitat. Even a small amount of collecting pressure has the potential to drive it to extinction. There is evidence of recent pressure from collectors.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect the moth from collecting and sale and this, in conjunction with suitable habitat management of its only known site, are necessary to ensure its continued survival in Britain.

Reference

Shirt, D.K. ed. 1987. *British Red Data Books*: 2. *Insects*. Peterborough, Nature Conservancy Council.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Clavopsella navis	A marine hydroid
Type of animal: Cnidarian	

Distribution in Great Britain

Clavopsella navis has been found in Great Britain only in Widewater Lagoon, West Sussex, where it was discovered in 1973 and is abundant.

Distribution elsewhere

Only a few other records are known from elsewhere in the world. These are from the Kiel Canal, Germany, the Azores and a ship's hull in South Africa (Barnes 1994).

Status in Britain

Clavopsella navis is regarded as a threatened species in Great Britain.

International status

This species may be threatened at a global level, although world distribution is still to be determined. It is apparently no longer present in the Kiel Canal. Widewater Lagoon is the only place in the world where it can reliably be found.

Existing legal protection in Britain

This hydroid has no legal protection, but Widewater Lagoon is a West Sussex County Council Site of Nature Conservation Importance.

Habitat

Clavopsella navis occurs in a saline lagoon in Britain and has been recorded in harbours elsewhere in the world. Saline lagoons are listed on Annex I of the EC Habitats and Species Directive as a priority habitat. In Widewater Lagoon the hydroid lives attached to green filamentous algae *Chaetomorpha* species. Two other Schedule 5 species are present in Widewater Lagoon - *Edwardsia ivelli* and *Gammarus insensibilis*.

Threats

Clavopsella navis is potentially threatened by collecting by researchers, as it is so rare. Its habitat is threatened by pollution and coast defence works.

Recommendation

Addition to Schedule 5 for full protection under Section 9 of the Wildlife and Countryside Act, 1981.

Justification for recommendation

Clavopsella navis is possibly a globally threatened species. It lives in an extremely fragile habitat, which is in danger from man-induced changes. The single known British population requires protection against collection and destruction. The precautionary principle should be applied and the species should be regarded as globally threatened until proved otherwise.

Benefits which would accrue from acceptance of the recommendation

If scheduled, *Clavopsella navis* would receive protection from deliberate destruction, collection and disturbance. The presence of this species would be taken into account during development works such as coast defences, which may damage or destroy its 'place of shelter'.

Reference

Barnes, R.S.K. 1994. *The brackish-water fauna of northwestern Europe.* Cambridge, Cambridge University Press.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Coenagrion mercuriale	Southern damselfly
Type of animal: Insect: order Odonata	

Distribution in Great Britain

Coenagrion mercuriale is confined to a few southern and western counties in England and Wales. Its strongholds are in the New Forest and Pembrokeshire. Elsewhere it breeds at a few sites on the Dorset Heaths, the Devon pebble-bed commons, the Gower Peninsular, Mid Glamorgan, the Anglesey fens and the flood plains of the Rivers Itchen and Test in Hampshire.

Distribution elsewhere

The southern damselfly occurs in central and western Europe. It is absent from Ireland, but widespread in France, Spain and Portugal.

Status in Britain

It is included in the British Red Data Book (Shirt 1987) as Rare.

International status

Coenagrion mercuriale is listed on Annex II of the EC Habitats and Species Directive and on Appendix II of the Bern Convention.

Existing legal protection in Britain

None, apart from its occurrence on a number of SSSIs and National Nature Reserves.

Habitat

The southern damselfly breeds in runnels and streams, often but not exclusively in heathland. The water is usually calcareous, shallow and slow-flowing, over a gravel or marl bed, overlaid in places with organic detritus. The larvae are aquatic and the adults spend their lives near to the breeding places.

Threats

Cessation of grazing, resulting in streams becoming overgrown with rank vegetation, seems to be the main threat to many colonies. Other threats include enrichment of water courses by fertiliser run-off, dredging, drainage for agriculture and forestry and lowering of the water table as a result of water abstraction. Collecting probably has an insignificant impact on the populations at present.

Recommendation

Addition to Schedule 5 for full protection under Sections 9(1), 9(2), 9(4) and 9(5) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

The listing of this species on Annex II of the EC Habitats and Species Directive requires its maintenance "at a favourable conservation status". The inclusion of *Coenagrion mercuriale* on Appendix II of the Bern Convention requires Contracting Parties to take appropriate legislative measures to protect it against deliberate capture, keeping and killing, damage to or destruction of its breeding or resting sites, disturbance and trade.

The southern damselfly is confined to a fragile habitat which can easily be destroyed by drainage, dredging and water abstraction.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect the southern damselfly from collecting and sale, and, more significantly, against intentional damage to and destruction of its breeding sites. Acceptance of the recommendation would enable the UK to comply with the terms of the Bern Convention.

Reference

Shirt, D.K. ed. 1987. *British Red Data Books*: 2. *Insects*. Peterborough, Nature Conservancy Council.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Gortyna borelii	Fisher's estuarine moth
Type of animal:	Insect: order Lepidoptera

Distribution in Great Britain

Fisher's estuarine moth is confined to Hamford Water estuary, Essex where it breeds in six localities including four islands. Searches at the only other British locality for its larval food-plant have not revealed the moth.

Distribution elsewhere

This is a Mediterranean-Asiatic species which is extremely local in western Europe.

Status in Britain

It is listed in the Insect Red Data Book (Shirt 1987) as Vulnerable.

International status

None.

Existing legal protection in Britain

None.

Habitat

Larvae feed on hog's fennel *Peucedanum officinale*, a rare plant which is locally common in Hamford Water where it grows along sea walls, in marshes and farm fields and on the islands within the estuary. At one site, 10-20% of plants were estimated to show signs of larval damage in 1989, but the moth does not occur in all the places where the foodplant grows. Larvae burrow into the stems and later move into the roots where they may burrow to a depth of 30 cm. Pupation is usually in the soil adjacent to the plant, but sometimes within the larval tunnels. Adults fly at night.

Threats

Mowing of sea walls has caused considerable loss of foodplants and, because the species overwinters as eggs attached to dead stems of the foodplant or other nearby plant debris, may also affect the moth directly. Collecting of larvae and pupae involves uprooting

foodplants and destroys habitat. Large numbers of pupae have been offered for sale recently, although they are claimed to be of Continental origin.

Recommendation

Add to Schedule 5 of Wildlife and Countryside Act, 1981, for full protection under Section 9.

Justification for recommendation

This species is very vulnerable to collecting since this involves uprooting the foodplant and is destructive of the habitat, thus having a longer term effect than the removal of individuals. There is recent evidence for the digging up of food plants at the more accessible mainland colonies. Collectors, attempting to land without authority, have been turned away from nature reserve islands by the warden. This species is apparently difficult to breed in captivity and there is, therefore, continuing pressure on the wild population from collectors and dealers.

Mowing of sea walls at Beaumont Quay 1994 destroyed nearly all the foodplant at a time when larvae are likely to have been killed.

Benefits which would accrue from acceptance of the recommendation

Protection of the place of shelter should help prevent mowing of foodplants at times of year when larvae are vulnerable and would prohibit uprooting of foodplants. Collecting and sale would be regulated.

Reference

Shirt, D.K. ed. 1987. *British Red Data Books*: 2. *Insects*. Peterborough, Nature Conservancy Council.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Lucanus cervus	Stag beetle
Type of animal: Insect: order Coleoptera	

Distribution in Great Britain

The stag beetle is almost entirely restricted to the south and south-east of England, where it occurs in a broad belt extending from southern Essex, through the suburbs of London, to the coasts of Sussex, Hampshire and Dorset. There is a scatter of older records from both sides of the Welsh Borders, especially the Forest of Dean, and also from south-west England, the Midlands and north-west England. The stag beetle is occasionally imported with timber and some of the records from outside the 'normal' range, such as those in the Midlands and northern England, may represent such imports rather than resident populations. *Lucanus cervus* has been recorded from at least 23 10x10 km squares since 1980.

Distribution elsewhere

This beetle occurs throughout Europe excluding Ireland, Scandinavia, the southern part of the Iberian peninsular and Italy.

Status in Britain

Lucanus cervus is a Nationally Scarce insect (Nationally Scarce species are not included in the Red List, but occur in fewer than 101 10x10 km squares in Britain)

International status

The stag beetle is included in Annex II of the EC Habitats and Species Directive and Appendix III of the Bern Convention. It is regarded as rare or declining over much of Europe and is protected in a number of countries, including Germany, Switzerland, Hungary and Luxembourg (Bern Convention Group of Experts on Conservation of Invertebrates, 1994).

Existing legal protection in Britain

None, apart from its occurrence at least eleven SSSIs, including the New Forest.

Habitat

Stag beetle larvae are found in soft, decaying, non-coniferous timber, especially elm, ash, lime, beech and oak, and occasionally in decaying vegetation such as compost heaps. This

species can be common in suburban areas of London, as well as in certain ancient woodlands such as the New Forest.

Threats

There is some doubt about whether there has been a substantial contraction in the range of this beetle in Britain because of uncertainty about the resident status of records outside south-east England. However, it is believed to be threatened because of the loss of its dead wood habitat, particularly through the felling of ancient trees, the removal of stumps and boughs and the market in firewood (Hyman and Parsons 1992). The beetle benefited from the effects of Dutch elm disease, but this was a transient phase, as the supply of dead elm is now decreasing. The most pressing threat, however, is the increasing trade in this species, especially on mainland Europe, but also in Britain. Occasionally it is used for dissection to demonstrate insect structure in educational establishments, but it is sold largely as a curio in its adult stage.

Recommendation

Addition to Schedule 5 for protection only under Section 9(5) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

Because of its large size (length 7 cms) and fearsome appearance, the stag beetle is prized by collectors and there is a substantial trade in it, especially in Europe. As this species is protected in parts of Europe there is a danger that British populations, if left unprotected, will become targeted for collection and sale. The beetle is captured easily, as it comes to light.

Britain has an obligation under the Bern Convention to ensure that exploitation of animals listed on Appendix III of the Convention is regulated, in order to keep the populations out of danger.

Benefits which would accrue from acceptance of the recommendation

If the recommendation is accepted, trade in the stag beetle would be regulated.

Reference

Hyman, P.S. and Parsons, M.S. 1992. *A review of the scarce and threatened Coleoptera of Great Britain. Part 1.* UK Nature Conservation No. 3. Peterborough, Joint Nature Conservation Committee.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Alosa alosa	Allis shad
Type of animal: Fish	

Distribution in Great Britain

The allis shad occurs sporadically in inshore waters, predominantly on the west coast and around Scotland. No recent spawning sites have been recorded, but it is possible that breeding still occurs in rivers draining into the Solway Firth and Bristol Channel (Potts and Swaby 1993).

Distribution elsewhere

This species is found in the western Mediterranean and around north east Atlantic coasts from North Africa to Norway.

Status in Britain

This fish is very rare in Britain.

International status

The allis shad is listed on Appendix III of the Bern Convention and Annexes II and V of the EC Habitats and Species Directive.

Existing legal protection in Britain

This species is listed on Schedule 5 of the Wildlife and Countryside Act, 1981, in respect of Section 9(1) (killing, injuring and taking) only. It is also included on Schedule 3 of The Conservation (Natural Habitats etc) Regulations, 1994, which means that it should not be killed or taken by poison or explosives. Because it is listed on Annex II of the EC Habitats and Species Directive, Special Areas of Conservation will be designated to protect important breeding sites of the allis shad.

Habitat

The allis shad is an anadromous species which spends most of its life in coastal waters but migrates into fresh water to breed. In spring it penetrates far up rivers to spawn on stony bottoms in swiftly-flowing water. Juveniles may spend up to two years in the river before descending to the sea.

Threat

The allis shad is threatened by pollution of rivers and estuaries and is particularly vulnerable to modification of spawning sites and obstruction of migration routes by weirs or barrages. Commercial fishing and taking by anglers are also threats because the population is small.

Recommendation

Extend the present protection by including listing in respect of Section 9(4)(a) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

Protection under Section 9(4)(a) would make it an offence intentionally to damage, destroy or obstruct access to spawning areas. Since obstruction of migration routes and disturbance of spawning areas are primary threats to this fish, extending protection in this way is considered necessary in order to ensure that any remaining viable breeding populations are conserved. Article 7 of the Bern Convention requires Contracting Parties to take appropriate measures to ensure the protection of animals listed on Appendix III. Under the EC Habitats and Species Directive, Special Areas of Conservation will be proposed for some breeding sites, but others may not be covered by this mechanism, especially as identification of all the spawning beds has yet to be achieved.

Benefits which would accrue from acceptance of the recommendation

Acceptance of this recommendation would help to prevent damage to spawning areas and would encourage the construction of suitably designed fish passes around existing and new weirs and barrages, so allowing the allis shad access to its breeding sites.

Reference

Potts, G.W. and Swaby, S.E. 1993. *Marine fishes on the EC Habitats and Species Directive.* Confidential report to the Joint Nature Conservation Committee.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Eurodryas aurinia	Marsh fritillary butterfly
Type of animal: Insect: order Lepidoptera	

Distribution in Great Britain

The marsh fritillary butterfly is widespread in northern and western Britain, occurring in south-west England, Cumbria, western Wales and western Scotland.

Distribution elsewhere

Eurodryas aurinia occurs in most European countries, including Ireland. However, the populations in Spain, southern France and the Alps may belong to a different species.

Status in Britain

A comprehensive survey in 1990 showed proof of breeding in approximately 200 10 x 10 km squares in Britain. However, there has been a severe decline since records began, as the butterfly has been recorded from more than 600 10 x 10 km squares.

International status

This species is threatened throughout Europe. It is listed on Annex II of the EC Habitats and Species Directive and an Appendix II of the Bern Convention. In Northern Ireland it is given full protection by being included in Schedules 5 and 7 of the Wildlife (Northern Ireland) Order, 1985.

Existing legal protection in Britain

In 1989 *Eurodryas aurinia* was added to Schedule 5 for protection against sale only, under Section 9(5) of the Wildlife and Countryside Act, 1981.

Habitat

This butterfly is associated mainly with damp, unimproved grassland, although some populations occur on dry, calcareous grassland. The larval food-plant is devil's-bit scabious *Succisa pratensis*. It may exist as clusters of small populations which rely on small patches of suitable habitat within which there is periodic extinction and re-colonisation.

Threats

The marsh fritillary butterfly is threatened by the loss of unimproved grassland. In north Devon, for instance, 60% of the wet grassland has been lost over six years. Populations are at risk from collection, as many of the remaining colonies are very small. The present range is distorted by the release of captive-bred stock during re-introduction attempts, most of which fail.

Recommendation

Increase the protection at present afforded to *Eurodryas aurinia* under the Wildlife and Countryside Act, 1981 by adding protection under Sections 9(1), 9(2) and 9(4), in addition to Section 9(5).

Justification for recommendation

There has been a severe recent decline in the range of this butterfly, which is suffering from habitat destruction and collection, as well as from sale. Although Britain is a stronghold for this species, the current loss rate of colonies in this country is estimated to be at least 11% per decade, and is almost as high on protected as on unprotected sites (Warren 1994).

The inclusion of *Eurodryas aurinia* on Appendix II of the Bern Convention requires Contracting Parties to take appropriate legislative measures to protect it against deliberate capture, keeping and killing, damage to or destruction of its breeding or resting sites, disturbance and trade.

Benefits which would accrue from acceptance of the recommendation

Full protection under the Wildlife and Countryside Act would help to prevent collecting and the intentional destruction of the marsh fritillary butterfly's sites. Acceptance of the recommendation would enable the UK to comply with the terms of the Bern Convention.

Reference

Warren, M.S. 1994. The UK status and suspected metapopulation structure of a threatened European butterfly the marsh fritillary *Eurodryas aurinia*. *Biological Conservation*, **67**, 239-249.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Lycaena dispar	Large copper butterfly
Type of animal: Insect: order Lepidoptera	

Distribution in Great Britain

Lycaena dispar dispar, the endemic British sub-species of the large copper butterfly, was once common in East Anglia, but became globally extinct in 1851, as a result of the drainage of the fens and collecting. The very similar Dutch subspecies *Lycaena dispar batavus* was introduced to Woodwalton Fen National Nature Reserve in Cambridgeshire in 1927 and this remains its only site in Britain.

Distribution elsewhere

Outside Britain the subspecies *Lycaena dispar batavus* occurs only in a single site in Freisland, Holland. Other subspecies are more widespread in southern and eastern Europe, but generally have rather different habitat preferences.

Status in Britain

The population at Woodwalton Fen is in danger of extinction.

