

Conservation Education

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Suite 29, Yeovil Innovation Centre, Barracks Close,
Yeovil, BA22 8RN
Tel: 01935 385962
E-mail: info@ypte.org.uk
Web site: www.ypte.org.uk
Director: Peter Littlewood
Author: Morna Sims
Design: Vanessa Adnitt
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Britain's Endangered Species

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If you went down to the woods today, would you go in disguise expecting to find bears? What animals do you think you really would find? Perhaps a squirrel, a rabbit or two,

woodpeckers, robins, roe deer, worms, beetles and butterflies? Hopefully you would see some of these if you were quiet enough and not having a large teddy bears' picnic.

If you'd gone down to the woods 3,000 years ago, you'd have been in for a big surprise. This is because you actually might have stumbled across a Brown bear, not to mention a Lynx, a Beaver, an Aurochs (a what? It was an animal rather like a wild ox or big cow), an Irish elk, a Wolf or a Wild boar.



Wow - what an exciting day that would have been!

So why wouldn't you see the bears, lynx and beavers down there today? It's not because they've all been scared off or that they never existed or lived here, they really did roam our land once upon a time. It is because all these animals are now **extinct** in Britain. This means that the very last surviving member of the species has died and there are no more left at all.

Can you name any other extinct animals or birds? Perhaps you thought of the dinosaurs – extinct long before humans came along. Or you may have thought of the Dodo, a large, flightless bird, rather like a turkey, which lived on the island of Mauritius near Africa. It became totally extinct much more recently,



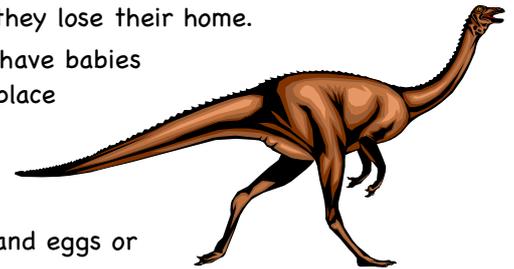
in the mid 1600s. The Dodo is just one of hundreds of species of plants and animals that have become extinct somewhere in the world in the last few thousand years and sadly there are many more at risk of extinction, or endangered, around the world today.

Kit List for Survival:

Causes of extinction

So why do animals die out completely? To work this out, think about what animals need to survive and you'll come up with some clues of your own.

- ☑ **Food and clean water.** If either of these runs out or becomes poisoned then the animals (and plants) are in trouble.
- ☑ **Clean air** to breathe.
- ☑ **Shelter** from extreme heat or cold, somewhere safe to eat, sleep and raise a family. In other words, a healthy **habitat**. If they lose their habitat, they lose their home.
- ☑ A **mate** to pair up and breed with (reproduce) so they can have babies and keep the species' population going. Babies that will replace them when they die.
- ☑ **Safety** from humans who might: destroy their habitat; introduce disease; introduce competition from other species; hunt them too much for their meat, fur, feathers and eggs or for sport.
- ☑ **Protection from natural disasters** such as extreme weather events like storms, drought or flooding and maybe even asteroid strikes (did one of these kill off the dinosaurs?).



Survival is a very fine balance between all these factors. Even the slightest problem with just one can cause species numbers to fall quickly and dramatically over a short space of time.



Wild boar

For example, the Dodo was believed to have been hunted to extinction by humans for its meat and feathers. However, it is now thought that rats, monkeys and pigs brought to the island (introduced) by humans caused the extinction by raiding the nests on the ground for the Dodos' eggs – a problem that did not exist before humans brought these animals to the island.

Sometimes the drop in species numbers can happen too quickly and subtly for us to notice until it is too late and the species has reached a point where the numbers are unlikely to ever recover and the species slowly but surely dies out.