International status

Lycaena dispar is listed on Appendices II and IV of the EC Habitats and Species Directive and on Appendix II of the Bern Convention. It is included in the Red Data List for Holland.

Existing legal protection in Britain

Lycaena dispar is included in Schedule 5 of the Wildlife and Countryside Act, 1981, but is protected in respect of Section 9(5) (sale) only. Despite being listed on Appendix IV of the EC Habitats and Species Directive, it is not included in Schedule 2 of the Conservation (Natural Habitats etc) Regulations, 1994.

Habitat

The large copper butterfly requires large areas of reedfen. The caterpillar's food-plant is the great water dock *Rumex hydrolapathum.*

Threats

The single wild British population of *Lycaena dispar batavus* is small, inbred and not performing well. It is vulnerable to collection. Until recently the wild colony was supplemented with greenhouse-bred stock, and this has in the past been raided by collectors. There is a danger that the *Lycaena dispar batavus* colony may hybridise with large copper butterflies of a third subspecies, *Lycaena dispar rutilus*, which has occasionally been released illegally in Britain, but so far has failed to become established in the wild. This subspecies is clearly different from both *Lycaena dispar dispar* and *Lycaena dispar batavus* and is native to central and eastern Europe.

Recommendation

Increase the protection at present afforded to *Lycaena dispar batavus* by scheduling it in respect of Sections 9(1), 9(2) and 9(4) of the Wildlife and Countryside Act, 1981, in addition to Section 9(5).

Justification for recommendation

The small population at Woodwalton Fen appears unable to sustain itself unaided and is seriously inbred. English Nature, as part of its recovery programme for this species, is planning a new introduction in the Norfolk Broads. This would involve establishing populations in several large sites with public access in which it would be vulnerable to collecting. Affording the butterfly full protection, as has already been done for the large blue butterfly, should ensure that conservation efforts are not compromised by collecting.

The inclusion of *Lycaena dispar* on Appendix II of the Bern Convention requires contracting parties to take appropriate legislative measures to protect it against deliberate capture, keeping and killing, damage to or destruction of its breeding or nesting sites, disturbance and trade. This obligation may apply to the British population, despite the fact that it is introduced.

Benefits which would accrue from acceptance of the recommendation

The introduced subspecies *Lycaena dispar batavus,* which is very similar to the extinct British subspecies, would gain extra protection against collection, so safeguarding further attempts to establish it in the wild.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Margaritifera margaritifera	Pearl mussel
Type of animal: Bivalve mollusc	

Distribution in Great Britain

In Scotland *Margaritifera margaritifera* is still abundant in some rivers in the north and west. The species is also known from the south west of England, Yorkshire, Cumbria, Northumberland and Wales.

Distribution elsewhere

The freshwater pearl mussel occurs in Ireland and on the Continent in Belgium, Holland, France, Scandinavia, Germany, Austria and eastern European countries.

Status in Britain

There is little up-to-date information on the status of British populations, although many located in the 1960s and 1970s were not re-located in recent surveys. A survey of the River Wye in the 1992/93 showed that small numbers of large mussels were still present, but no juveniles could be found.

International status

The pearl mussel is in decline over the whole of Europe. It is regarded by the IUCN as Vulnerable globally (Wells, Pyle and Collins 1983) and is listed on Annexes II and V of the EC Habitats and Species Directive and on Appendix III of the Bern Convention. It is included in Schedule 7 of the Wildlife (Northern Ireland) Order, 1985, which means that sale is prohibited. In many countries of Continental Europe it receives full protection.

Existing legal protection in Britain

In 1991 *Margaritifera margaritifera* was added to Schedule 5 of the Wildlife and Countryside Act, 1981, in respect only of killing and injuring under Section 9(1).

Habitat

The species is usually restricted to rivers which are relatively poor in lime and which possess a moderate current and relatively low water temperature. Typically the mussels are found in water 0.5 to 1.5m deep in a mixture of boulders, stones and sand. The mussel larvae are parasitic on the gills of fish, usually trout.

Threats

In Britain, some of the populations are senescing, with recruitment being very slow or non-existent (Young 1991). Pearl mussels take 12-15 years to mature and live on average for about 60 years. They are therefore very vulnerable to collecting, which is carried out because there is a large trade in freshwater pearls. Removal of pearls without damaging the mussels, followed by return of the mussels to the water, is legal. However, there is evidence, based on the discovery of piles of dead shells on river banks in Scotland, of an ongoing and major threat from illegal methods of pearl fishing, probably by 'amateur' collectors. *Margaritifera margaritifera* is also threatened by dredging, siltation of watercourses, pollution, acidification and the obstruction of movement of the migratory host fish.

Recommendation

Extend the protection against killing and injuring currently afforded to the pearl mussel to include provisions under Section 9(5) of the Wildlife and Countryside Act, covering sale.

Justification for recommendation

Because the pearl mussel is listed on Appendix III of the Bern Convention and on Annex V of the EC Habitats and Species Directive, the UK has a duty to ensure that the exploitation of this species is regulated if necessary.

At present, enforcement of the law is difficult because it is almost impossible to catch someone in the act of killing or injuring a pearl mussel. If a licence were required for the sale of mussels or their derivatives, or for offering them for sale, possessing, transporting or advertising them for sale, this would deter 'amateur' collectors. The few professional fisherman and retailers of pearls could be licensed, so that their livelihoods were not affected. At first sight a better solution might be to prohibit taking under Section 9(1). However, there are no provisions in the Wildlife and Countryside Act for licensing taking for commercial purposes, so it would not be possible to issue licences to responsible commercial fishermen. Use of Section 9(5) of the Act is therefore considered to be the best way forward.

Benefits which would accrue from acceptance of the recommendation

The measure recommended would allow sustainable exploitation of the pearl mussel through licensing, while outlawing irresponsible commercial collection. It is hoped that this recommendation will be supported by professional pearl fisherman (of which there are about a dozen operating in Britain) and by retailers of freshwater pearls, as the measure would safeguard their long-term interests.

References

Wells, S.M., Pyle, R.M. and Collins, N.M. 1993. *The IUCN Invertebrate Red Data Book.* Gland, International Union for the Conservation of Nature and Natural Resources.

Young, M.R. 1991. Conserving the freshwater pearl mussel (*Margaritifera margaritifera* (L.)) in the British Isles and Continental Europe. *Aquatic Conservation: Marine and Freshwater Ecosystems*, **1**, 73-77.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Hadena irregularis	Viper's bugloss moth
Type of animal: Insect: Order Lepidoptera	

Distribution in Great Britain

The viper's bugloss moth has only been reliably recorded in Britain from the Norfolk Brecklands.

Distribution elsewhere

Hadena irregularis is widespread in Europe and Asia.

Status in Britain

It is now considered extinct in Britain. A survey of localities for the food-plant was conducted in 1985 and the best sites were revisited in 1989 without successfully finding the moth. There have been no reports of adults coming to light, despite many attempts at trapping in former haunts.

International status

This moth is rare or local in France, Holland and Sweden.

Existing legal protection in Britain

Hadena irregularis is fully protected under Section 9 of the Wildlife and Countryside Act, 1981. It was added to Schedule 5 in 1988.

Habitat

The vernacular name of this moth is misleading, as its larvae live not on viper's bugloss but on Spanish catchfly *Silene otitis*. The caterpillar feeds on developing seed capsules of this plant, which in Britain is a rare species occurring mainly in disturbed areas of chalk grassland in the Brecklands of East Anglia.

Threats

In the past this moth may have declined as a result of changes in agricultural practices, building development and afforestation, all of which reduced its habitat. Intensive grazing and mowing of remaining areas supporting Spanish catchfly prevented it producing flower

heads, thus depriving the larva of its food. Collecting may have exacerbated the decline of the moth, but there is no evidence for this.

Recommendation

Remove from Schedule 5.

Justification for recommendation

There have been no confirmed records for *Hadena irregularis* in Britain since the late 1970s (Waring 1988), despite thorough searches. In 1994 the last possible site for this moth, an East Anglian air-base previously inaccessible to surveyors, was checked and found to be unsuitable. The species is now regarded by entomologists within English Nature and the Joint Nature Conservation Committee as extinct in Britain.

Reference

Waring, P. 1988. Vipers' bugloss moth *Hadena irregularis* already extinct? *Moth Conservation Project News Bulletin No. 1*, 19-20. Peterborough, Nature Conservancy Council.

3.2 Recommendations for amendments to Schedule 8

The table below summarises the Joint Nature Conservation Committee's recommendations for amendments to Schedule 8. The list also functions as an index to the detailed cases for these amendments, which follow the table.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Dianthus armeria	Deptford pink
Type of plant: Flowering plant: family Caryophyllaceae	

Distribution in Great Britain

The Deptford pink occurs as native at scattered sites in southern England as far north as Lincolnshire, and in Wales. It has been recorded in about 15 sites since 1990. It also occurs as a casual or an introduction in northern England and Scotland (Stewart *et al.* 1994).

Distribution elsewhere

It is distributed over most of Europe northwards to southern Sweden and Finland, and occurs in the Caucasus. It is introduced to North America.

Status in Britain

The Deptford pink is included in the recently revised British Red List as Vulnerable. At many of its sites it is present in small numbers, and the British population is becoming increasingly fragmented.

International status

According to the World Conservation Monitoring Centre, this species is not included in the Red Data List for any country.

Existing legal protection in Britain

None, apart from the general protection against intentional, unauthorised uprooting, afforded to all wild plants under Section 13(1)(b) of the Wildlife and Countryside Act, 1981.

Habitat

The Deptford pink grows in dry pastures, field borders, hedgerows and railway sidings on light, sandy, basic soil and sometimes on peat. Because it prefers short grassland and anthills, and dies out when shaded by coarse grasses or shrubs, it requires grazing or some other form of disturbance.

Threats

This plant is threatened by deterioration of old pastures through lack of grazing, by agricultural improvement through the use of herbicides and fertilisers, by conversion of pasture to arable land and by loss of pasture to building land. The plant continues to survive at present in small pockets of grassland, but populations are becoming fragmented and thus more prone to extinction. The Deptford Pink is an attractive and increasingly rare plant, potentially threatened by collection.

Recommendation

Addition to Schedule 8, with full protection under Sections 13(1)(a) and 13(2) of the Wildlife and Countryside Act, 1981 in England and Wales only.

Justification for recommendation

This species has declined rapidly in Britain, having been lost from up to 75% of its 10 x 10 km squares in the period 1950 to 1995. Unless this trend is halted, the species is likely to become endangered in the future. Collecting and habitat destruction would accelerate the process of decline. Scotland is excluded from the recommendation because this plant is not native there.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect this species from picking and from intentional destruction through the ploughing or spraying of grassland. Scheduling would also help to prevent destruction of the plant's habitat through building and other development, and would encourage ameliorative measures to be taken in the face of unavoidable urbanisation.

Reference

Stewart, A., Pearman, D.A. and Preston, C.D. 1994. *Scarce plants in Britain.* Peterborough, Joint Nature Conservation Committee

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Eleocharis parvula	Dwarf spike-rush
Type of plant: Flowering plant: family Cyperaceae	

Distribution in Great Britain

Dwarf spike-rush occurs in two widely separate areas of Great Britain, the coasts of southern England and of north and mid Wales. Post-1990 records are of small colonies in the River Avon, Devon, in Christchurch Harbour, Dorset, and in the Beaulieu River, Hampshire, and of larger populations in the estuary systems of the Afon Glaslyn, Afon Dwyryd and Afon Mawddach, in Gwynedd.

Distribution elsewhere

This plant also occurs in Europe, Russia, Africa, Japan and the American continent.

Status in Britain

Eleocharis parvula is included in the recently revised British Red List as Vulnerable.

International status

This species is included in the Red Data Lists of Ireland, Japan, Romania, Norway, Latvia, Poland and Denmark. It is specially protected in Northern Ireland under the Wildlife (Northern Ireland) Order, 1985.

Existing legal protection in Britain

None, apart from the general protection against intentional, unauthorised uprooting, afforded to all wild plants under Section 13(1)(b) of the Wildlife and Countryside Act, 1981.

Habitat

Elocharis parvula grows in tidal river, ditch and creek margins and in shallow, periodically-flooded pools in upper saltmarsh. The plant does not grow in water more than 30 cm deep, but needs periods of exposure on wet mud in order to flower. At one site in Gwynedd it grows with Welsh mudwort *Limosella australis,* an endangered plant added to

Schedule 8 in 1992. In saltings and saltmarsh sites grazing by domestic animals is needed to prevent *Eleocharis parvula* being out-completed by tall-growing plants.

Threats

Potential threats to this species include insufficient grazing, leading to successional changes in the vegetation; direct destruction of its habitat through modifications to coast defences, changes in tidal river management or land reclamation; water pollution; the spread of invasive species such as cord grasses *Spartina* species; gross coastal erosion; and sea level rise as a result of climate change.

Recommendation

Addition to Schedule 8, with full protection under Sections 13(1)(a) and 13(2) of the Wildlife and Countryside Action, 1981.

Justification for recommendation

Eleocharis parvula has been known from 11 estuarine systems in Britain (Byfield 1992), but has become extinct in all except the six mentioned previously. Some of the remaining populations are very small and some are potentially at risk from coastal developments. The plant is threatened not only in Britain but in a number of other countries.

Benefits which would accrue from acceptance of the recommendation

Scheduling would give *Eleocharis parvula* protection against direct destruction through deliberate damage to its habitat. Although no direct protection would be afforded against unsuitable grazing regimes, invasive species, erosion or sea level rise, publicity as a result of scheduling may help to ameliorate these threats.

Reference

Byfield, A.B. 1992. *The status of Eleocharis parvula in Britain (excluding Ireland).* Unpublished report to English Nature South Region.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Hyacinthoides non-scripta	Bluebell
Type of plant: Flowering plant: family Liliaceae	

Distribution in Great Britain

The bluebell occurs throughout Britain except in Orkney and Shetland.

Distribution elsewhere

The plant is scattered through western Europe, mainly in France, The Netherlands and Belgium. It is naturalised in central Europe.

Status in Britain

The bluebell is a common and widely distributed plant in Britain.

International status

Hyacinthoides non-scripta does not appear on the Red Data List for any country.

Existing legal protection in Britain

None, apart from the general protection against intentional, unauthorised uprooting afforded to all wild plants under Section 13(1)(b) of the Wildlife and Countryside Act, 1981.

Habitat

The bluebell occurs typically in deciduous woodland, especially coppice, where it may dominate the ground flora. It can be common in other shady places such as hedgerow bottoms and under bracken. In the west of Britain is also found in more open habitats, such as coastal grassland.

Threats

In areas where bluebells grow prolifically they are increasingly being exploited for commercial purposes. There have been recent cases of woodlands being stripped of tens of thousands of bluebell bulbs for sale to garden centres and bulb growers. Some of this uprooting has been done with the landowners' permission, and thus legally, and some has

been unauthorised and therefore illegal under the Wildlife and Countryside Act. Large quantities of bluebell bulbs labelled as harvested from the wild are on sale in some garden centres. Bulbs have recently been found to contain pharmaceutically active substances and this poses a further potential threat because there may be an increased demand for large quantities of bulbs taken from the wild.

Bluebells continue to be lost when deciduous woodland is cleared, although this loss is significant only locally. A further threat is grazing by the introduced muntjac deer, which can reduce the size and vigour of bluebell colonies in woods where the deer is abundant.

Recommendation

Addition of *Hyacinthoides non-scripta* to Schedule 8, for protection under Section 13(2) of the Wildlife and Countryside Act (sale only).

Justification for recommendation

Although *Hyacinthoides non-scripta* is in no immediate danger of extinction nationally, the wholesale removal of thousands of bulbs, if it continues, will have a great impact on this species and will endanger the existence of bluebell woods as they are now known. Great Britain holds a large proportion of the world's population of the bluebell, as it is much less common elsewhere in Europe. This country therefore has an international responsibility for the conservation of this species.

Protection against sale under Section 13(2), would make the selling of bluebells taken from the wild illegal, but would still allow the sale of cultivated plants. Under Section 13(4) of the Act, if a trader were to have proceedings brought against him or her for the offence of selling bluebells, it would be the seller's responsibility to prove that the plants had not been taken from the wild. Traders would not need to apply for a licence to sell cultivated stock, but an authentification scheme may be necessary for garden-bred plants.

Benefits which would accrue from acceptance of the recommendation

Scheduling in respect of sale only would remove the incentive for wholesale uprooting of bulbs from the wild with or without a land-owner's permission. This would extend the protection already afforded by Section 13(1)(b) against unauthorised uprooting.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Leersia oryzoides	Cut-grass
Type of plant: Flowering plant: family Gramineae	

Distribution in Great Britain

At present cut-grass is known to occur in two sites in West Sussex and one in Surrey. The colony in Surrey is a translocation. The plant may also still be present in Somerset, but the last confirmed record was in 1990.

Distribution elsewhere

This species occurs in Europe north to Sweden and Finland, in temperate Asia and in North America. It has decreased in Europe.

Status in Britain

Leersia oryzoides is included in the recently revised British Red Data List as Endangered.

International status

This species does not appear in the Red Data Lists for any other country, according to the World Conservation Monitoring Centre.

Existing legal protection in Britain

None, apart from the general protection against intentional, unauthorised uprooting afforded to all wild plants under Section 13(1)(b) of the Wildlife and Countryside Act, 1981, and the plant's occurrence within an SSSI.

Habitat

Cut-grass grows on ditch margins, canal banks and pond edges. Its stronghold is Amberley Wildbrooks SSSI in Sussex, where it occurs on ditch margins. In Surrey the plant persists at a translocation site on the bank of the Basingstoke Canal, to which it was moved from its original site, which was destroyed by canal restoration works. The record from Somerset was from the bank of the Bridgewater-Taunton Canal.

Threats

This water-margin plant is threatened by drainage and the loss of ditch systems; by intensive management of ditch and canal margins; by maintenance works on canal banks; and by under-grazing, which can lead to the growth of tall vegetation which out-competes *Leersia oryzoides*.

Recommendation

Addition to Schedule 8, with full protection under Sections 13(1)(a) and 13(2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

Leersia oryzoides has been recorded from 21 10x10 km squares in Britain, but probably now occurs in only three. Within the last 30 years it has disappeared from Dorset and Hampshire and possibly also from Somerset. At most of its remaining sites the populations are small or unstable. The species is in danger of extinction in Britain.

Benefits which would accrue from acceptance of the recommendation

The plant would gain protection from deliberate destruction if it were scheduled. Land owners would be made aware of the needs of *Leersia oryzoides* and would be encouraged to take these into account during the management of ditches, canals and other water margins where the plant grows.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Tephroseris integrifolia subspecies *maritima*	South Stack fleawort
Type of plant: Flowering plant: family Compositae	

Distribution in Great Britain

This plant is found only in Anglesey, North Wales.

Distribution elsewhere

This subspecies is found nowhere else in the world.

Status in Britain

Tephroseris integrifolia subspecies *maritima* is included in the revised Red List as Vulnerable.

International status

As it is endemic to Wales, this plant also meets criteria for being classified as Vulnerable at a world level.

Existing legal protection in Britain

None, apart from the general protection against intentional, unauthorised uprooting afforded to all wild plants under Section 13(1)(b) of the Wildlife and Countryside Act, 1981.

Habitat

This plant grows in a number of places on maritime cliffs on the north-west coast of Anglesey. The plants are found on the grassy tops of the cliffs and on ledges and in crevices on the cliff faces.

Threats

Because there are so few individuals of this plant, its existence is threatened by accidents such as landslips and fire, and possibly by incidental damage from rock climbing. As the plant is large (up to nearly a metre tall), with showy yellow flowers, it may also be threatened by uprooting and picking in its more accessible sites.

Recommendation

Addition to Schedule 8, with full protection under Sections 13(1)(a) and 13(2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

Tephroseris integrifolia subspecies *maritima* is a threatened endemic plant. If it is lost from its few localities in Britain it will become globally extinct. The risk of accidental extinction, which is high because of the small population, is exacerbated by the possibility that the plant may be collected.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect this plant from uprooting, picking and deliberate destruction.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE & COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Anomodon longifolius	Long-leaved anomodon
Type of plant: Moss	

Distribution in Great Britain

Only four scattered sites are known, in Northern England, Scotland and south Wales.

Distribution elsewhere

This moss is widespread in northern Europe eastwards to Siberia, in the Russian far east and in Japan.

Status in Britain

This species is included in the revised British Red List as Endangered.

International status

Not threatened.

Existing legal protection in Britain

All wild plants are protected against intentional, unauthorised uprooting (i.e. removal) by Section 13 (1) (b) of the Wildlife and Countryside Act, 1981. Most of this plant's sites are within SSSIs.

Habitat

This moss occurs on steep or vertical, shaded limestone or basic sandstone, often in wooded valleys and ravines and on limestone rock ledges.

Threats

Collecting is a potential threat to this moss, as it is a relatively distinctive species with some of its sites in accessible places. It is possible that it is sensitive to atmospheric pollution.

Recommendation

Add to Schedule 8 for full protection under Sections 13 (1) (a) and 13 (2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

This species is rare in Britain and has shown a marked decline, although the cause of this is unknown. Of a total of thirteen 10x10 km squares from which it has been recorded, *Anomodon longifolius* has been found in only four since 1950 and may now occur only at two sites. Spore-producing capsules are unknown in Britain, and it lacks the specialised means of vegetative reproduction found in some mosses, so it is unlikely to be an efficient recoloniser. This emphasises the importance of existing populations. Populations are small, some of them are accessible and therefore vulnerable to collection.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect the plant from collecting.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE & COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Bryum neodamense	Long-leaved threadmoss
Type of plant: Moss	

Distribution in Great Britain

Two sites are known, one on the Lancashire coast, the other on the Caithness coast. It may also still occur in a single site in Wales.

Distribution elsewhere

This moss is found in Northern Europe south to the Pyrenees and the mountains of central Europe, also in Siberia, central Asia, Alaska, Canada and Greenland.

Status in Britain

Bryum neodamense is included in the revised British Red List as Endangered.

International status

Rare in Europe.

Existing legal protection in Britain

All wild plants are protected against intentional, unauthorised uprooting (i.e. removal) by Section 13 (1) (b) of the Wildlife and Countryside Act, 1981. One of this moss's sites is a National Nature Reserve.

Habitat

In Britain, this moss occurs in coastal dune slacks and in wet ground at the margins of a loch near the coast.

Threats

Collecting and afforestation, also possibly recreational pressure and scrub development, threaten this very habitat-specific moss.

Recommendation

Add to Schedule 8 for full protection under Sections 13 (1) (a) and 13 (2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

This very distinctive species is very rare in Britain and has shown a decline from a total of eight 10x10 km squares to three in which it has been recorded since 1950. It may now occur at only two of these. Populations are small and vulnerable to collection. Habitats of this moss are fragile and even small destructive changes could adversely affect the plant.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect the moss from collecting. The presence of this plant would be taken into account during any proposed coastal defence works or leisure developments.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE & COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Desmatodon cernuus	Flamingo moss
Type of plant: Moss	

Distribution in Great Britain

This moss is confined to a small area of South Yorkshire.

Distribution elsewhere

Desmatodon cernuus circumpolar in distribution, reaching north to the high arctic in Spitsbergen, Ellesmere Island and northern Greenland, and south to the mountains of central Asia, New Mexico and central and eastern Europe.

Status in Britain

Flamingo moss is included in the revised British Red List as Endangered.

International status

Rare in Europe.

Existing legal protection in Britain

All wild plants are protected against intentional, unauthorised uprooting (i.e. removal) by Section 13 (1) (b) of the Wildlife and Countryside Act, 1981.

Habitat

This moss is a ruderal plant of highly calcareous soil, characteristically on lime-waste and quarry spoil in or near Magnesian limestone quarries.

Threats

The main threat to this plant is the deliberate modification of its habitat. This occurs through landscaping of 'unsightly' disused quarries and derelict sites and through tipping rubbish. It is also under threat from neglect, as its open habitat is likely to be invaded by more permanent vegetation.

Recommendation

Add to Schedule 8 for full protection under Sections 13 (1) (a) and 13 (2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

This species has been recorded from four 10x10 km squares in the UK since 1950, out of a total of nine, so it has disappeared from many of its former localities. It may now occur at only a single site. Changes in land use and land reclamation are probably the main reasons for this. Although it is a ruderal species and commonly produces spore-bearing capsules, it seems to be inefficient at colonising new territory, and therefore the sites at which it occurs are of great importance. It is also very habitat-specific, so the amount of new ground available for colonisation is limited.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect this moss from deliberate destruction because its presence would be taken into account during any development or reclamation work.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE & COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Hygrohypnum polare	Polar feather-moss
Type of plant: Moss	

Distribution in Great Britain

This species is known from a single site in north-west Scotland.

Distribution elsewhere

This is a circumpolar species, found mainly in the Arctic and in the mountains of central Asia, with a few sites south of the Arctic Circle in Europe and North America.

Status in Britain

Hygrohypnum polare is included in the revised British Red List as Vulnerable.

International status

Not threatened.

Existing legal protection in Britain

All wild plants are protected against intentional, unauthorised uprooting (i.e. removal) by Section 13 (1) (b) of the Wildlife and Countryside Act, 1981. This moss's known site is within an SSSI.

Habitat

This moss grows on basic schist boulders at the margin of a small lochan subject to marked fluctuations in water level, at 670m altitude.

Threats

Collecting by botanists is the main threat, as the population is very small and confined to a single, identifiable lochan. Global warming is a potential threat.

Recommendation

Add to Schedule 8 for full protection under Sections 13 (1) (a) and 13 (2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

Since this very rare plant occurs at only one site, and in small quantity, it is very vulnerable to collection. The single site for the plant in Britain is of great botanical and phytogeographical importance.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect this plant against collecting.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE & COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Alectoria ochroleuca	Alpine sulphur tresses
Type of plant: Lichen	

Distribution in Great Britain

This lichen is now confined to high ground in the Cairngorm area, but was formerly also known elsewhere in Scotland, from Sutherland and from the Grampians.

Distribution elsewhere

Alectoria ochrolenca is widely distributed in the colder regions of both northern and southern hemispheres.

Status in Britain

Alpine sulphur tresses is included in the revised British Red List as Vulnerable.

International status

Not threatened.

Existing legal protection in Britain

All wild plants are protected against intentional, unauthorised uprooting (i.e. removal) by Section 13 (1) (b) of the Wildlife and Countryside Act, 1981. This lichen occurs within the Cairngorm National Nature Reserve, but most records are from outside protected areas.

Habitat

This lichen grows in exposed, acidic moss and crowberry (*Empetrum* species) communities between 780m and 910m altitude, on Scottish mountains.

Threats

Reasons for the apparent decline of this species are not known. There is a risk from trampling at some localities, which are on ridges used by walkers. The plant is potentially threatened by skiing-related and other recreational developments. Collection is a threat, as this is an attractive species.

Recommendation

Add to Schedule 8 for full protection under Sections 13 (1) (a) and 13 (2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

This is a large, attractive species vulnerable to collection and it grows in areas that are often accessible to walkers and botanists. It has declined markedly, having been recorded in only two of its previous thirteen 10x10 km squares since 1980, although the reasons for this are not known. Remaining populations therefore need to be safeguarded.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect this plant from collection. As a scheduled plant, its presence would need to be taken into account during the planning of recreational developments in the Cairngorms.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE & COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Catolechia wahlenbergii	Goblin lights
Type of plant: Lichen	

Distribution in Great Britain

The centre of this lichen's distribution is high ground in the Ben Nevis range, with outlying localities on mountains in Lochaber and Skye.

Distribution elsewhere

This plant has an arctic-alpine distribution in Europe and also occurs in North America.

Status in Britain

Goblin lights is included in the revised British Red List as Vulnerable.

International status

Unknown.

Existing legal protection in Britain

All wild plants are protected against intentional, unauthorised uprooting (i.e. removal) by Section 13 (1) (b) of the Wildlife and Countryside Act, 1981. Several of this plant's sites are within SSSIs.

Habitat

This lichen grows on high mountains on acid soils and in rock crevices, occasionally overgrowing bryophytes. The Skye records are of isolated plants on the gabbro rock of the main ridge.

Threats

Collecting of this elegant lichen is a serious threat. Climbers and walkers may inadvertently damage the colonies. Tourist or leisure activities such as skiing developments may also threaten this plant.

Recommendation

Add to Schedule 8 for full protection under Sections 13 (1) (a) and 13 (2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

This is a rare, attractive lichen very vulnerable to collection. Colonies are mostly small and easily damaged.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect this lichen from collection. The presence of the plant would be taken into account during any development activities such as the construction of skiing facilities.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE & COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Cladonia convoluta	Convoluted cladonia
Type of plant: Lichen	

Distribution in Great Britain

This lichen occurs in scattered sites in southern England, from Somerset (Mendips) through Hampshire eastwards to the Sussex coast and downs.

Distribution elsewhere

It is present in the Channel Islands, continental Europe, north Africa and south-west Asia.

Status in Britain

This lichen is included in the revised British Red List as Vulnerable.

International status

Unknown.

Existing legal protection in Britain

All wild plants are protected against intentional, unauthorised uprooting (i.e. removal) by Section 13 (1) (b) of the Wildlife and Countryside Act, 1981. Some of this plant's sites are SSSIs.

Habitat

This species grows in open calcareous and coastal grasslands. At one site it grows on coastal shingle.

Threats

As a species of open ground in attractive and accessible sites, this plant is subject to threat from trampling and collection. Inappropriate grazing regimes, being either too intensive or not intensive enough, may result in changes to the grassland swards and elimination of the species. On the Sussex coastal site there is the possibility that the species is threatened with sea-level rise inundating its shingle foreshore habitat.

Recommendation

Add to Schedule 8 for full protection under Sections 13 (1) (a) and 13 (2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

This is a very rare and attractive species of exceptionally high quality open habitats. It is vulnerable to collection. It has declined in Britain from a total of sixteen 10x10 km squares to the five where it has been recorded since 1980.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect the plant from collection. The presence of this lichen would be taken into account during any developments that might affect it.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE & COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Enterographa elaborata	New Forest beech-lichen
Type of plant: Lichen	

Distribution in Great Britain

This species is confined to a single tree in the New Forest, Hampshire.

Distribution elsewhere

It occurs in Northern Ireland (Fermanagh), western Europe from the Pyrenees north to Denmark and southern Sweden, the Azores and Madeira.

Status in Britain

This lichen is included in the revised British Red List as Critically Endangered.

International status

Unknown.

Existing legal protection in Britain

All wild plants are protected against intentional, unauthorised uprooting (i.e. removal) by Section 13 (1) (b) of the Wildlife and Countryside Act, 1981. This plant's site is within an SSSI.

Habitat

This lichen grows on ancient, moribund, standing beech pollards, in crevices that are subjected to flushing with water and nutrients.

Threats

This species was considered extinct until rediscovered in 1993 on a single tree. It is threatened by the continued exploitation of dead wood in the New Forest, the growth of holly and the scarcity of suitable trees for the plant to colonise when its current one rots away.

Recommendation

Add to Schedule 8 for full protection under Sections 13 (1) (a) and 13 (2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

This lichen is known from only one site, where it is threatened by the demise its host tree. It is therefore very important to conserve the colony by preventing damage or destruction of the host tree and to concentrate on securing appropriate management for the host tree and for surrounding trees that have the potential for being colonised by the plant.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect the colony from deliberate destruction through damage to or removal of the host tree. *Enterographa elaborata* is also a good 'flagship species' to enhance awareness of the need to manage veteran and decaying trees within actively managed wood pastures for the benefit of their epiphytic lichen flora.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Battarraea phalloides	Sandy stilt puffball

Type of plant: Basidiomycete fungus

Distribution in Great Britain

Only three current sites are known, two in Somerset and the third a Wildlife Trust reserve in Suffolk.

Distribution elsewhere

This species is scattered throughout western Europe, but rare everywhere. It also occurs elsewhere, including Asia.

Status in Britain

The sandy stilt puffball is included in the provisional British Red List as Endangered.

International status

It is included in the provisional European Red List as Endangered (Ing 1993).

Existing legal protection in Britain

All wild plants are protected against intentional, unauthorised uprooting (i.e. removal) by Section 13(1)(b) of the Wildlife and Countryside Act, 1981.

Habitat

This bizzarely-shaped fungus occurs in hedgerows, hollow trees and warm, dry woodland, probably living saprophytically on dead wood.

Threats

This fungus is under threat from collection because of its curious appearance and the fact that there are fewer than 20 individual plants known in Britain. Its habitat is vulnerable to destruction through the removal of hollow trees or by severe trimming of hedges or their complete destruction.

Recommendation

Addition to Schedule 8 for full protection under Sections 13(1)(a) and 13(2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

This species is in danger of extinction in Great Britain. It is taxonomically isolated, except from a Mediterranean species, so it has very few living relatives. The compelling appearance of this fungus makes it attractive to collectors.

Benefits which would accrue from acceptance of the recommendation

Protection from picking, destruction and sale would accrue from adding this species to Schedule 8. Removal of dead trees on which the fungus is growing could be prevented.

An incidental benefit would be to publicise the need for the conservation of fungi.