Britain's Story of Endangered Species

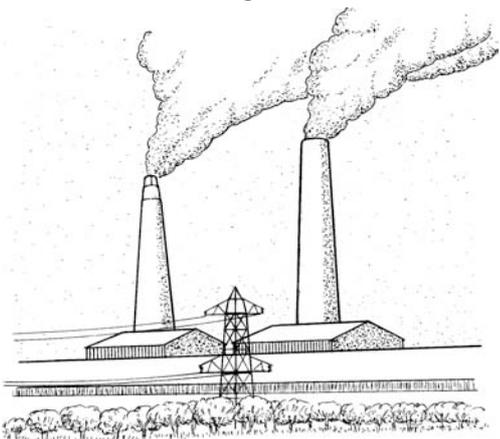
- There are an estimated 55,000 species of plants and animals native* to Britain.
- 500 of Britain's known plant and animal species are already known to be extinct (most of these have been lost in the last 200 years).
- 1/3 of our species are believed to be dropping in number.
- 1000 species are on the 'at risk of extinction' list, with special protection measures in place.
- Every plant and animal species has a role, or niche in the overall ecosystem. This means that one or more species depends on the other for survival, so the overall stability of our environment is weakened each time a single species is lost.
- Recent British extinctions include the Chequered Skipper butterfly, the Mouse-eared bat and the Great yellow bumblebee.
- One species that was found in Britain that is now also globally extinct is the Ivell's sea anemone. It was lost from its last known remaining site in the World - a lagoon in West Sussex - as recently as the 1980s.



Before we look at the endangered British animals and plants themselves, let's first explore the main problems facing them:

Pollution

- Intensive farming also involves increased use of pesticides, herbicides and fertilisers which are chemicals that kill pests and weeds and help crops grow more quickly. Unfortunately these chemicals can pollute water habitats and kill off wildlife.
- Modern industry and manufacturing often produce poisonous chemical waste that can get into waterways and the air, causing problems for the wildlife living there.



Habitat Loss

Around 3,500BC **66%** of Britain's land was covered in a blanket of dense, mixed woodland. By 1086 AD only **20%** was covered in trees and now it is only **12%**.

So where have all the trees gone?

Originally they were only cut down for wood for fires to keep people warm and for cooking on as well as to build houses with.

Nowadays the main causes of woodland and other habitat losses are:

- An increase in the demand for food and therefore more intensive farming practices to get as much food as possible from our land. Hedges, trees and scrubland are removed to make fields bigger, wetlands and ponds are drained, rivers are diverted and flower-rich meadows destroyed to make way for more intensive food production.
- A constant increase in the demand for space to build new houses, roads, offices, airports, shopping centres and car parks for our ever-increasing human population (see Con Ed issue 20 - 'Population Explosion').

Loss of habitat leads to a loss of food, shelter and safety - part of the essential kit list for survival.

Introduced Species

Many of Britain's familiar animals and plants would not be here if humans had not brought them in from somewhere else. But they can cause problems to our native habitats and species too. Examples include:

- **Rabbits** – these were brought over from mainland Europe – by either the Normans in the 12th century or possibly even earlier, by the Romans – as a source of food and fur. They have bred very successfully ever since and can now cause lots of damage by over-grazing grassland and digging holes and tunnels under fragile habitats.
- **Grey squirrels** – these were introduced to Cheshire in 1876 from North America, possibly because people thought they were cute and interesting and would be lovely to have here. However, they too bred very successfully and now occur all over much of Britain in large numbers. Unfortunately they carry a disease called 'squirrel pox' which is very infectious and deadly for our native Red squirrels – they have no immunity to it.
- **Rhododendron plant** – this popular garden plant with beautiful large purple flowers was introduced in the late 18th century. It is now very widespread in parts of Scotland and Ireland and is considered an invasive species and it grows quickly, very thick and dense, crowding out many native plants.



Climate Change

We're all aware that our climate is steadily changing – although it is still being debated as to why and how much (see Con Ed issue 16 'Climate Change' for more information). Climatic changes that affect animals and plants are ones that happen too fast or too consistently over long periods of time for them to be able to adapt in time to survive the new conditions.