Reference

Ing, B. 1993. Towards a Red List of Endangered European macrofungi. In: *Fungi of Europe: Investigation, recording & conservation.* ed. by D.N. Pegler, L. Boddy, B. Ing & P. M. Kirk. Kew, Royal Botanic Gardens.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Boletus regius	Royal bolete
Type of plant: Basidiomycete fungus	

Distribution in Great Britain

Fewer than ten populations are known to exist, in the New Forest, Windsor Great Park, Sussex, Berkshire, Kent and Oxfordshire.

Distribution elsewhere

This fungus may be confined to Europe, where it is scattered and declining. However, it has also been reported from Asia.

Status in Britain

Royal bolete is included in the provisional British Red List as Endangered.

International status

This species is included in the provisional European Red List as Endangered (Ing 1993).

Existing legal protection in Britain

All wild plants are protected against intentional, unauthorised uprooting (i.e. removal) by Section 13(1)(b) of the Wildlife and Countryside Act, 1981. Its occurrence in Windsor Great Park and the New Forest SSSIs gives the royal bolete some extra protection.

Habitats

This large, edible, mushroom-shaped fungus grows in oak or oak/beech woodland, especially open wood pasture. It is dependent on its intimate (mycorrhizal) association with the roots of ancient pollard oaks.

Threats

This fungus is under threat from the destruction of old pollard trees on which it depends. It is potentially threatened by collection because it is prized for eating and there are very few populations known.

Recommendation

Addition to Schedule 8 for full protection under Sections 13(1)(a) and 13(2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

This species is in danger of extinction in Britain. It is edible and under pressure from collecting both by private individuals and for commercial use. There is an indirect threat arising from removal of pollard oaks, with which this fungus is associated.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect this fungus against picking, destruction and sale. If the location of populations is made known to landowners and managers the destruction of the trees on which it depends could be prevented.

An incidental benefit would be to publicise the need for the conservation of fungi.

Reference

Ing. B. 1993. Towards a Red List of Endangered European macrofungi. In: *Fungi of Europe: Investigation, recording & conservation.* ed. by D. N. Pegler, L. Boddy, B. Ing & P. M. Kirk. Kew, Royal Botanic Gardens.

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Buglossoporus pulvinus	Oak polypore

Type of plant: Basidiomycete fungus

Distribution in Great Britain

This fungus is confined to six sites in lowland England in the Midlands and the south east: Moccas Park National Nature Reserve, Hereford; Windsor Park; Calke Abbey, Derbyshire; Sherwood Forest; and woodlands in Suffolk and Essex.

Distribution elsewhere

This species is confined to lowland Europe, but is extinct in most northern European countries and declining rapidly in central Europe.

Status in Britain

Oak polypore is included in the provisional British Red List as Endangered

International status

This fungus is included in the provisional European Red List as Endangered (Ing, 1993).

Existing legal protection in Britain

All wild plants are protected against intentional, unauthorised uprooting (i.e. removal) by 13(1)(b) of the Wildlife and Countryside Act, 1981. Oak polypore occurs in several SSSIs.

Habitat

The oak polypore is a bracket fungus which grows on large old pollard oaks in parkland and ancient wood pasture.

Threats

The main threats to this species are destruction of the ancient trees on which it occurs and tree surgery which removes the branches on which it is growing. Although the fungus has threads (mycelia) ramifying through the host tree, considerable resources are invested in the large perennial fruit-bodies or brackets. Direct destruction of these would represent a depletion of the biomass of the fungus.

Recommendation

Addition to Schedule 8 for full protection under Sections 13(1)(a) and 13(2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

This fungus is in danger of extinction in Great Britain and throughout the rest of its world range in Europe, especially because the ancient trees on which it grows are vulnerable to damage and destruction.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect the fungus against collecting and destruction caused through removal of the parts of the trees on which its fruit bodies are growing. It would encourage careful tree surgery and the preservation of ancient pollard oaks, which provide a habitat for a large number of rare invertebrates as well as this fungus.

An incidental benefit would be to publicise the need to conserve fungi.

Reference

Ing. B. 1993. Towards a Red List of Endangered European macrofungi. In: *Fungi of Europe: Investigation, recording & conservation.* ed. by D.N. Pegler, L. Boddy, B. Ing & P.M. Kirk. Kew, Royal Botanic Gardens

RECOMMENDATION FOR AMENDMENT TO SCHEDULE 8 OF THE WILDLIFE & COUNTRYSIDE ACT, 1981

Scientific name:	**English name:**
Hericium erinaceus	Hedgehog fungus
Type of plant: Basidiomycete fungus	

Distribution in Great Britain

This fungus may now be confined to the New Forest. There are unconfirmed records from Sussex and Somerset.

Distribution elsewhere

This species occurs in lowland Europe, where it is showing steady decline, and in north temperate Asia and North America.

Status in Britain

Hedgehog fungus is included in the provisional British Red List as Endangered.

International status

This fungus is included in the provisional European Red List as Rare (Ing 1993)

Existing legal protection in Britain

All wild plants are protected against intentional, unauthorised uprooting (ie removal) by Section 13 (1) (b) of the Wildlife and Countryside Act, 1981. The occurrence of this species within an SSSI gives it some additional protection.

Habitat

This bracket fungus lives saprophytically on standing mature senescent and decaying beech trees in open wood pasture.

Threats

Dead trees in the principal locality of this fungus are being cleared for firewood and to create recreational areas such as camp-sites. A long term threat exists because of the failure of the woodland to regenerate, thereby depriving the fungus of the next generation of host trees. As this fungus is distinctive, attractive and edible, it could be threatened by collecting.

Recommendation

Addition to Schedule 8 for full protection under Sections 13 (1) (a) and 13 (2) of the Wildlife and Countryside Act, 1981.

Justification for recommendation

This large, attractive, edible species has a very restricted distribution in Britain and occurs in a site where it is vulnerable both to collection and to destruction through the removal of the dead wood on which it grows.

Benefits which would accrue from acceptance of the recommendation

Scheduling would protect the fungus from collecting and sale and from destruction through the indiscriminate removal of dead wood bearing its fruit-bodies.

This species is one of a suite of rare fungi (including *Aurantioporus alborubescens*, *Creolophus cirrhatus* and *Hyphoderma litschaueri*) of wood pasture, all of which might benefit indirectly from the protection afforded to *Hericium erinaceus*.

Reference

Ing. B. 1993. Towards a Red List of Endangered European macrofungi. In: *Fungi of Europe: Investigation, recording & conservation.* ed. by D. N. Pegler, L. Boddy, B. Ing & P. M. Kirk. Kew, Royal Botanic Gardens.

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Tim Blackstock, Countryside Council for Wales	- plant specialist
David Connor, JNCC Support Unit	- marine specialist
Vin Fleming, Scottish Natural Heritage	- co-ordinator for Scotland
Adrian Fowles, Countryside Council for Wales	- invertebrate specialist and co-ordinator for Wales
Nick Hodgetts, JNCC Support Unit	- plant specialist
Roger Key, English Nature	- invertebrate specialist
David Mills, JNCC Support Unit	- data handling specialist
Roger Mitchell, English Nature	- co-ordinator for England
Margaret Palmer, JNCC Support Unit	- chair of working group
Mark Tasker, JNCC Support Unit	- marine vertebrate specialist
Tom Tew, JNCC Support Unit	- terrestrial vertebrate specialist

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- Lynne Farrell, Scottish Natural Heritage - plant specialist
- Ro FitzGerald, consultant to English Nature - plant specialist
- Clare Eno, JNCC Support Unit - marine fish specialist

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APPENDIX 1

SPECIES OTHER THAN BIRDS SPECIALLY PROTECTED UNDER THE WILDLIFE AND COUNTRYSIDE ACT, 1981

SCHEDULE 5 (ANIMALS)

Scientific name	English name	Sections of Act cited where complete protection is not afforded	Year scheduled
Mammals			
Cetacea	All dolphins, porpoises, whales		*Tursiops truncatus & Delphinus delphis* - 1981; rest - 1988
Felis silvestris	Wildcat		1988
Lutra lutra	Otter		1981
Martes martes	Pine marten		1988
Muscardinus avellanarius	Dormouse		1988
Odobenus rosmarus	Walrus		1988
Sciurus vulgaris	Red squirrel		1981
Vespertilionidae and Rhinolophidae	All bats		1981
Reptiles			
Anguis fragilis	Slow worm	Killing & injuring S.9(1) (part); sale S.9(5)	S.9(5) - 1981; S.9(1) - 1988
Cheloniidae and Dermochelyidae	All turtles		1988
Coronella austriaca	Smooth snake		1981
Lacerta agilis	Sand lizard		1981
Lacerta vivipara	Viviparous lizard	Killing & injuring S.9(1) (part); sale S.9(5)	S.9(5) - 1981; S.9(1) - 1988
Natrix natrix	Grass snake	Killing & injuring S.9(1) (part); sale S.9(5)	S.9(5) - 1981; S.9(1) - 1988
Vipera berus	Adder	Killing & injuring S.9(1) (part): sale S.9(5)	S.9(5) - 1981; S.9(1) - 1991
Amphibians			
Bufo bufo	Common toad	Sale only S.9(5)	1981
Bufo calamita	Natterjack toad		1981
Rana temporaria	Common frog	Sale only S.9(5)	1981
Triturus cristatus	Warty (great crested) newt		1981
Triturus helveticus	Palmate newt	Sale only S.9(5)	1981
Triturus vulgaris	Smooth newt	Sale only S.9(5)	1981
Fish			
Acipenser sturio	Sturgeon		1992
Alosa alosa	Allis shad	Killing, injuring & taking S.9(1)	1991
Coregonus albula	Vendace		1988
Coregonus lavaretus	Whitefish		1988
Lota lota	Burbot		1981

Scientific name	English name	Sections of Act cited where complete protection is not afforded	Year scheduled
Butterflies			
Apatura iris	Purple emperor	Sale only S.9(5)	1989
Argynnis adippe	High brown fritillary		1992 (previously sale only)
Aricia artaxerxes	Northern brown argus	Sale only S.9(5)	1989
Boloria euphrosyne	Pearl-bordered fritillary	Sale only S.9(5)	1989
Carterocephalus palaemon	Checkered skipper	Sale only S.9(5)	1989
Coenonympha tullia	Large heath	Sale only S.9(5)	1989
Cupido minimus	Small blue	Sale only S.9(5)	1989
Erebia epiphron	Mountain ringlet	Sale only S.9(5)	1989
Eurodryas aurinia	Marsh fritillary	Sale only S.9(5)	1989
Hamearis lucina	Duke of Burgundy fritillary	Sale only S.9(5)	1989
Hesperia comma	Silver-spotted skipper	Sale only S.9(5)	1989
Leptidea sinapis	Wood white	Sale only S.9(5)	1989
Lycaena dispar	Large copper	Sale only S.9(5)	1989
Lysandra bellargus	Adonis blue	Sale only S.9(5)	1989
Lysandra coridon	Chalkhill blue	Sale only S.9(5)	1989
Maculinea arion	Large blue		1981
Melitaea cinxia	Glanville fritillary	Sale only S.9(5)	1989
Mellicta athalia (*Melitaea athalia*)	Heath fritillary		1981
Nymphalis polychloros	Large tortoiseshell	Sale only S.9(5)	1989
Papilio machaon	Swallowtail		1981
Plebejus argus	Silver-studded blue	Sale only S.9(5)	1989
Strymonidia pruni	Black hairstreak	Sale only S.9(5)	1989
Strymonidia w-album	White-letter hairstreak	Sale only S.9(5)	1989
Thecla betulae	Brown hairstreak	Sale only S.9(5)	1989
Thymelicus acteon	Lulworth skipper	Sale only S.9(5)	1989
Moths			
Acosmetia caliginosa	Reddish buff		1981
Hadena irregularis	Viper's bugloss		1988
Pareulype berberata	Barberry carpet		1981
Siona lineata	Black-veined		1981
Thalera fimbrialis	Sussex emerald		1992
Thetidia smaragdaria	Essex emerald		1981
Zygaena viciae	New Forest burnet		1981
Beetles			
Chrysolina cerealis	Rainbow leaf beetle		1981
Curimopsis nigrita	Mire pill beetle	Damage/destruction of place of shelter/protection S.9(4)(a) only	1992
Graphoderus zonatus	Water beetle		1992
Hydrochara caraboides	Lesser silver water beetle		1992
Hypebaeus flavipes	Beetle		1992
Limoniscus violaceus	Violet click beetle		1988
Paracymus aeneus	Water beetle		1992

Scientific name	English name	Sections of Act cited where complete protection is not afforded	Year scheduled
Hemipteran bugs			
Cicadetta montana	New Forest cicada		1988
Crickets			
Decticus verrucivorus	Wart-biter		1981
Gryllotalpa gryllotalpa	Mole cricket		1981
Gryllus campestris	Field cricket		1981
Dragonflies			
Aeshna isosceles	Norfolk aeshna		1981
Spiders			
Dolomedes plantarius	Fen raft spider		1981
Eresus niger (cinaberinus)	Ladybird spider		1981
Crustaceans			
Austropotamobius pallipes	Atlantic stream (white-clawed) crayfish	Taking S.9(1) (part); sale S.9(5)	1988
Chirocephalus diaphanus	Fairy shrimp		1988
Gammarus insensibilis	Lagoon sand shrimp		1988
Triops cancriformis	Apus		1988
Sea-mats			
Victorella pavida	Trembling sea-mat		1988
Molluscs			
Caecum armoricum	De Folin's lagoon snail		1992
Catinella arenaria	Sandbowl snail		1981
Margaritifera margaritifera	Pearl mussel	Killing & injuring S.9(1) (part)	1991
Myxas glutinosa	Glutinous snail		1981
Paludinella littorina	Lagoon snail		1992
Tenellia adspersa	Lagoon sea slug		1992
Thyasira gouldi	Northern hatchet-shell		1992
Annelid worms			
Alkmaria romijni	Tentacled lagoon-worm		1992
Armandia cirrhosa	Lagoon sandworm		1988
Hirudo medicinalis	Medicinal leech		1988
Sea anemones and allies			
Edwardsia ivelli	Ivell's sea anemone		1988
Eunicella verrucosa	Pink sea-fan	Killing, injuring & taking S.9(1); possession S9(2); sale S.9(5)	1992
Nematostella vectensis	Starlet sea anemone		1988

SCHEDULE 8 (PLANTS)

Scientific name	English name	Year scheduled
Vascular plants		
Ajuga chamaepitys	Ground pine	1992
Alisma gramineum	Ribbon-leaved water-plantain	1981
Allium sphaerocephalon	Round-headed leek	1981
Althaea hirsuta	Rough marsh-mallow	1981
Alyssum alyssoides	Small alison	1981
Apium repens	Creeping marshwort	1988
Arabis alpina	Alpine rock-cress	1988
Arabis scabra (stricta)	Bristol rock-cress	1988
Arenaria norvegica	Norwegian sandwort	1981
Artemisia campestris	Field wormwood	1981
Atriplex pedunculata (Halimione pedunculata)	Stalked orache	1992
Bupleurum baldense	Small hare's-ear	1981
Bupleurum falcatum	Sickle-leaved hare's-ear	1981
Carex depauperata	Starved wood-sedge	1981
Centaurium tenuiflorum	Slender centaury	1992
Cephalanthera rubra	Red helleborine	1981
Chenopodium vulvaria	Stinking goosefoot	1988
Cicerbita alpina	Alpine sow-thistle	1981
Clinopodium menthifolium (Calamintha sylvatica)	Wood calamint	1981
Coincya wrightii (Rhynchosinapis wrightii)	Lundy cabbage	1988
Corrigiola litoralis	Strapwort	1988
Cotoneaster integerrimus (Cotoneaster cambrica)	Wild cotoneaster	1981
Crassula aquatica	Pigmyweed	1988
Crepis foetida	Stinking hawk's-beard	1988
Cynoglossum germanicum	Green hound's-tongue	1988
Cyperus fuscus	Brown galingale	1981
Cypripedium calceolus	Lady's-slipper	1981
Cystopteris dickieana	Dickie's bladder fern	1981
Dactylorhiza lapponica	Lapland marsh-orchid	1992
Damasonium alisma	Starfruit	1981
Dianthus gratianopolitanus	Cheddar pink	1981
Diapensia lapponica	Diapensia	1981
Epipactis youngiana	Young's helleborine	1988
Epipogium aphyllum	Ghost orchid	1981
Equisetum ramosissimum	Branched horsetail	1988
Erigeron borealis	Alpine fleabane	1988
Eriophorum gracile	Slender cottongrass	1988
Eryngium campestre	Field eryngo	1981
Filago lutescens	Red-tipped cudweed	1988
Filago pyramidata	Broad-leaved cudweed	1992
Fumaria reuteri (martinii)	Martin's ramping-fumitory	1988
Gagea bohemica	Early star of Bethlehem	1988
Gentiana nivalis	Alpine gentian	1981
Gentiana verna	Spring gentian	1981
Gentianella anglica	Early gentian	1992
Gentianella ciliata	Fringed gentian	1988
Gentianella uliginosa	Dune gentian	1992
Gladiolus illyricus	Wild gladiolus	1981
Gnaphalium luteoalbum	Jersey cudweed	1981
Hieracium attenuatifolium	Weak-leaved hawkweed	1992

Scientific name	English name	Year scheduled
Hieracium northroense	Northroe hawkweed	1992
Hieracium zetlandicum	Shetland hawkweed	1992
Himantoglossum hircinum	Lizard orchid	1981
Homogyne alpina	Purple colt's-foot	1988
Lactuca saligna	Least lettuce	1981
Limosella australis	Welsh mudwort	1992
Liparis loeselii	Fen orchid	1981
Lloydia serotina	Snowdon lily	1981
Luronium natans	Floating water-plantain	1992
Lychnis alpina	Alpine catchfly	1981
Lythrum hyssopifolia	Grass-poly	1988
Melampyrum arvense	Field cow-wheat	1981
Mentha pulegium	Pennyroyal	1988
Minuartia stricta	Teesdale sandwort	1981
Najas flexilis	Slender naiad	1992
Najas marina	Holly-leaved naiad	1988
Ononis reclinata	Small restharrow	1988
Ophioglossum lusitanicum	Least adder's-tongue	1988
Ophrys fuciflora	Late spider-orchid	1981
Ophrys sphegodes	Early spider-orchid	1981
Orchis militaris	Military orchid	1981
Orchis simia	Monkey orchid	1981
Orobanche artemisiae-campestris (Orobanche loricata, Orobanche picridis)	Oxtongue broomrape	1981
Orobanche caryophyllacea	Bedstraw broomrape	1981
Orobanche reticulata	Thistle broomrape	1981
Petroraghia nanteuilii	Childing pink	1981
Phyllodoce caerulea	Blue heath	1981
Phyteuma spicatum	Spiked rampion	1992
Polygonatum verticillatum	Whorled Solomon's-seal	1981
Polygonum maritimum	Sea knotgrass	1981
Potentilla rupestris	Rock cinquefoil	1981
Pulicaria vulgaris	Small fleabane	1988
Pyrus cordata	Plymouth pear	1981
Ranunculus ophioglossifolius	Adder's-tongue spearwort	1981
Rhinanthus serotinus	Greater yellow-rattle	1981
Romulea columnae	Sand crocus	1988
Rumex rupestris	Shore dock	1992
Salvia pratensis	Meadow clary	1992
Saxifraga cernua	Drooping saxifrage	1981
Saxifraga cespitosa	Tufted saxifrage	1981
Saxifraga hirculus	Yellow marsh-saxifrage	1992
Scirpus triqueter (Scripus triquetrus)	Triangular club-rush	1981
Scleranthus perennis	Perennial knawel	1981
Scorzonera humilis	Viper's-grass	1988
Selinum carvifolia	Cambridge milk-parsley	1988
Senecio paludosus	Fen ragwort	1988
Stachys alpina	Limestone woundwort	1981
Stachys germanica	Downy woundwort	1981
Teucrium botrys	Cut-leaved germander	1988
Teucrium scordium	Water germander	1981
Thlaspi perfoliatum	Perfoliate penny-cress	1992
Trichomanes speciosum	Killarney fern	1981
Veronica spicata	Spiked speedwell	1981
Veronica triphyllos	Fingered speedwell	1988
Viola persicifolia	Fen violet	1981
Woodsia alpina	Alpine woodsia	1981
Woodsia ilvensis	Oblong woodsia	1981

Scientific name	English name	Year scheduled
Mosses		
Acaulon triquetrum	Triangular pygmy-moss	
Bartramia stricta	Rigid apple-moss	
Bryum mamillatum	Dune thread-moss	
Bryum schleicheri	Schleicher's thread-moss	
Buxbaumia viridis	Green shield-moss	
Cryphaea lamyana	Multi-fruited river-moss	
Cyclodictyon laetevirens	Bright-green cave-moss	
Didymodon (Barbula) cordata	Cordate beard-moss	
Didymodon (Barbula) glauca	Glaucous beard-moss	
Ditrichum cornubicum	Cornish path-moss	
Grimmia unicolor	Blunt-leaved grimmia	
Hamatocaulis (Drepanocladus) vernicosus	Slender green feather-moss	All mosses scheduled in 1992
Hypnum vaucheri	Vaucher's feather-moss	
Micromitrium tenerum	Millimetre moss	
Mielichhoferia mielichhoferi	Alpine copper-moss	
Orthotrichum obtusifolium	Blunt-leaved bristle-moss	
Plagiothecium piliferum	Hair silk-moss	
Rhynchostegium rotundifolium	Round-leaved feather-moss	
Saelania glaucescens	Blue dew-moss	
Scorpidium turgescens	Large yellow feather-moss	
Sphagnum balticum	Baltic bog-moss	
Thamnobryum angustifolium	Derbyshire feather-moss	
Zygodon forsteri	Knothole moss	
Zygodon gracilis	Nowell's limestone-moss	
Liverworts		
Adelanthus lindenbergianus	Lindenberg's leafy liverwort	
Geocalyx graveolens	Turpswort	
Gymnomitrion apiculatum	Pointed frostwort	
Jamesoniella undulifolia	Marsh earwort	All liverworts scheduled in 1992
Lophozia (Leiocolea) rutheana	Norfolk flapwort	
Marsupella profunda	Western rustwort	
Petalophyllum ralfsii	Petalwort	
Riccia bifurca	Lizard crystalwort	
Southbya nigrella	Blackwort	
Lichens		
Bryoria furcellata	Forked hair-lichen	
Buellia asterella	Starry breck-lichen	
Caloplaca luteoalba	Orange-fruited elm-lichen	
Caloplaca nivalis	Snow caloplaca	
Catapyrenium psoromoides	Tree catapyrenium	
Catillaria laureri	Laurer's catillaria	
Cladonia stricta	Upright mountain-cladonia	
Collema dichotomum	River jelly-lichen	
Gyalecta ulmi	Elm gyalecta	All lichens scheduled in 1992
Heterodermia leucomelos	Ciliate strap-lichen	
Heterodermia propagulifera	Coralloid rosette-lichen	
Lecanactis hemisphaerica	Churchyard lecanactis	
Lecanora achariana	Tarn lecanora	
Lecidea inops	Copper lecidea	
Nephroma arcticum	Arctic kidney-lichen	
Pannaria ignobilis	Caledonian pannaria	
Parmelia minarum	New Forest parmelia	

Scientific name	English name	Year scheduled
Parmentaria chilensis	Oil-stain parmentaria	
Peltigera lepidophora	Ear-lobed dog-lichen	
Pertusaria bryontha	Alpine moss-pertusaria	
Physcia tribacioides	Southern grey physcia	
Pseudocyphellaria lacerata	Ragged pseudocyphellaria	All lichens scheduled in
Psora rubiformis	Rusty alpine psora	1992
Solenopsora liparina	Serpentine solenopsora	
Squamarina lentigera	Scaly breck-lichen	
Teloschistes flavicans	Golden hair-lichen	
Stoneworts		
Chara canescens	Bearded stonewort	1992
Lamprothamnium papulosum	Foxtail stonewort	1988

EXPLANATORY NOTES

Protection for wild animals on Schedule 5 of the Wildlife and Countryside Act, 1981

Section 9 Part 1 - intentional killing, injuring, taking

Part 2 - possession or control (live or dead animal, part or derivative)

Part 4 (a) - damage to, destruction of, obstruction of access to any structure or place used by a scheduled animal for shelter or protection

Part 4 (b) - disturbance of animal occupying such a structure or place

Part 5 (a) - selling, offering for sale, possessing or transporting for the purpose of sale (live or dead animal, part or derivative)

Part 5 (b) - advertising for buying or selling such things

Protection for wild plants afforded by the Wildlife and Countryside Act, 1981

Section 13 Part 1 (a) - intentional picking, uprooting or destruction of plants on Schedule 8

Part 1 (b) - unauthorised intentional uprooting of any wild plant not included in Schedule 8

Part 2 (a) - selling, offering for sale, possessing or transporting for the purpose of sale, any plant (live or dead, part or derivative) on Schedule 8

Part 2 (b) - advertising for buying or selling such things

APPENDIX 2

INTERNATIONAL OBLIGATIONS FOR THE PROTECTION OF BRITISH SPECIES OTHER THAN BIRDS

EC Directive on the conservation of natural habitats and of wild fauna and flora (Habitats and Species Directive)

Annexes IIa and IIb	-	designation of protected areas for animal and plant species listed (* = priority species)	)species)whose
Annexes IVa and IVb	-	special protection for animal and plant species listed	)natural
Annexes Va and Vb	-	exploitation of listed animal and plant species to be subject to management if necessary	)range)includes GB

Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)

Appendix I	-	special protection for plant species listed
Appendix II	-	special protection for listed animal species and their habitats
Appendix III	-	exploitation of listed animal species to be subject to regulation

Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)

Appendix I	-	obligations on range states of migratory species to prohibit taking of listed animals and to take protective measures to conserve the species
Appendix II	-	range states encouraged to conclude international agreements to benefit species listed

Convention on International Trade in Endangered Species (CITES)

Appendix I	-	trade only in exceptional circumstances for species listed
Appendix II	-	trade in listed species subject to licensing
Appendix III	-	trade in listed species subject to limited licensing

CITES regulations apply also to many non-native species not listed here. Regulation (EEC) No. 3626/82, which applies CITES in the European Community, treats all Cetacea, and the Apollo butterfly as if they were listed on CITES Appendix I. Also, the wildcat, wolf and lynx are given greater protection under this Regulation than they receive by being listed on CITES Appendix II.

Wildlife and Countryside Act, 1981

Schedule 5	-	animals (other than birds) which are protected
Schedule 8	-	plants which are protected
Schedule 9	-	animal and plant species for which release to the wild is prohibited
Schedule 6	-	animals (other than birds) which may not be killed or taken by certain methods

The Conservation (Natural Habitats, etc) Regulations, 1994

Schedule 2	-	European protected species of animals (natural range includes Great Britain)
Schedule 3	-	animals which may not be taken or killed in certain ways
Schedule 4	-	European protected species of plants (natural range includes Great Britain)

SPECIES (OTHER THAN BIRDS) OCCURRING IN GB AND LISTED IN THE EC HABITATS AND SPECIES DIRECTIVE, THE BERN CONVENTION, THE BONN CONVENTION AND CITES

	EC Directive Annex(es)	Bern Conv App	Bonn Conv App	CITES App	W&C Act Sch	Cons Regs Sch
MAMMALS						
Natural range includes GB						
Bats						
Barbastella barbastellus (barbastelle)	IIa, IVa	II	II	-	5,6	2
Eptesicus serotinus (serotine)	IVa	II	II	-	5,6	2
Myotis bechsteinii (Bechstein's bat)	IIa, IVa	II	II	-	5,6	2
Myotis brandtii (Brandt's bat)	IVa	II	II	-	5,6	2
Myotis daubentonii (Daubenton's bat)	IVa	II	II	-	5,6	2
Myotis mystacinus (whiskered bat)	IVa	II	II	-	5,6	2
Myotis nattereri (Natterer's bat)	IVa	II	II	-	5,6	2
Nyctalus leisleri (Leisler's bat)	IVa	II	II	-	5,6	2
Nyctalus noctula (noctule)	IVa	II	II	-	5,6	2
Pipistrellus nathusii (Nathusius's pipistrelle)	IVa	II	II	-	5,6	2
Pipistrellus pipistrellus (pipistrelle)	IVa	III	II	-	5,6	2
Plecotus auritus (brown long-eared bat)	IVa	II	II	-	5,6	2
Plecotus austriacus (grey long-eared bat)	IVa	II	II	-	5,6	2

	EC Directive Annex(es)	Bern Conv App	Bonn Conv App	CITES App	W&C Act Sch	Cons Regs Sch
Rhinolophus ferrumequinum (greater horseshoe bat)	IIa, IVa	II	II	-	5,6	2
Rhinolophus hipposideros (lesser horseshoe bat)	IIa, IVa	II	II	-	5,6	2
Cetaceans (dolphins, porpoises, whales)						
Balaenoptera acutorostrata (minke whale)	IVa	III	-	I	5	2
Balaenoptera physalus (fin whale)	IVa	III	-	I	5	2
Delphinus delphis (common dolphin)	IVa	II	II	II	5,6	2
Globicephala melaena (long-finned pilot whale)	IVa	II	II	II	5	2
Grampus griseus (Risso's dolphin)	IVa	II	II	II	5	2
Lagenorhynchus acutus (Atlantic white-sided dolphin)	IVa	II	II	II	5	2
Lagenorhynchus albirostris (white-beaked dolphin)	IVa	II	II	II	5	2
Mesoplodon bidens (Sowerby's beaked whale)	IVa	II	-	II	5	2
Orcinus orca (killer whale)	IVa	II	II	II	5	2
Phocoena phocoena (harbour/common porpoise)	IIa, IVa	II	II	II	5,6	2
Stenella coeruleoalba (striped dolphin)	IVa	II	-	II	5	2

	EC Directive Annex(es)	Bern Conv App	Bonn Conv App	CITES App	W&C Act Sch	Cons Regs Sch
Tursiops truncatus (Tursiops tursio) (bottle-nose dolphin)	IIa, IVa	II	II	II	5,6	2
Other mammals						
Capreolus capreolus (roe deer)	-	III	-	-	[Deer Acts]	-
Cervus elaphus (red deer)	-	III	-	-	[Deer Acts]	-
Crocidura suaveolens (lesser white-toothed shrew)	-	III	-	-	6	-
Erinaceus europaeus (hedgehog)	-	III	-	-	6	-
Felis silvestris (Catus silvestris) (wildcat)	IVa	II	-	II	5,6	2
Halichoerus grypus (grey seal)	IIa, Va	III	-	-	[Seals Act]	3
Lepus timidus (mountain hare)	Va	III	-	-	-	3
Lutra lutra (otter)	IIa, IVa	II	-	I	5,6	2
Martes martes (pine marten)	Va	III	-	-	5,6	3
Meles meles (badger)	-	III	-	-	6 [also Badgers Act]	-
Muscardinus avellanarius (dormouse)	IVa	III	-	-	5,6	2
Mustela erminea (stoat)	-	III	-	III (UK res-ervation)	-	-

	EC Directive Annex(es)	Bern Conv App	Bonn Conv App	CITES App	W&C Act Sch	Cons Regs Sch
Mustela nivalis (weasel)	-	III	-	-	-	-
Mustela putorius *(Putorius putorius)* (polecat)	Va	III	-	-	6	3
Neomys fodiens (water shrew)	-	III	-	-	6	-
Phoca vitulina (common seal)	IIa, Va	III	-	-	[Seals Act]	3
Sciurus vulgaris (red squirrel)	-	III	-	-	5,6	-
Sorex araneus (common shrew)	-	III	-	-	6	-
Sorex minutus (pygmy shrew)	-	III	-	-	6	-
Probably vagrant						
Bats						
Eptesicus nilssonii (northern bat)	IVa	II	II	-	5,6	2
Pipistrellus kuhlii (Kuhl's pipistrelle)	IVa	II	II	-	5,6	2
Pipistrellus savii (Savi's pipistrelle)	IVa	II	II	-	5,6	2
Vespertillio murinus (parti-coloured bat)	IVa	II	II	-	5,6	2
Cetaceans (whales)						
Balaena glacialis *(Eubalaena glacialis)* (northern/black right whale)	IVa	II	I	I	5	2
Balaenoptera borealis (Sei whale)	IVa	III	-	I	5	2

	EC Directive Annex(es)	Bern Conv App	Bonn Conv App	CITES App	W&C Act Sch	Cons Regs Sch
Balaenoptera musculus (*Sibbaldus musculus*) (blue whale)	IVa	II	I	I	5	2
Delphinapterus leucas (white whale)	IVa	III	II	II	5	2
Hyperoodon ampullatus (Northern bottlenose whale)	IVa	III	II	I	5	2
Kogia breviceps (*Physeter breviceps*) (pygmy sperm whale)	IVa	III	-	II	5	2
Megaptera novaeangliae (humpback whale)	IVa	II	I	I	5	2
Mesoplodon europaeus (Gervais' beaked whale)	IVa	III	-	II	5	2
Mesoplodon mirus (True's beaked whale)	IVa	II	-	II	5	2
Monodon monoceros (narwhal)	IVa	III	II	II	5	2
Physeter catodon (*Physeter macrocephalus*) (sperm whale)	IVa	III	-	I	5	2
Pseudorca crassidens (false killer whale)	IVa	II	-	II	5	2
Ziphius cavirostris (Cuvier's beaked whale)	IVa	II	-	II	5	2
Other mammals						
Cystophora cristata (hooded seal)	Va	III	-	-	-	3
Erignathus barbatus (bearded seal)	Va	III	-	-	-	3
Odobenus rosmarus (walrus)	-	II	-	III	5	-