A drought

An example could be that if our winter temperatures drop to record low levels year after year, then some species of plants may not be able to survive the consistently cold temperatures and as they can't move to warmer climates easily then their species could die out.

The same applies for regular increases in summer temperatures, reduced rainfall over certain months of the year and other significant climatic changes – sometimes called 'global warming'.

It is widely believed that human activity is to blame for changes in our climate, and therefore for the resultant loss of some plant and animal species as a result.

* native species are those that have been around since the English Channel split Britain from the rest of Europe 7,500 years ago. Species that are not restricted to land are called native if they breed in Britain e.g. seals, bats, birds.

Now let's look at some of these 'at risk' native species. We'll examine the reasons why their numbers are declining and any ways that the species can be saved. Sadly there are far too many to mention them all so just a handful from each group will be considered.

For a full list, go to http://en.wikipedia.org/wiki/List_of_endangered_species_in_the_British_Isles

- For each species, we'll consider **what** type of animal it is, **where** it lives (in Britain) and what habitat it prefers, **why** it's endangered and what can be done to **help** it.
- Some of the species considered may only be at risk of extinction in Britain (**B**) but have healthy numbers elsewhere in the world. Others are globally at risk (**G**) and their British populations may be the vital last remaining members of the species.
- If there is a number in brackets e.g. (7) after the name of the animal or plant, it tells us how many species of that group are in decline in total.

Mammals **Animals**

Scottish Wildcat (*Felis silvestris grampia*)(G)

What? Rather like a domestic tabby, the Scottish Wildcat is a large, heavily built grey and black stripy wild cat. It is the last remaining large *predator* in Britain, feeding on mice, voles, rabbits and other small animals. They are solitary creatures, largely nocturnal and are very difficult to see because they are very shy.

Where? In the 16th century they used to be widespread throughout the country but were extinct in England by 1853. It is estimated that there are now only 400 or so left in the wild in the Highlands of Scotland. Dense woodlands are their preferred habitat although they adapt well and roam across a mixture of habitats in their search for food.

Why?

For many centuries, Wildcats were hunted for their fur. But the main threats facing them these days are habitat

loss by clearance for farming and development and overgrazing by red deer, who eat young tree shoots. They also breed with domestic cats, thus 'diluting' their genes and breeding out the original Wildcat genes.

Help? Owners of cats in the Highlands are urged to neuter them to prevent inter-breeding. Others can help by supporting wild cat conservation groups such as the Scottish Wildcat Association.



Hazel dormouse (*Muscardinus avellanarius*) (B)

What? A small rodent with large black eyes, golden coloured fur and a completely furry tail. They are *nocturnal* (active at night) and *hibernate* in winter, although they can also spend a lot of time sleeping in the summer if the weather is poor or food is scarce. In fact the name 'dor' comes from the Latin 'dormire' – to sleep. When they sleep they curl right up and wrap their tails round their bodies and faces like a blanket.



Where? Hazel dormice are mostly found in the southern counties of England and Wales (with small pockets elsewhere), having been more widespread in the past. Their habitat is *deciduous* woodland and bushy hedgerows where they eat fruits, hazel nuts, aphids and other small insects. They tend to spend most of their lives crawling about in the tree tops, where it is safer, rather than risking coming to the ground. They make a round nest of honeysuckle and fresh leaves in which they have their babies.

Why? The main threat facing Hazel dormice is habitat loss, as farms get bigger and hedgerows are removed. It has been estimated that 300,000 miles of hedgerows have been lost in the last 60 years. Long, cold winters also cause huge drops in numbers.

Help? The Hazel Dormouse is protected by law, under the Wildlife and Countryside Act 1981 which means it is illegal to kill, injure, disturb, catch or sell them without a licence, although protection of hedges and woodlands is the main way to conserve this species.