	EC Directive Annex(es)	Bern Conv App	Bonn Conv App	CITES App	W&C Act Sch	Cons Regs Sch
Phoca groenlandica (*Pagophilus groenlandicus*) (harp seal)	Va	III	-	-	-	3
Phoca hispida (*Pusa hispida*) (ringed seal)	Va	III	-	-	-	3
Extinct						
Caster fiber (European beaver)	IIa, IVa	III	-	-	-	-
Canis lupus (wolf)	*IIa, IVa	II	-	II	-	-
Lynx lynx (lynx)	IIa, IVa	III	-	II	-	-
Myotis myotis (mouse-eared bat)	IIa, IVa	II	II	-	5,6	2
Ursus arctos (brown bear)	*IIa, IVa	II	-	II	-	-
Established non-native species (not requiring protection in Britain)						
Dama dama (fallow deer)	-	III	-	-	[but see Deer Acts]	-
Glis glis (fat dormouse)	-	III	-	-	6,9	-
Histrix cristata (European porcupine)	IVa	II	-	-	9	-
Hydropotes inermis (Chinese water deer)	-	III	-	-	-	-
Muntiacus reevesi (Muntjac deer)	-	III	-	-	Proposed 9	-

	EC Directive Annex(es)	Bern Conv App	Bonn Conv App	CITES App	W&C Act Sch	Cons Regs Sch
Sika nippon (Sika deer)	-	III	-	-	[but see Deer Acts]	-
Rangifer tarandus (reindeer)	-	III	-	-	-	-
REPTILES						
Natural range includes GB						
Anguis fragilis (slow-worm)	-	III	-	-	5 (killing, injuring, sale)	-
Coronella austriaca (smooth snake)	IVa	II	-	-	5	2
Lacerta agilis (sand lizard)	IVa	II	-	-	5	2
Lacerta vivipara (viviparous lizard)	-	III	-	-	5 (killing, injuring, sale)	-
Natrix natrix (grass snake)	-	III	-	-	5 (killing, injuring, sale)	-
Vipera berus (adder)	-	III	-	-	5 (killing, injuring, sale)	-
Vagrants						
Caretta caretta (loggerhead turtle)	*IIa, IVa	II	I, II	I	5	2
Chelonia mydas (green turtle)	IVa	II	I, II	I	5	2
Dermochelys coriacea (leatherback turtle)	IVa	II	I, II	I	5	2
Eretmochelys imbricata (hawksbill turtle)	IVa	II	I, II	I	5	2

	EC Directive Annex(es)	Bern Conv App	Bonn Conv App	CITES App	W&C Act Sch	Cons Regs Sch
Lepidochelys kempii (Kemp's ridley turtle)	IVa	II	I, II	I	5	2
Established non-native species (not requiring protection in Britain)						
Elaphe longissima (Aesculapean snake)	IVa	II	-	-	9	-
Emys orbicularis (European pond terrapin)	IIa, IVa	II	-	-	9	-
Podarcis muralis (common wall lizard)	IVa	II	-	-	9	-
AMPHIBIANS						
Natural range includes GB						
Bufo bufo (common toad)	-	III	-	-	5 (sale)	-
Bufo calamita (natterjack toad)	IVa	II	-	-	5	2
?*Rana lessonae* (pool frog) (some populations probably native)	IVa	III	-	-	-	-
Rana temporaria (common frog)	Va	III	-	-	5 (sale)	-
Triturus cristatus (great crested newt)	IIa, IVa	II	-	-	5	2
Triturus helveticus (palmate newt)	-	III	-	-	5 (sale)	-
Triturus vulgaris (smooth newt)	-	III	-	-	5 (sale)	-
Established non-native species (not requiring protection in Britain)						
Alytes obstetricans (midwife toad)	IVa	II	-	-	9	-

	EC Directive Annex(es)	Bern Conv App	Bonn Conv App	CITES App	W&C Act Sch	Cons Regs Sch
Bombina variegata (yellow-bellied toad)	IVa	II	-	-	9	-
Hyla arborea (European tree frog) (some populations possibly native)	IVa	II	-	-	9	-
Rana esculenta (edible frog)	Va	III	-	-	9	-
Rana ridibunda (marsh frog)	Va	III	-	-	9	-
Triturus alpestris (alpine newt)	-	III	-	-	9	-
Triturus carnifex (Italian crested newt)	IVa	II	-	-	9	-
FISH						
Natural range includes GB						
Alosa alosa (allis shad)	IIa,Va	III	-	-	5 (killing, injuring, taking)	3
Alosa fallax (twaite shad)	IIa, Va	III	-	-	-	3
Barbus barbus (barbel)	Va	-	-	-	-	3
Cobitis taenia (spined loach)	IIa	III	-	-	-	-
Coregonus albula (vendance)	Va	III	-	-	5	3
Coregonus lavaretus (whitefish)	Va	III	-	-	5	3
Cottus gobio (bullhead)	IIa	-	-	-	-	-

	EC Directive Annex(es)	Bern Conv App	Bonn Conv App	CITES App	W&C Act Sch	Cons Regs Sch
Lampetra fluviatilis (river lamprey)	IIa, Va	III	-	-	-	3
Lampetra planeri (brook lamprey)	IIa	III	-	-	-	-
Petromyzon marinus (sea lamprey)	IIa	III	-	-	-	-
Pomatoschistus microps (common goby)	-	III	-	-	-	-
Pomatoschistus minutus (sand goby)	-	III	-	-	-	-
Salmo salar (Atlantic salmon)	IIa, Va in fresh water only	III	-	-	-	3
Thymallus thymallus (grayling)	Va	III	-	-	-	3
Vagrant						
Acipenser sturio (sturgeon)	*IIa, IVa	III	-	I	5	2
Believed extinct						
Coregonus oxyrinchus (houting) anadromous populations only	*IIa, IVa	III	-	-	-	-
Established non-native species (not requiring protection in Britain)						
Rhodeus sericeus (bitterling)	IIa	III	-	-	9	-
Siluris glanis (wels)	-	III	-	-	9	-

	EC Directive Annex(es)	Bern Conv App	Bonn Conv App	CITES App	W&C Act Sch	Cons Regs Sch
INVERTEBRATES						
Natural range includes GB						
Austropotamobius pallipes (Atlantic stream/white-clawed crayfish)	IIa, Va	III	-	-	5 (taking, sale)	-
Coenagrion mercuriale (southern damselfly)	IIa	II	-	-	-	-
Eurodryas aurinia (*Euphydryas aurinia*) (marsh fritillary butterfly)	IIa	II	-	-	5 (sale)	-
Hirudo medicinalis (medicinal leech	Va	III	-	II	5	-
Limoniscus violaceus (violet click beetle)	IIa	-	-	-	5	-
Lucanus cervus (stag beetle)	IIa	III	-	-	-	-
Margaritifera margaritifera (pearl mussel)	IIa, Va	III	-	-	5 (killing, injuring)	-
Vertigo angustior (a whorl snail)	IIa	-	-	-	-	-
Vertigo genesii (a whorl snail)	IIa	-	-	-	-	-
Vertigo geyeri (a whorl snail)	IIa	-	-	-	-	-
Vertigo moulinsiana (a whorl snail)	IIa	-	-	-	-	-
Extinct						
Cerambyx cerdo (a longhorn beetle)	IIa, IVa	II	-	-	-	-

	EC Directive Annex(es)	Bern Conv App	Bonn Conv App	CITES App	W&C Act Sch	Cons Regs Sch
Graphoderus bilineatus (a water beetle)	IIa, IVa	II	-	-	-	-
Margaritifera auricularia (a freshwater mussel)	IVa	II	-	-	-	-
Oxygastra curtisii (orange-spotted emerald dragonfly)	IIa, IVa	II	-	-	-	-
Extinct but re-established						
Lycaena dispar (large copper butterfly)	IIa, IVa	II	-	-	5 (sale)	-
Maculinea arion (large blue butterfly)	IVa	II	-	-	5	2
Vagrant						
Danaus plexippus (Monarch butterfly)	-	-	II	-	-	-
Parnassius apollo (Apollo butterfly)	IVa	II	-	II	-	-
Proserpinus proserpina (Curzon's sphinx moth)	IVa	II	-	-	-	-
Established non-native (not requiring protection in Britain)						
Astacus astacus (noble crayfish)	Va	III	-	-	9	-
Callimorpha quadripunctata (*Euplagia quadripunctaria*) (Jersey tiger moth)	*IIa	-	-	-	-	-
Helix pomatia (Roman snail)	Va	III	-	-	-	-

	EC Directive Annex(es)	Bern Conv App	CITES App	W&C Act Sch	Cons Regs Sch
VASCULAR PLANTS					
Natural range includes GB					
Apium repens (creeping marshwort)	IIb, IVb	I	-	8	4
Cypripedium calceolus (lady's-slipper)	IIb, IVb	I	II	8	4
Gentianella anglica (early gentian)	IIb, IVb	I	-	8	4
Liparis loeselii (fen orchid)	IIb, IVb	I	II	8	4
Luronium natans (floating-leaved water-plantain)	IIb, IVb	I	-	8	4
Lycopodium species (all clubmosses)	Vb	-	-	-	-
Najas flexilis (slender naiad)	IIb, IVb	I	-	8	4
Orchidaceae (all orchids)	-	-	II	11 species on 8	2 species on 4
Rumex rupestris (shore dock)	IIb, IVb	I	-	8	4
Ruscus aculeatus (butcher's broom)	Vb	-	-	-	-
Saxifraga hirculus (yellow marsh saxifrage)	IIb, IVb	I	-	8	4
Trichomanes speciosum (Killarney fern)	IIb, IVb	I	-	8	4

	EC Directive Annex(es)	Bern Conv App	CITES App	W&C Act Sch	Cons Regs Sch
Believed extinct					
Bromus interruptus (interrupted brome grass)	-	I	-	-	-
Spiranthes aestivalis (summer lady's tresses)	IVb	I	II	-	-
Introduced					
Galanthus nivalis (snowdrop) (may be native in Wales and W. England)	Vb	-	II	-	-
NON-VASCULAR PLANTS					
Natural range includes GB					
Buxbaumia viridis (green shield-moss)	IIb	I	-	8	-
Cladonia subgenus *Cladina* (reindeer lichens):					
Cladonia arbuscula	Vb	-	-	-	-
C. ciliata	Vb	-	-	-	-
C. mediterranea	Vb	-	-	-	-
C. mitis	Vb	-	-	-	-
C. portentosa	Vb	-	-	-	-
C. rangiferina	Vb	-	-	-	-
C. stellaris (? extinct)	Vb	-	-	-	-
C. stygia	Vb	-	-	-	-
Hamatocaulis (Drepanocladus) vernicosus (slender green feather-moss)	IIb	I	-	8	-
Leucobryum glaucum (white cushion-moss)	Vb	-	-	-	-
Lithothamnium corallioides (maerl)	Vb	-	-	-	-
Marsupella profunda (western rustwort)	*IIb	I	-	8	-

	EC Directive Annex(es)	Bern Conv App	CITES App	W&C Act Sch	Cons Regs Sch
Petalophyllum ralfsii (petalwort)	IIb	I	-	8	-
Phymatolithon calcareum (maerl)	Vb	-	-	-	-
Sphagnum species (all bog mosses)	Vb	-	-	8 *S. balticum* only	-

APPENDIX 3

THE CONSERVATION (NATURAL HABITATS, ETC) REGULATIONS, 1994

SCHEDULE 2 **Regulation 38**
EUROPEAN PROTECTED SPECIES OF ANIMALS

Common name	**Scientific Name**
Bats, horse-shoe (all species)	*Rhinolophidae*
Bats, typical (all species)	*Vespertilionidae*
Butterfly, large blue	*Maculinea arion*
Cat, wild	*Felis silvestris*
Dolphins, porpoises and whales (all species)	*Cetacea*
Dormouse	*Muscardinus avellanarius*
Lizard, sand	*Lacerta agilis*
Newt, great crested (or warty)	*Triturus cristatus*
Otter, common	*Lutra lutra*
Snake, smooth	*Coronella austriaca*
Sturgeon	*Acipenser sturio*
Toad, natterjack	*Bufo calamita*
Turtles, marine	*Caretta caretta*
	Chelonia mydas
	Lepidochelys kempii
	Eretmochelys imbricata
	Dermochelys coriacea

SCHEDULE 4 **Regulation 42**
EUROPEAN PROTECTED SPECIES OF PLANTS

Common name	**Scientific name**
Dock, shore	*Rumex rupestris*
Fern, Killarney	*Trichomanes speciosum*
Gentian, early	*Gentianella anglica*
Lady's-slipper	*Cypripedium calceolus*
Marshwort, creeping	*Apium repens*
Naiad, slender	*Najas flexilis*
Orchid, fen	*Liparis loeselii*
Plantain, floating-leaved water	*Luronium natans*
Saxifrage, yellow marsh	*Saxifraga hirculus*

COMPARISON OF CONTROLS IN RELATION TO SCHEDULED SPECIES FOR TWO PIECES OF LEGISLATION

Wildlife And Countryside Act, 1981	**The Conservation (Natural Habitats Etc) Regulations, 1994**
ANIMALS	
Schedule 5/Section 9	**Schedule 2/Regulation 39**
intentional killing	deliberate killing
intentional injuring	-
intentional taking	deliberate capturing
-	deliberate taking/destruction of eggs
possession/control	keeping
intentional damage to/destruction of/obstruction of structure/place used for shelter/protection	damage to/destruction of breeding site/ resting place
intentional disturbance at structure/place	deliberate disturbance
sale	sale/exchange
offering/advertising for sale	offering for sale
transport for sale	transport
-	all stages of life covered
PLANTS	
Schedule 8/Section 13	**Schedule 4/Regulation 43**
intentional picking	deliberate picking
intentional uprooting	deliberate uprooting
intentional destruction	deliberate destruction
-	deliberate cutting
-	deliberate collecting
possession for sale	keeping
sale/exchange	sale/exchange
offering/advertising for sale	offering for sale/exchange
transporting for sale	transporting
-	all stages of biological cycle covered

Schedules 2 and 4 of The Conservation (Natural Habitats etc) Regulations apply to GB species listed on Annex IV of the EC Habitats and Species Directive. Nothing in the Regulation excludes the application of the provisions of Part 1 of the Wildlife and Countryside Action in relation to animals and plants protected under both pieces of legislation.

APPENDIX 4 TIMETABLE FOR THIRD QUINQUENNIAL REVIEW

		Activity	Date	Who does it
1.	❶	Define criteria for selection of species; suggest procedures for QQR; draw up timetable	June 1994	QQR Working Group
2.		Confirm criteria for selection of species; confirm procedures and timetable	June - Sept 1994	Chief Scientists; JNCC Chief Officer; Country agency Chief Execs/Boards
3.		Write consultation document	July - August 1994	Head Species Conservation Branch JNCC in consultation with QQR Working Group
4.		Issue consultation document to agencies and NGOs setting out criteria and requesting species nominations	Sept 1994	Specialists in country agencies and JNCC support unit
5.		Nominate species according to agreed criteria; produce justification	Sept 1994 - March 1995	Staff in agencies and JNCC support unit; NGOs
6.	❷	Validate proposals	Sept 1994- March 1995	QQR Working Group
7.	❸	Write 1st draft report	March - June 1995	Head Species Conservation Branch JNCC & QQR Working Group
		1st draft report complete	**June 1995**	
8.		Consult agencies & voluntary bodies on 1st draft report	June 1995	Head Species Conservation Branch JNCC
9.		Agencies and NGOs consider 1st draft report and comment	June - Sept 1995	Chief Scientists/JNCC Chief Officer; CA Councils; NGOs; other agencies
10.	❹	1st draft report revised	Oct - Dec 1995	Head Species Conservation Branch JNCC & QQR Working Group
		2nd draft report complete	**December 1995**	
11.		Country agencies and JNCC staff consider 2nd draft report	January - March 1996	Country agency staff as appropriate, including Chief Scientists; CA Councils; JNCC Chief Officer & staff
12.	❺	2nd draft report revised	April - May 1996	Head Species Conservation Branch JNCC & QQR Working Group
		3rd draft report complete	**May 1996**	
13.		3rd draft report presented to CA Councils & Joint Committee for consideration	June 1996	Head Species Conservation Branch JNCC, CA Councils, Joint Committee
14.		3rd draft report revised and sent to CA Councils for information	July - September 1996	Head Species Conservation Branch JNCC, in consultation with QQR Working Group
		4th draft report complete	**September 1996**	
15.		4th draft report presented to Joint Committee for consideration	October 1996	Head Species Conservation Branch JNCC & Joint Committee
16.		Final revisions made	October 1996	Head Species Conservation Branch JNCC
		Final report complete	**October 1996**	
17.		Submission of report to Minister	End October 1996	JNCC Chief Officer
18.		DoE consultation (including feedback/requests for advice to JNCC Support Unit)	November 1996 - ?1997	DoE
19.		Advice to DoE	November 1996 - ? 1997	Head Species Conservation Branch JNCC, in consultation with QQR Working Group
20.		DoE produces Statutory Instrument(s)	? 1997	DoE
21.		Legislation implemented	? 1997/1998	Parliament

Meetings of QQR Working Group - ❶ June 1994; ❷ Nov. 1994; ❸ April 1995; ❹ Nov. 1995; ❺ April 1996

APPENDIX 5

CRITERIA FOR THE SELECTION OF SPECIES FOR SCHEDULES 5 AND 8 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981.