European Water Vole (*Arvicola amphibious*) (B)

What? Also known as the Water Rat (and 'Ratty' from 'The Wind in the Willows') water voles are a semi-aquatic brown, furry rodent. They are much cuter than rats, however, with rounder noses, chubby faces and short fuzzy ears. Their tails, paws and ears are all covered with fur. They are excellent swimmers and often the first sign of their presence is a 'plop' sound as they dive into the water. They leave a distinctive 'v' shaped wake in the water when swimming.



Where? Water rats can be found throughout England, Wales and Scotland. They live in grassy banks along slow moving rivers and ponds, where they dig burrows. They are *herbivores*, feeding mainly on grasses, sedges, tree roots, fruit and bark. Although widespread, water voles are thought to be the fastest disappearing mammal in Britain. It is estimated that in 1960 there were 8 million in Britain. Now it is thought there may be fewer than 220,000. This is a 98% drop in numbers in just 50 years.

Why? The introduction of the American mink (a predator) and the loss of suitable river bank habitats due to changes in farming practices, as well as *pollution* of our water ways are the main causes of its decline.

Help? The control of the American mink is required as well as more sensitive river bank habitat management. There are many active conservation projects going on around the country to try to protect them.

Greater horseshoe bat (*Rhinolophus ferrumequinum*) (G)

What? One of about 16 species in the UK (all of which are endangered). A bat is the only mammal that can truly fly. They feed on flying insects caught on the wing at dawn and dusk. Bats find their way around in the dark using *echolocation*. The bat emits a high pitched sound and can detect echoes bouncing off obstacles around it and off the moths that are their prey. The Greater horseshoe bat has a flap of skin as a nose, which looks like a horseshoe. The females give birth hanging upside down and catch the baby in their wings!

Where? These amazing bats are now confined to the southwest of England and south Wales. Only 1% of their original population survives, in woodland edges, pasture and parkland. In winter Greater Horseshoe bats roost in caves, tunnels and house lofts.

Why? Loss of woodlands and mixed pasture is the main problem, resulting in a lack of food and roosting sites. Poisonous roof timber treatments have also contributed to their decline. As the number of bats in a group roost falls, they cannot stay as warm (less body heat) so they often die of cold in the winter.

Help? All bats are also protected by law. More wildlife-friendly farming should benefit them too.

Your turn: See what you can find out about these other endangered British mammals: Bottlenose Dolphin, Harbour Porpoise, European Hare, Greater Mouse-eared Bat and Red Squirrel.



Hare

Birds

Song thrush (*Turdus philomelos*) (B)



What? The song thrush is a light brown garden bird with a spotty chest. Its song is very musical, with short phrases being repeated 2,3 or 4 times in one phrase.

Where? The song thrush is widespread across Britain, often seen on farmland and in gardens and parks, regularly visiting bird tables. They are *omnivores*, feeding on a variety of foodstuffs, from snails and worms to seeds and berries. They can often be seen smashing snails on a hard rock, or 'anvil' to break the shells.

Why? There has been a dramatic rapid drop in numbers in recent years, perhaps up to a 50% loss since the 1970s. Reasons for this are not certain, but it is probably to do with loss of suitable hedgerow habitats and the use of pesticides, which kill the *invertebrates* they feed on.

Capercaillie (*Tetrao urogallus*) (B)

What? A large, grouse-like bird about the size of a turkey. The male plumage is mainly black but glistens green in sunlight. The female is brown and very *camouflaged*. The Capercaillie is a very shy bird which is very difficult to spot, but the male can be heard giving his characteristic clicking song which ends with a noise like a cork popping from a bottle. They are known for their territorial and breeding displays and have been known to display to cars!

Where? Once extinct in Britain (in the late 18th century), today's small population has originated from birds *reintroduced* from Sweden in the 1830s. They are only found in the north of Scotland, in dense ancient pine forests.

Why? Habitat loss is their main threat. They don't like commercial forest plantations and prefer the scarce ancient mixed Caledonian Pine Forests which are in serious decline due to land clearance to make way for plantations and because of over-grazing by red deer, that eat young tree shoots.

Help? Protection of their habitat is crucial. Controlling red deer in capercaillie habitats will help the forest produce new young trees when the old ones die out, to maintain forest cover.