Rationale underlying scheduling

While acknowledging that positive conservation measures are the primary means of improving the status of rare species, the statutory conservation agencies will pursue scheduling when

- there is an international obligation to protect a species in this way
- an animal or plant is in danger of extinction in Great Britain, or is likely to become so endangered unless conservation measures are taken, and legal protection is likely to improve its chances of survival.

Scheduling is considered to be particularly appropriate where there is a need to

- protect an animal or plant species from direct human pressure such as persecution, collection or trade

- protect elements of habitat essential for the survival of an endangered species.

Scheduling also has the effect of raising awareness of the threats to species and thus the need for their protection.

Guidelines for recommending species for scheduling

Range of taxa under consideration

For Schedule 5 - vertebrates other than birds; invertebrates.

For Schedule 8 - vascular plants, bryophytes, lichens, fungi and algae.

All species of the groups listed above, including species at present on the schedules.

Infra-specific taxa under some circumstances (see 'Eligibility criteria').

Eligibility criteria

A Generally, only native (including re-established) taxa were to be considered. Taxa introduced or thought to be introduced to Great Britain by man could be considered exceptionally, with the following provisos:

- the organism is endangered or extinct in its native range

- information suggests that the organism is unlikely to have an adverse impact on important native species or ecosystems

- preferably, the natural range reaches the north west coast of Europe (i.e. continental distribution extends to the Atlantic coast of France, Belgium, the Netherlands, Germany or Scandinavia; for marine taxa, the distribution includes the north west Atlantic area).

B The taxon must be either:

- established in the wild in Great Britain

or

- occurring as a vagrant in Great Britain and internationally protected

or

- believed extinct in Great Britain as a breeding species, but in the process of re-establishment

or

- believed extinct in Great Britain, but with the possibility that it could become re-established naturally.

C The taxonomic status of the organism must be well authenticated. Infra-specific taxa could be considered, but only if they are:

- clearly recognisable (i.e. morphologically distinct)

- geographically or ecologically distinct.

D The taxon must be severely threatened in Great Britain, or likely to become so unless conservation measures are taken, and/or subject to an international obligation for protection.

One or more of the following may indicate that a taxon is or may become severely threatened:

- it is included in a JNCC-approved British Red Data Book as *Extinct, Endangered or Vulnerable* (or, in Red Lists drawn up using the recently revised IUCN criteria, as *Extinct in the Wild, Critically Endangered, Endangered* or *Vulnerable*)

- it has been well searched for but is known from only a single locality

- it is confined to a particularly threatened habitat. The extent or quality of the habitat is being significantly reduced or is likely to become significantly reduced, thus threatening the survival of the organism

- it is rapidly declining in population, number of localities occupied or range. Indicative would be at least 50% decline observed, estimated inferred or suspected in the last 20 years, or a decline of at least 50% projected, inferred or suspected to be likely in the near future. The decline must transcend normal fluctuations

- it is endangered, or likely to become endangered through being targeted for exploitation or killing for commercial reasons and/or through being particularly attractive to collectors.

International obligations apply to a taxon which is:

- naturally resident and listed on Appendices I, II or III of the Bern Convention; Annexes II, IV or V of the EC Habitats and Species Directive; Appendix I of the Bonn Convention (unless derogations are in force)

and/or

- endemic to Great Britain and included in a JNCC-approved British Red List.

Decision criteria

An animal or plant taxon would be nominated only if scheduling has the potential to afford significant benefit to it, thus helping to arrest a decline or to facilitate an increase in population size, number of localities occupied or range. Potential benefits to be gained from scheduling are:

- protection of animals at risk from persecution or other intentional killing or injuring

- protection of animals or plants from collecting, where this is a problem or is likely to become one

- protection of structures or places which animals use for shelter or protection (including breeding sites or other essential elements of the habitat)

- protection of animals from intentional disturbance

- protection of plants from intentional damage or destruction

- protection of animals or plants from currently or potentially damaging trade, or other forms of exploitation.

APPENDIX 6

PROFORMAS FOR SUBMISSION OF SUGGESTIONS FOR AMENDING SCHEDULES 5 AND 8 OF THE WILDLIFE AND COUNTRYSIDE ACT, 1981

FORM 1 IN CONFIDENCE

THIRD QUINQUENNIAL REVIEW OF SCHEDULES 5 AND 8 OF THE WILDLIFE AND COUNTRYSIDE ACT 1981

CHECK LIST OF ELIGIBILITY, THREATS AND BENEFITS TO JUSTIFY SCHEDULING OR DESCHEDULING AN ANIMAL OR PLANT, OR CHANGING THE CATEGORIES OF PROTECTION

ANIMAL OR PLANT NAME:

ATTRIBUTES ESSENTIAL FOR A SCHEDULED ANIMAL OR PLANT

	Yes	No	Not known
Native or qualifying non-native	☐	☐	☐
Established in the wild or with establishment potential	☐	☐	☐
Taxonomically well authenticated	☐	☐	☐

OTHER RELEVANT INFORMATION

Bern/Bonn/EC Habitats & Species Directive					☐	☐	☐
Endemic to Great Britain					☐	☐	☐
Great Britain Red Data List	Ex. ☐	En. ☐	Vul. ☐	Rare ☐	☐	☐

INDICATORS OF THREATENED STATUS

Category of decline/threat				Likelihood that scheduling will counter actual/likely threat/decline		
Actual	Likely	Believed no		High	Low	Not at all
☐	☐	☐	Only a single known locality	☐	☐	☐
☐	☐	☐	Confined to a threatened habitat	☐	☐	☐
☐	☐	☐	Rapid population decline	☐	☐	☐
☐	☐	☐	Rapid decrease in range/sites	☐	☐	☐
☐	☐	☐	Other indicator (explain overleaf)	☐	☐	☐

THREATS

☐	☐	☐	Killing/injuring (animals)	☐	☐	☐
☐	☐	☐	Possession/control (animals)	☐	☐	☐
☐	☐	☐	Place of shelter threatened (animals)	☐	☐	☐
☐	☐	☐	Disturbance (animals)	☐	☐	☐
☐	☐	☐	Picking/uprooting/destruction (plants)	☐	☐	☐
☐	☐	☐	Taking/collecting (animals & plants)	☐	☐	☐
☐	☐	☐	Trade (animals & plants)	☐	☐	☐
☐	☐	☐	Other exploitation (explain overleaf)	☐	☐	☐

Name of proposer: Organisation/ private address: Date:

Please tick boxes as appropriate

FORM 2

IN CONFIDENCE

THIRD QUINQUENNIAL REVIEW OF SCHEDULE 5 OF THE WILDLIFE AND COUNTRYSIDE ACT 1981
RECOMMENDATION FOR CONSIDERATION - SUMMARY DATA SHEET (ANIMAL)

Latin name	Common name	Type of animal (e.g. mammal, beetle, Crustacea)

Existing Schedule 5 protection

None ☐ or Section 9(1) Kill ☐ Injure ☐ Take ☐
9(2) ☐
9(4) (a) ☐ (b) ☐
9(5) ☐
(see below for explanation)

Proposal

Add to Schedule ☐ or Remove from Schedule ☐
or Increase protection ☐ or Leave protection as before ☐
or Decrease protection ☐

Categories of protection recommended (if any)

Full protection (all categories) ☐

or Section 9(1) Kill ☐ Injure ☐ Take ☐
9(2) Possess/control: live ☐ dead ☐ derivative ☐

Section 9(4)(a) Structure/place of shelter/protection: damage ☐ destroy ☐ obstruct ☐
9(4)(b) Disturb while occupying structure/place ☐
9(5) Sell: live ☐ dead ☐ derivative ☐

Area(s) of Great Britain recommended for coverage

All of GB ☐ or England ☐ Scotland ☐ Wales ☐ Other ☐ (describe)

Period of year recommended for protection

All year ☐ or part of year ☐ (describe)

Justification(s) for protection (if recommended)

In danger of extinction ☐ or likely to become so ☐ International obligation ☐ (describe)

Justification(s)(for decreasing/removing protection (if recommended)

Proposer's name	Organisation/ private address	Date	Detailed data sheet (Form 4):	attached ☐ not attached ☐

For office use only.	Organisation	Date	Comment
Checked by: Name			

Please tick boxes and fill in spaces as required.

FORM 3

IN CONFIDENCE

THIRD QUINQUENNIAL REVIEW OF SCHEDULE 8 OF THE WILDLIFE AND COUNTRYSIDE ACT 1981
RECOMMENDATION FOR CONSIDERATION - SUMMARY DATA SHEET (PLANT)

Latin name	Common name	Type of plant (e.g. moss, alga, Rosaceae)

Existing Schedule 8 protection

None ☐ or Section 13(1)(a) ☐ 13(2) ☐ (see below for explanation)

Proposal

Add to Schedule ☐ or Remove from Schedule ☐
or Increase protection ☐ or Leave protection as before ☐
or Decrease protection ☐

Categories of protection recommended (if any)

Full protection (all categories) ☐

or Section 13(1)(a) Pick ☐ Uproot ☐ Destroy ☐ Section 13(2) Sell: live ☐ dead ☐ derivative ☐

Area(s) of Great Britain recommended for coverage

All of GB ☐ or England ☐ Scotland ☐ Wales ☐ Other ☐ (describe)

Period of year recommended for protection

All year ☐ or part of year ☐ (describe)

Justification(s) for protection (if recommended)

In danger of extinction ☐ or likely to become so ☐ International obligation ☐ (describe)

Justification(s)(for decreasing/removing protection (if recommended)

Proposer's name:	Organisation/ private address	Date	Detailed data sheet: attached ☐ not attached (Form 4): ☐

For office use only.	Organisation	Date	Comment
Checked by:			
Name			

Please tick boxes and fill in spaces as required.

FORM 4

IN CONFIDENCE

THIRD QUINQUENNIAL REVIEW OF SCHEDULES 5 AND 8 OF THE WILDLIFE AND COUNTRYSIDE ACT 1981
DETAILED RECOMMENDATION FOR CONSIDERATION

Latin name:	Genus Species Infra-specific taxon (if any)	Type of organism e.g. mammal, beetle, moss, Rosaceae)
English name:		

Distribution in GB (if known)
Distribution elsewhere (if known)

Red Data Book status in GB (if known)
International status (if known)
Existing legal protection in GB

Habitat

Threats(s) (check against list of threats and benefits)

Recommendation (for legal status)

Reason(s) and justification for recommendation (check against list of threats and benefits; continue overleaf if necessary)

Please attach completed summary data sheet (Form 1 or Form 2) and completed check list of threats and benefits (Form 3), together with any further relevant information and references.

Proposer: Organisation/private address: Date:

APPENDIX 7

LIST OF NON-GOVERNMENTAL ORGANISATIONS CONSULTED DURING THE INITIAL STAGE OF THE THIRD QUINQUENNIAL REVIEW

Angler's Co-operative Association
Association for the Protection of Rural Scotland
Badenoch and Strathspey Conservation Group
Bat Conservation Trust
Botanical Society of the British Isles (including BSBI Scotland)
British Arachnological Society
British Association of Nature Conservationists (including BANC Scotland)
British Association for Shooting and Conservation
British Bryological Society
British Deer Society
British Divers Marine Life Rescue
British Dragonfly Society
British Ecological Society
British Hedgehog Preservation Society
British Herpetological Society
British Horse Society
British Isles Bee Breeders Association
British Lichen Society
British Mycological Society
British Naturalists' Association
British Phycological Society
British Pteridological Society
British Trust for Conservation volunteers
Butterfly Conservation
Byways and Bridleways Trust
Campaign for the Protection of Rural Wales
Care for the Wild
Council for National Parks
Council for the Protection of Rural England
Countryside Management Association
Environmental Investigation Agency
Fauna and Flora Preservation Society
Field Studies Council
Friends of the Earth (including FOE Cymru)
Friends of the Earth Scotland
Green Alliance
Greenpeace UK
Herpetological Conservation Trust
Institute of Biology
International Fund for Animal Welfare
International League for the Protection of Cetaceans
International Union for the Conservation of Nature (IUCN) Shark Specialist Group
International Wildlife Coalition
John Muir Trust

Joint Committee for the Conservation of British Invertebrates
Mammal Society
Marine Conservation Society (including MCS Scotland)
Mountaineering Council of Scotland
National Federation of Badger Groups
National Federation for Biological Recording
National Trust (including NT for North and South Wales)
National Trust for Scotland
National Small Woods Association
Open Spaces Society
Otter Trust
People's Trust for Endangered Species
Plantlife
Plantlife Link
Ramblers' Association (including RA Scotland and RA Wales)
Reforesting Scotland
Royal Society for the Protection of Birds (including RSPB Wales and RSPB Scotland)
Royal Society for the Prevention of Cruelty to Animals
Scottish Conservation Projects Trust
Scottish Council for National Parks
Scottish Countryside Activities Council
Scottish Countryside Rangers Association
Scottish Environmental Education Council
Scottish Field Studies Association
Scottish Ornithologists' Club
Scottish Scenic Trust
Scottish Trust for Underwater Archaeology
Scottish Wild Land Group
Sea Shepherd
Society of Antiquaries of Scotland
TRAFFIC International
Vincent Wildlife Trust
Welsh Historic Gardens Trust
Welsh Sports Association (Outdoor Pursuits Group)
Whale and Dolphin Conservation Society
Wildflower Society
Wildfowl and Wetlands Trust
Wildlife and Countryside Links
Wildlife Trusts (including Scottish Wildlife Trust and Association of Welsh Wildlife Trusts)
Woodland Trust (including WT Scotland)
World Conservation Monitoring Centre
World Wide Fund for Nature - UK
Youth Hostels Association (including YHA Wales)
Young People's Trust for the Environment and Nature Conservation
Zoological Society of London

APPENDIX 8

LIST OF CONSULTEES FOR THE FIRST DRAFT REPORT

UK statutory conservation agencies

Countryside Council for Wales
Department of the Environment Northern Ireland
English Nature
Joint Nature Conservation Committee Support Unit
Scottish Natural Heritage

Other organisations consulted initially

All organisations listed in Appendix 7
Countryside Commission
Forestry Authority
Institute of Freshwater Ecology
Institute of Terrestrial Ecology
Marine Biological Association
National Rivers Authority

Organisations brought into the consultation at the first draft report stage

Amateur Entomological Society
Balfour Browne Club
Bees, Wasps and Ants Recording Society
British Entomological and Natural History Society
Centre for Coastal and Marine Science
Conchological Society of Great Britain and Ireland
Federation of Zoological Gardens of Great Britain and Ireland
Game Conservancy Trust
Institute of Oceanographic Sciences
Marine Biological Association
Natural History Museum
Royal Entomological Society
Scottish Association for Marine Science
Terrestrial Invertebrate Taxa Advisory Group
University College of North Wales Marine Biology Department