Corncrake (*Crex crex*) (G)

What? A summer visitor from Africa, the corncrake is known for its rasping call – which sounds like a comb being drawn rapidly across the edge of a matchbox twice, hence its Latin name. A small, secretive, skulking member of the rail family, it is heard far more often than it is seen.

Where? Once common across Britain in the 1900s, it now only breeds on the Hebridean islands off the far north west of Scotland, preferring traditional hayfields and iris beds and feeding on worms, insects and seeds.

Why? The increased mechanisation of grass cutting on farms, especially more often for the production of silage is probably their main problem. Nests are destroyed before breeding is finished and long grassy areas in which to hide are becoming scarce.

Your turn: See what you can find out about these other endangered British birds: Long-eared Owl, Great Bittern, Grey Partridge, Skylark.



Red-backed shrike (*Lanius collurio*) (B)



What? This is a striking summer visitor slightly larger than a robin. It has a hawk-like hooked beak, and the male has a grey head with a black eye-stripe, pink belly and rust-brown back.

Where? They breed in open areas where there are lots of thorn bushes as they like to spear their food of insects, small mammals and birds on the thorns. Found mainly in eastern coastal areas, they used to breed in England and Scotland but the few that now visit to breed are thought to breed only in Scotland. They have been in a steady decline for a long time.

Why? It is thought that climate change and the resultant increase in cooler, wetter summers is reducing the availability of their food.

Help? Slowing climate change seems to be the only way these birds may be saved here. This requires us all to do our bit to reduce our emissions of *greenhouse gases* and do our bit for the environment by 'Reducing, Re-using and Recycling'.

Fish

Allis shad (*Alosa alosa*)

What? The Allis Shad, also known as 'Ale Wife', May Fish' and 'King of the Herring' is rather like a Herring. They are believed to be the only fish that can detect *ultrasound*, the noises emitted by dolphins when hunting for prey. This helps them to avoid being eaten.

Where? Found only in clean rivers such as the Medway in Kent, the River Severn in Wales and the Solway Frith in the Scottish Borders, they also occur in the oceans around our shores coming into these freshwater rivers to *spawn* (lay their eggs) in May. Their numbers are in serious decline throughout their range.

Why? Water pollution, over fishing and dams are thought to be the main reasons for their decline. Dams on rivers block their way when trying to reach their spawning grounds.

Help? Cleaning up our rivers is the best way to help these fish. Encouraging farmers to reduce the amount of *pesticides* they use on their land prevents them from washing into the rivers when it rains.

Amphibians

Great Crested (or Warty) Newt (*Triturus cristatus*)

What? A large newt with a dark back and bright orange belly. The male has a long jagged crest down its back in the breeding season. They are able to produce a poisonous secretion from glands on their back to ward off predators.

Where? Found in lakes and ponds with plenty of weed and few, if any, fish. Once common across Britain, numbers are now declining rapidly and they are now scarce in the north and west of England and in Scotland. They are fully protected by the Wildlife and Countryside Act 1981.

Why? Pollution and the filling in of thousands of garden ponds are the most likely causes of their decline.

Help? Conserving ponds, reducing water pollution and legal protection should help protect this popular and striking creature.

Vendace (*Coregonus albula*) (B)

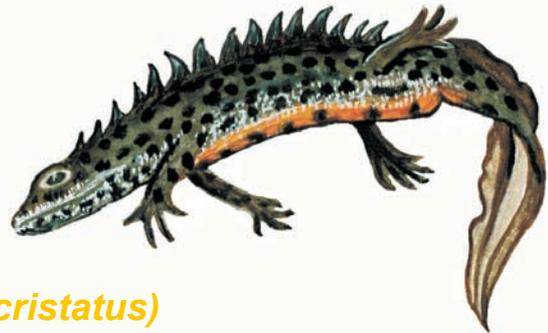
What? This is a medium-sized fish belonging to the 'white fish' category.

Where? A freshwater species, the Vendace has only ever been found in four lakes in Britain: in Cumbria and Southern Scotland. It is now thought to be extinct in Scotland only remains in two Cumbrian lakes – Bassenthwaite and Derwentwater.

Why? No-one really knows why they are declining but over-fishing may explain the loss of the Scottish ones.

Help? Protection of the remaining fish and their habitats in Cumbria are the only way to protect these fish and help their numbers to recover.

Your turn: See what you can find out about these other British endangered fish: Pollan, Thwaite Shad.



Natterjack toad (*Bufo calamita*) (B)

What? A greeny-brown toad with a distinctive yellow stripe running down its back. Largely nocturnal they tend to run in short bursts rather than crawl or hop. Their *spawn* has only a single row of eggs, unlike the Common Toad that has a double row.

Where? They burrow in sand dunes and heath land, laying their eggs in freshwater – often in temporary pools that dry up in summer. Numbers are now restricted to parts of the coasts of East Anglia, Lancashire,, Cumbria and south west Scotland.

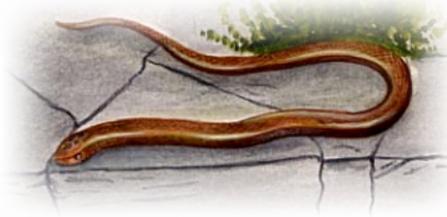
Why? Like the Sand Lizard, the Natterjack Toad is suffering from habitat loss.

Help? Protection of their habitats and re-introduction to previous areas from where they have disappeared are helping stabilise their population.

Reptiles (7)

Slow worm (*Anguis fragilis*)

What? Slow worms are not worms or snakes but are in fact legless lizards! They are smooth, shiny and a silvery copper colour. They have eyelids that can close (a snake can't blink) and are very vulnerable to having their tails broken off – they can grow new, shorter ones. They use this ability to escape predators. The scales along their body do not overlap like a snake.



Where? Normally found on the ground in woodlands and gardens, they like to hide under damp logs and stones. They feed on slugs and are therefore very popular with gardeners! They are widespread across Britain but declining in numbers and are now protected by law.

Why? We are not sure why they are becoming scarce but one reason could be that a lot are being eaten by pet cats. They are also regularly mistaken for snakes and therefore killed.

Help? Protection by law and educating people that they are harmless and actually beneficial in gardens should help them recover.

Invertebrates (71)

Insects

Shrill carder bee (*Bombus sylvarum*)

What? A small, fast-flying bumblebee, the Shrill Carder Bee has an orange tip to its abdomen.

Where? Like most bee species, the Shrill Carder Bee was once common across Britain until as recently as 100 years ago. This one is now only found in flower-rich grasslands in southern England and south Wales. It feeds on nectar and pollen from flowers such as Clover, Vetch and Bird's-foot Trefoil.

Why? More intensive farming methods have destroyed many of Britain's flower-rich meadows, therefore making it difficult for the bees to find food. Increased use of *herbicides* is one of the many practices that kills their food source.

Help? More wildlife-friendly farming is required to prevent this and many other bee species from becoming extinct.

Sand Lizard (*Lacerta agilis*) (G)

What? A large and beautifully marked lizard with bright green flanks and a brown striped or spotted back. They hibernate in winter and perform long and complicated mating display rituals in the spring.

Where? As the name suggests they live on sandy heaths or in sand dunes, but only in Dorset, Surrey and a small area in Merseyside. They eat invertebrates.

Why? Habitat loss - clearance for development purposes – is the most likely reason for their decline.

Help? The Sand Lizard is protected by law throughout Europe. This should give it some protection from further habitat loss.

Your turn: See what you can find out about these other endangered British reptiles: Grass Snake, Smooth Snake, European Adder and Common Lizard.



Common lizard

Stag beetle (*Lucanus cervus*) (B)

What? The largest British beetle with huge, antler-like jaws on the male (the Lesser Stag Beetle is smaller and far more common, and thus easily confused with this one). The jaws are mainly used for wrestling with each other, usually over females.