APPENDIX 9

SUGGESTIONS FOR AMENDMENTS TO SCHEDULES 5 AND 8 NOT ENDORSED BY THE QUINQUENNIAL REVIEW WORKING GROUP

A. Suggestions for removing species from Schedule 5 or for modifying existing protection for animals on Schedule 5

Suggestion	Proposer(s)	Reasons(s) for rejecting suggestion
Aeshna isosceles Norfolk aeshna - remove from Schedule because not threatened by collecting	JNCC	Still very restricted in distribution; ditches (places of shelter) could be destroyed
Austropotamobius pallipes freshwater crayfish - full protection	NRA	Increased protection would not contribute to curbing the principle threat, crayfish plague
Bufo bufo common toad - protection under S9 (1)	BHS	Species not endangered through killing, injuring or taking, but potentially through trade. Already protected under S9 (5)
Catinella arenaria sandbowl snail - remove from Schedule	JNCC	Endangered species threatened by habitat degradation
Lutra lutra otter - increase protection	OT	Full protection already in force
Felis silvestris wildcat - all wild cats (*Felis* spp.) should be protected in *F. silvestris* strongholds	MSG SNH	Proposal withdrawn by SNH. Action plan for protection of the wildcat developed.
Rana temporaria common frog - protection under S9 (1)	BHS	See *Bufo bufo*
Triturus helveticus smooth newt - protection under S9 (1)	BHS	See *Bufo bufo*

Proposers:

BHS	British Herpetological Society
JNCC	Joint Nature Conservation Committee Support Unit
MSG	Inter-agency Mammal Specialists Group
NRA	National Rivers Authority
OT	Otter Trust
SNH	Scottish Natural Heritage

B. Suggestions for additions to Schedule 5

Suggestion	Proposers(s)	Reason(s) for rejecting suggestion
Agricola haematidia southern chestnut moth - full protection	JNCC	Recent survey has shown the moth to be more abundant than first thought
Anisus vorticulus little whirlpool ram's-horn snail - S9(4) only	Conc. Soc.	Unsuitable management of habitats will be addressed by the Biodiversity Action Plan; scheduling would not give extra benefit
Apis mellifera mellifera wild honey bee - S9(4) only	BIBBA	Protection would not be enforceable because of MAFF disease precautions; problems of hybridisation
Erinaceus europaeus hedgehog - S9 (1) only	BHPS	Not endangered; scheduling inappropriate for animal welfare
Eriopygodes imbecilla Silurian moth - full protection	CCW	Proposal withdrawn because 1995 survey showed moth to be out of danger
Gobius gasteveni Steven's goby - S9 (1) & S9(4)(a)	MBA	Requirements poorly defined; scheduling would not be effective
Hippocampus hippocampus short-snouted seahorse - full protection	EN	Probably vagrant; proposal withdrawn
Hippocampus ramulosus seahorse - full protection	EN	Existence of threat not sufficiently well established
Lampreta fluviatilis river lamprey - S9 (1) & S9 (4)	MBA	Not endangered
Lepus capensis brown hare - S9 (1) & S9 (4)	MS	Not endangered
Lepus timidus mountain hare - full protection in England only	MS	Introduced to England; not endangered elsewhere
Metacnephia amphora a black fly - S9 (4) only	IFE	Scheduling could not be used to increase water supply to streams
Mustela putorius polecat - full protection	MSG	Populations currently increasing

Osmerus operlanus smelt - S9(1) & S9(4) - full protection	MBA NRA	Increasing in rivers where pollution has decreased; not endangered by fishing
Paraleptophlebia werneri a mayfly - S9 (4) only	IFE	Scheduling could not be used to increase water supply to streams
Petromyzon marinus sea lamprey - S9 (1) & S9 (4) - full protection	MBA NRA	Not endangered
Raja batis common skate - S9(1) only	MBA	Insufficient data to substantiate case; suggestion withdrawn by MBA
Segmentina nitida shining ram's-horn snail - S9(4) only	Conc. Soc.	Unsuitable habitat management will be addressed by the Biodiversity Action Plan; scheduling would not give extra benefit
Unionidae freshwater mussels - S9(5) only	EN	No evidence for trade affecting wild populations

Proposers:			
BHPS	British Hedgehog Preservation Soc.	JNCC	JNCC Support Unit
BIBBA	British Isles Bee Breeders Assoc.	MBA	Marine Biological Assocation
Con. Soc.	Conchological Society of GB	MS	Mammal Society
CCW	Countryside Council for Wales	MSG	Agency Mammal Specialists Group
IFE	Institute of Freshwater Ecology	NRA	National Rivers Authority
EN	English Nature		

C. Suggestions for removing plants from Schedule 8.

Suggestion	**Proposer(s)**	**Reason(s) for rejecting suggestion**
Alyssum alyssoides - remove from Schedule because not native	EN	Some doubt over whether or not the species is introduced to GB
Arenaria norvegica ssp. *norvegica* - remove the commoner subspecies from Schedule	JNCC	Both subspecies will remain on British Red List and are still threatened; proposal withdrawn
Bupleurum falcatum - remove from Schedule because not native	BSBI, EN	May after all be native*; re-introduction from seed of local provenance in Essex**
Gymnomitrium apiculatum - remove because no evidence of threat	JNCC	Threat from skiing developments identified; although not in revised Red List, a rare species

Lacanactis hemisphaerica	JNCC	Endemic and threatened by church renovation works

Proposers: BSBI Botanical Society of the British Isles
EN English Nature
JNCC Joint Nature Conservation Committee Support Unit

References:

* Field, M.H. 1994. The status of *Bupleurum falcatum* L. (Apiaceae) in the British Flora. *Watsonia, 20,* 115-117.

** Birkinshaw, C. 1990. A report on the re-introduction of *Bupleurum falcatum* to...Essex. 1988-89. *CSD Report No. 1154.*

D. Suggestions for additions to Schedule 8

Reasons for rejecting suggestions (other than those explained in the table):

1. Not considered in danger of extinction or likely to become so in the near future, according to information held by the statutory conservation agencies (i.e. not included in current Red Lists).

2. Habitat degradation or unsuitable management are the main threats, which are not be justifications for scheduling.

Suggestion	Proposer(s)	Reason(s) for rejecting suggestion
FLOWERING PLANTS		
Adonis annua	WT	Seed on sale; EN action plan for arable weeds should cover this species
Arabis glabra	WT	2
Armeria maritima ssp. *elongata*	EN	2
Asparagus officinalis ssp. *prostratus*	CCW	2
Carex buxbaumii	BSBI	Increasing; protection of sites being addressed
Carex flava	JNCC	2
Carex muricata ssp. *muricata*	BSBI, PL	2
Centaurea cyanus	EN	Introduced in many area
Epipactis atrorubens	SNH	1
Galanthus nivalis - S13(2) only	PL	Not certainly native anywhere; most populations known to be introduced
Galium parisiense	BSBI	1
Hammarbya paludosa	BSBI,PL, WT	1

Hieraceum sect *Alpestria* (all 13 species endemic to Shetland)	SNH	2. Microspecies, difficult to identify; many other microspecies (e.g. *Sorbus*) are equally threatened Proposal withdrawn by SNH
Illecebrum verticillatum	BSBI,PL	1, 2
Juncus pygmaeus	BSBI,PL	2
Limosella aquatica	WT	1, 2
Linnaea borealis	SNH	1. Introduced in a number of places; SNH recovery programme
Lycopodiella inundata	WT	1. Not exploited so action under EC Habitats & Species Directive not necessary
Lychnis viscaria	BSBI	2. SNH recovery programme
Melampyrum cristatum	EN	1, 2
Orobanche purpurea	WT	2. Priority species for EN action plan
Orobanche rapum-genistae	WT	1
Petrorhagia prolifera	PL	Uncertainly native; covered by Breckland Action Plan
Ranunculus tripartitus	EN, CCW, WT	2.
Ruscus aculeatus - S13(2) only	WT	1. No evidence of substantial exploitation
Saxifraga rivularis	SNH	1
Scirpoides holoschoenus	EN	2. Known introduction
Sorbus leyana	JNCC	More trees discovered; proposal withdrawn.
Spiranthes romanzoffiana	PL	1. Increasing numbers of records recently
Torilis arvensis	WT	1. EN action plan for arable weeds covers this species
FERNS		
Cystopteris montana	SNH	1
Dryopteris cristata	BPtS	2
BRYOPHYTES (MOSSES AND LIVERWORTS)		
Andreaea blyttii	BBS	1, 2. Accidental rather than deliberate damage a threat
Andreaea frigida	BBS	Accidental rather than deliberate damage a threat
Andreaea sinuosa	BBS	1, 2. Accidental rather than deliberate damage a threat; cause of decline unknown
Aplodon wormskjoldii	BBS	2
Barbula maxima	BBS	Does not occur in GB (in Republic of Ireland)

Suggestion	Proposer(s)	Reason(s) for rejecting suggestion
Tetrodontium repandum	BBS	2. Needs to be collected in order to identify
Thamnobryum cataractarum	BBS	2. Locally abundant
Tortula freiburgii	BBS	1, 2
Tortula vahliana	BBS	2. Insufficient data to tell whether endangered
Trochobryum (Seligeria) carniolica	JNCC	2
Weissia multicapsularis	BBS	2. Ephemeral; not seen since 1967
LICHENS		
Bellemerea alpina	BLS	Unintentional damage the main threat
Cladonia sect. *Cladina* - S13(2) only	BLS,WT	1
Cladonia botrytes	BLS	Status unclear; reason for decline unknown
Collema fragrans	BLS,WT	2
Hypogymnia intestiniformis	BLS	Not seen for 30 years; reason for decline obscure
Peltigera venosa	BLS	? 2. Reason for decline obscure
Pyrenula dermatodes	BLS	2
Pyrenula nitida	BLS	2
Schismatomma graphidioides	BLS	2
STONEWORTS (ALGAE)		
Chara baltica	NS	2
Chara connivens	NS	2
Chara muscosa	NS	2. No known GB sites
Nitella gracilis	NS	2
Nitella tenuissima	NS	2
Nitellopsis obtusa	NS	2
Tolypella intricata	NS	2
Tolypella nidifica	NS	2
Tolypella prolifera	NS	2
FUNGI		
Amanita friabilis	BMS	2
Boletus rhodoxanthus	BMS	Taxonomy doubtful; proposal withdrawn
Boletus satanus	BMS	2
Gloeophyllum odoratum	BMS	2
Gomphus clavatus	BMS	Only recent record erroneous
Hypocreopsis lichenoides	BMS	2
Poronia punctata	BMS,WT	2
Tulostoma niveum	BMS	2

Proposers	BBS	British Bryological Society
	BLS	British Lichen Society
	BMS	British Mycological Society
	BPtS	British Pteridological Society
	BSBI	Botanical Society of the British Isles
	CCW	Countryside Council for Wales
	EN	English Nature
	JNCC	Joint Nature Conservation Committee Support Unit
	PL	Plantlife
	NS	Nick Stewart
	SNH	Scottish Natural Heritage
	WT	Wildlife Trusts

APPENDIX 10. RECOMMENDATIONS FOR AMENDMENTS TO SCHEDULES 5 AND 8 BY THE JOINT NATURE CONSERVATION COMMITTEE

A. Recommendations for additions to Schedule 5

Species		Initial proposer(s)	Recommendation from JNCC	Reason(s)/GB Red List/ international status
VERTEBRATES				
Allosa fallax	Twaite shad	Marine Biological Assoc.	Protect under Section 9(4)(a) only	Decline; spawning areas disturbed; HSD Annexes II & V
Arvicola terrestris	Water vole	JNCC Support Unit, Mammal Society	Protect under Sections 9(4)(a) and 9(4)(b)	Dramatic decline; habitat destruction; disturbance
Cetorhinus maximus	Basking shark	SNH, EN, IUCN, Scottish Wildlife Trust, Marine Conservation Society, Liverpool University	Full protection	Threat from fishing; large, long-lived and few young (c.f. whales); internationally threatened
Gobius cobitis	Giant goby	English Nature, Marine Biological Assoc.	Full protection	Collected; habitat disturbance
Gobius couchii	Couch's goby	English Nature, Marine Biological Assoc.	Full protection	Collected; habitat disturbance
Rana lessonae	Pool frog	JNCC Support Unit, English Nature	Full protection	Attractive to collectors; single locality where probably native; HSD Annex IV

Species		Initial proposer(s)	Recommendation from JNCC	Reason(s)/GB Red List/ international status
INVERTEBRATES				
Atrina fragilis	Fan mussel	JNCC Support Unit	Protect under Sections 9(1), 9(2), and 9(5)	Threatened by collectors
Bembecia chrysidiformis	Fiery clearwing moth	JNCC Support Unit	Full protection	Single locality; threatened by collecting, which also destroys food plant; trade possible; Endangered in GB
Clavopsella navis	Marine hydroid	English Nature	Full protection	'Place of shelter' threatened by sea defences; globally rare
Coenagrion mercuriale	Southern damselfly	British Dragonfly Society	Full protection	Bern App. II, HSD Annex II
Gortyna borelii	Fisher's estuarine moth	JNCC Support Unit	Full protection	Threatened by collecting and trade; Vulnerable in GB
Lucanus cervus	Stag beetle	English Nature	Protect under Section 9(5) only	Bern App. III, HSD Annex II; potential threat from collectors

B. Recommendations for removing species from Schedule 5 or for modifying existing protection for animals on Schedule 5

Species		Initial proposer(s)	Recommendation from JNCC	Reason(s)/GB Red List/ international status
Alosa alosa	Allis shad	Scottish Natural Heritage	Add protection under Section 9(4)(a)	Protection of spawning beds necessary; HSD Annexes II and V
Eurodryas aurinia	Marsh fritillary butterfly	Butterfly Conservation	Increase to full protection	Bern App. II, HSD Annex II; collected
Hadena irregularis	Viper's bugloss moth	JNCC Support Unit	Remove from Schedule	Extinct for 20 years
Lycaena dispar	Large copper butterfly	English Nature	Increase to full protection	Threatened by collecting; Bern App. II, HSD Annexes. II & IV
Margaritifera margaritifera	Pearl mussel	Scottish Natural Heritage	Add protection under Section9(5)	Threatened by amateur collecting; Bern App. III, HSD Annexes II & V

C. Recommendations for additions to Schedule 8

FLOWERING PLANTS

Species		Initial proposer(s)	Recommendation from JNCC	Reason(s)/GB Red List/ international status
Dianthus armeria	Deptford Pink	Botanical Society of the British Isles	Full protection in England and Wales only	Serious decline; threatened by habitat destruction; not native to Scotland; Vulnerable in GB
Eleocharis parvula	Dwarf spike-rush	English Nature, Wildlife Trusts	Full protection	Urban development and coast defences potential threats; Vulnerable in GB
Hyacinthoides non-scripta	Bluebell	Botanical Society of the British Isles	Protect against sale only - Section 13(2)	Dug up in quantities for sale; potential threat from pharmaceutical interests
Leersia oryzoides	Cut-grass	English Nature, NRA, (Environment Agency), Botanical Society of the British Isles	Full protection	Threatened by canal restoration; Endangered in GB
Tephroseris integrifolia ssp. *maritima*	South Stack fleawort	Countryside Council for Wales	Full protection	Endemic to Anglesey; attractive so may be collected; Vulnerable in GB

Species		Initial proposer(s)	Recommendation from JNCC	Reason(s)/GB Red List/ international status
MOSSES				
Anomodon longifolius	Long-leaved anomodon	British Bryological Soc.	Full protection	Vulnerable to collection; Endangered in GB
Bryum neodamense	Long-leaved threadmoss	British Bryological Soc.	Full protection	Attractive to collectors; threatened by coastal development; Endangered in GB
Desmatodon cernuus	Flamingo moss	British Bryological Soc.	Full protection	Threatened by land reclamation; Endangered in GB
Hygrohypnum polare	Polar feather-moss	British Bryological Soc.	Full protection	Threatened by collecting; Vulnerable in GB
LICHENS				
Alectoria ochroleuca	Alpine sulphur-tresses	British Lichen Soc.	Full protection	Threatened by collecting; Vulnerable in GB
Catolechia wahlenbergii	Goblin lights	British Lichen Soc.	Full protection	Threatened by collecting; Vulnerable in GB
Cladonia convoluta	Convoluted cladonia	Wildlife Trusts	Full protection	Threatened by collecting; Vulnerable in GB
Enterographa elaborata	New Forest beech-lichen	Wildlife Trusts	Full protection	Single site; lives on decaying pollards threatened with destruction; Critically Endangered in GB

Species		Initial proposer(s)	Recommendation from JNCC	Reason(s)/GB Red List/ international status
FUNGI				
Battarraea phalloides	Sandy stilt puffball	British Mycological Soc.	Full protection	Attractive to collectors; Endangered in GB; internationally threatened
Boletus regius	Royal bolete	British Mycological Soc.	Full protection	Threatened by collecting; edible; Endangered in GB; internationally threatened
Buglossoporus pulvinus	Oak polypore	British Mycological Soc.	Full protection	Grows on old pollards which are under threat; Endangered in GB; internationally threatened
Hericium erinaceum	Hedgehog fungus	Hampshire Wildlife Trust	Full protection	Grows on threatened senescent trees; edible and attractive; Endangered in GB; internationally threatened