Where? The Stag Beetle is now only common in the New Forest in Hampshire, feeding on rotten wood on forest floors.

Why? Being killed by people in the past and a lack of rotting wood are the main reasons for their low numbers. People are too tidy and like to remove dead wood from their gardens and woodlands.

Help? Leaving rotting wood and tree stumps on the forest or garden floor is the best way to help these fantastic creatures.

Your turn: See what you can find out about these other endangered invertebrates:

Narrow-headed ant, Beaulieu dung beetle, Marsh Fritillary butterfly, Silver studded blue butterfly, Southern damselfly, Large marsh grasshopper.

Crustaceans

White-clawed crayfish (*Austropotamobius pallipes*)

What? A relative of the lobster, a White-clawed crayfish is green or brown (although goes bright red when boiled).

Where? Found in clean, well-aerated freshwater rivers and streams with sandy or stony bottoms in central and northern Britain. But their numbers are declining rapidly and they are now very scarce in these places.

Why? In the past they were caught as food by people and are still preyed on a lot by otters. The recent introduction of several North American species of Crayfish has caused the spread of a virus which is killing our native species.

Help? Control of introduced species is the only way to protect our only native crayfish from extinction.

Your turn: See what you can find out about these other endangered British invertebrates: Rams-horn snail, Freshwater pearl mussel, Starlet sea anemone.

PLANTS

It's not just our animals that are endangered; one in 5 of our plant species are threatened with extinction too. We mustn't forget that plants are just as important to our environment as they provide food and shelter for our animals. Without a rich diversity (mix) of plant species our ecosystems would collapse so it is vital that we protect our plants too.

Many of the reasons for the drop in numbers are the same as for animals. Again, there are too many to describe here, but here are some of the ones most at risk of being lost forever.



English Elm Tree (*Ulmus procera*) (B)



What? A tall stately deciduous tree, one of the largest and fastest growing in Europe. It produces sterile seeds so reproduces using suckers. Suckers are stems that form from buds at the base of the tree. They spread out across the ground growing away from the tree trunk. They can grow their own roots, so that eventually they are able to break off as separate trees.

Where? Once widespread and common throughout Britain, less than 20% of them remain.

Why? Dutch elm disease has all but wiped out the English Elm. It is a fungal disease that was accidentally introduced to this country and is spread by the Elm bark beetle.

Help? New, disease-resistant strains are being developed and introduced into the countryside.

Flowering Plants (21)

Isle of Man Cabbage (*Rhynchosinapis monensis*) (G)

What? Not a cabbage that you might find at the green grocers, but a member of the 'crucifer' plant family. Medium tall, with a hairless and an almost leafless stem and small yellow flowers.

Where? Found in only 22 places in western coastal Britain and round the Isle of Man. It prefers a sandy habitat.

Why? Sandy habitats are regularly cleared to make way for developments such as roads and houses. However, no-one really knows why there has been such a dramatic decline in the Isle of Man.

Help? Growing plants in greenhouses where they are protected and nurtured before re-introducing them to the wild will hopefully prevent this species becoming totally extinct.

Fen Orchid (*Liparis loeselii*)

What? A small orchid with yellow-green flowers and glossy yellow-green leaves.

Where? As its name suggests, the Fen Orchid grows in bogs, wet fen areas and damp dune slacks – but only in East Anglia.

Why? Destruction of wetland habitats for agriculture or development is mainly to blame for its decline.

Your turn: See what you can find out about these other endangered British flowering plants: Lady's Slipper Orchid, Bluebells.

Ferns (2)

Killarney fern (*Trichomanes speciosum*) (G)

What? This is an unusual fern (non-flowering plant) with see-through leaves.

Where? Found only on Skye, in Scotland, and in 15 other frost-free, sheltered humid locations (such as ravines) in Britain. It has disappeared from many other locations in Scotland and throughout Britain. It is one of Europe's most threatened plants.

Why? It was regularly collected by Victorians to put in their gardens and it has never recovered.

Help? The propagation and reintroduction of greenhouse specimens and protection of existing wild individual plants is essential if this plant is to be saved.

Fungi (4)

Although not the prettiest or most popular of living things, fungi are fascinating and play a crucial role in any ecosystem. They are nature's waste recyclers, helping rot down dead material so the nutrients go back into the soil for plants to use again. Our environment would be in a poor state if we lost our fungi. Here's one of our rarest species:

Devil's bolete (*Boletus satanus*)

What? A poisonous mushroom with a white-grey cap, red stem and orange spores on the underside. It causes vomiting if eaten raw. The cap can grow as big as 30cm across. It gives off an unpleasant smell and turns blue when damaged.

Where? It grows singly in chalky beech woods from July to October but is only found occasionally and only in the south of England.

Why? Lack of suitable habitat and disturbance makes this mushroom rare.

Help? Protection of areas where it grows is the main way to preserve the Devil's Bolete.

Star Fruit (*Damasonium alisma*) (B)

What? This is a short Water-Plantain with small white flowers and heart-shaped leaves. It gets its name from the seed heads which spread out like a 6 pointed star.

Where? It used to be found submerged or floating in freshwater ponds and ditches in only a few places in south east England and France. But in 2006 no plants were found in the wild in Britain.

Why? The drainage of ponds and ditches is most likely to blame for its disappearance in England.

Help? There are plants being propagated in greenhouses which will hopefully be reintroduced to suitable habitats and prevent total extinction in Britain.

Newman's lady fern (*Athyrium flexile*) (G)

What? An upland fern which is *endemic* to Scotland (found nowhere else).

Where? This is a hardy fern that likes growing in snow and high altitudes. It is found high up in the mountains of the Cairngorms in only four sites.

Why? The fact that it is found in so few places makes it very vulnerable to being destroyed. The numbers haven't actually declined; it is just that there are so few of them in the first place that they need to be looked after. Global warming will threaten them if our winters get progressively warmer and there isn't enough regular snow to suit them and protect them from frosts.

Help? Slowing global warming and protection of the sites and the plants is the only way to preserve this species.



It's not all bad news: Protection of our Wildlife

It's not all doom and gloom. The Government have drawn up a Biodiversity Action Plan (BAP) which is a list of all Britain's endangered species and the action plans needed to save them. The table below, drawn up by Natural England, summarises the situation.



Red Kite

	Number of Species in existence in Britain	Number on the BAP list	Number already extinct
Mammals (whales and dolphins)	11	11	2
Reptiles	7	7	0
Amphibians	7	4	2
Freshwater fish	35	13	2
Mammals (terrestrial and seals)	43	15	6
Bumble Bees	20	5	4
Butterflies	75	23	18
Breeding Birds	175	40	10
Plants (vascular)	1297	121	20

Information like this, although depressing, helps us to understand the severity of the situation. It gives scientists a framework from which to work out what action is necessary and it is a record which helps them to see when rescue measures are working.

We can all do our bit for our wildlife. Just by reading this you will hopefully be more aware that much of our wildlife needs protecting and inspired to help however you can.

Go out and share your knowledge and encourage your friends and family to care more for their environment, whether it is by supporting the wildlife groups that are working hard to protect our species, reducing your carbon footprint to help to slow down climate change, pestering your local MP to do more for endangered species in your area, or by just taking care when out and about in the countryside.

Some species, such as the Red Kite, Osprey, Bittern, Corncrake, Large Blue Butterfly and Lady's Slipper Orchid, are success stories where protection or reintroduction has worked and the numbers are now increasing. This doesn't necessarily mean they are no longer a threatened species, but it shows that it can be done!



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Suite 29,
Yeovil Innovation Centre,
Yeovil, BA22 8RN

Tel: 01935 385962
E-mail:
info@ypte.org.uk
Web site:
www.ypte.org.uk

Director: Peter Littlewood
Author: Morna Sims
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