

Reptiles in your garden: your questions answered



Reptiles in your garden

Reptiles in England

England is home to three species of snake (grass snake, adder and smooth snake) and three species of lizard (common lizard, slow-worm and sand lizard). They are fascinating animals, but are often overlooked or misunderstood. Snakes, in particular, have suffered from a poor public image.

In many cases, reptiles will go entirely unnoticed in a garden, but sometimes their discovery will provoke fear. This booklet should ease any worries you may have and provide answers to many common questions.

Grass snakes are adept swimmers, and hunt in garden ponds for amphibians. Paul Sterry/Nature Photographers Ltd



Legal protection

Reptiles are an important part of ou wildlife heritage and play a key role in natural ecosystems. Unfortunately all English reptiles have declined in numbers over the last few decades, mainly because their habitats have been lost, fragmented or poorly managed.

Because of their rarity, all British reptiles are protected against killing, injury and sale. The smooth snake and sand lizard receive additional protection that prohibits their disturbance or capture and damage caused to their habitat. There is a fine of up to £5,000 and/or up to six months imprisonment for any of these offences.

Which reptiles live in my garden?

Which snake?

Try to take note of the snake's markings and colouration. The chart on pages 12-13 and accompanying pictures should help you to identify it. There's a good chance that your 'snake' will in fact be a slow-worm (a legless lizard). These are often mistaken for snakes, and are regularly found in gardens. Of the 'true' snakes, the grass snake is by far the most commonly

encountered snake species. Adders rarely turn up in gardens, but if you live close to particular habitats in certain parts of the country you may come across them (see chart). In addition to our native English reptiles, escaped or abandoned pet snakes are sometimes found in gardens – most commonly in urban or suburban areas. These species have a wide range of colours and sizes.

Which lizard?

There are three native English lizards: slow-worms, common lizards and sand lizards. Slow-worms (legless lizards that are often mistaken for snakes) are the most common lizards in English gardens. The common lizard (despite its name) is more restricted in habitat, and only tends to turn up in gardens if you live close to particular habitats. Sand lizards are very rare in Britain, and it is extremely unlikely you will see one

unless you live in one of the few counties where it is found. Many animals reported as lizards in gardens actually turn out to be newts, which is not surprising as they look similar. Newts are often found when turning over stones, debris and pieces of wood in the garden. The photos on page 21 illustrate the differences between a newt and a lizard. If you find a lizard that doesn't match any of the descriptions here, it may be an escaped pet, but this is unlikely.

If you see a snake in your garden...

- Keep calm.
- Take a good look, but don't touch, catch or trap it.
- Remember that it is illegal to kill or injure native snakes.
- Use the chart and photos in this booklet to identify it (see pages 4 to 7 and 12-13).
- Grass snakes and slow-worms are harmless and are frequent garden visitors. Adders, which are venomous, are rarely found in gardens.

Identification photos – not to scale. See the chart on pages 12-13 for actual sizes.

Common lizard Lacerta vivipara

Right: Female with newborn young. Some common lizards, as here, have obvious stripes. The young are always dark brown, with few obvious markings. Laurie Campbell/NHPA

Below: Basking adult male. This species is able to flatten its body to better absorb the sun's



Sand lizard Lacerta agilis







Slow-worm Anguis fragilis

Left: Adult females have dark brown sides, and often a thin stripe along the top of the body ending in a blotch on the head. Examined closely, the stripe can sometimes appear as a very fine zigzag (but do not confuse this with the thicker markings on the adder).

A. R. Hamblin/FLPA



Left: Young slow-worms are golden, silver or copper on top. They have black sides and a black stripe down the back, ending in a blotch on the head. Females retain this basic pattern, while males lose it with age. Laurie Campbell/NHPA

Below: Adult males have few obvious markings, often being plain grey or brown Note the shiny, cylindrical appearance. Slow-worms may have blunt tails.

Mike Lane/NHPA





Smooth snake Coronella austriaca

Above: The smooth snake is normally grey or brown with darker paired markings down the back. It is rarely found in gardens.

R. Wilmshurst/FLPA



Right: Escaped or abandoned pet snakes, such as this corn snake from North America, show a wide range of colours and sizes.

Leonard Lee Rue/FLPA



Grass snake *Natrix natrix*



Left: Grass snakes almost always have an obvious yellow, orange or white marking, bordered by a black marking on the neck. These marks can be crescents, V-marks or can appear as a single band or 'collar'. Females lay 10 to 40 leathery eggs in late June to July. A. R. Hamblin/FLPA



Left: Occasionally, grass snakes are very dark all over and the light neck marks are reduced or missing. However, the black marks on the neck and sides are still present. Mike Lane/NHPA

Grass snake Natrix natrix. cont.



Left: Juvenile grass snakes often have very obvious light neck markings. They are around 15 cm (6 in) and are very thin at hatching (late August to September). Jim Foster/Natural England



Adder Vipera berus

Below: Adult females (left) have a light brown background with darker brown markings. Males (right) are grey or whitish with black markings. Joe Blossom/NHPA



Fear of snakes

Finding a snake in your garden can be a shock, but after the initial surprise many people grow to appreciate these fascinating creatures. On the other hand, some people have a genuine snake phobia that is hard to shake off. The fear provoked by snakes is disproportionate to the threat they pose – which is normally none at all, as grass snakes (the commonest species) are harmless to people. However, the stress some people experience when dealing with snakes is very real. Such people may require assistance when dealing with snake encounters; behavioral therapy or hypnotherapy may help in the long term.

How harmful are adders?

The adder is the only venomous snake in Britain, a fact which has earned it a dubious public image. Bites from adders are very rare, and most occur when a snake is picked up. Most reactions to adder bites are mild, but any bite should be regarded as potentially serious and immediate medical advice should be sought. In the last century just 12 human deaths in Britain have been attributed to adder bites. This compares with several deaths every year due to insect stings.

occasionally, people working in their garden report being bitten by an adder, but say they did not see the

snake responsible. These cases are more likely to be due to spider bites (there are several British species capable of delivering a surprisingly painful bite) or pricking by thorns. Cats and dogs are occasionally bitten by adders, but these bites rarely prove fatal and probably occur more often in the countryside than in gardens. Vets and doctors in areas where adders occur are usually experienced in handling bite cases, and there are very effective treatments

Some female and juvenile adders are reddish-brown, as below. Occasionally adders are all black (melanistic) with just a faint trace of zigzag markings. Robin Chittenden/FLPA



Learning to live with reptiles

Why do snakes live in my garden?

Unless you have a very large garden containing plenty of wildlife areas, it is unlikely that snakes live there permanently. It's more likely that the snakes in your garden are just visitors. The more reptile habitats there are near to your house, the more likely it is that you will have a reptilian visitor.

Living near the following types of area increases the likelihood of finding reptiles in your garden:

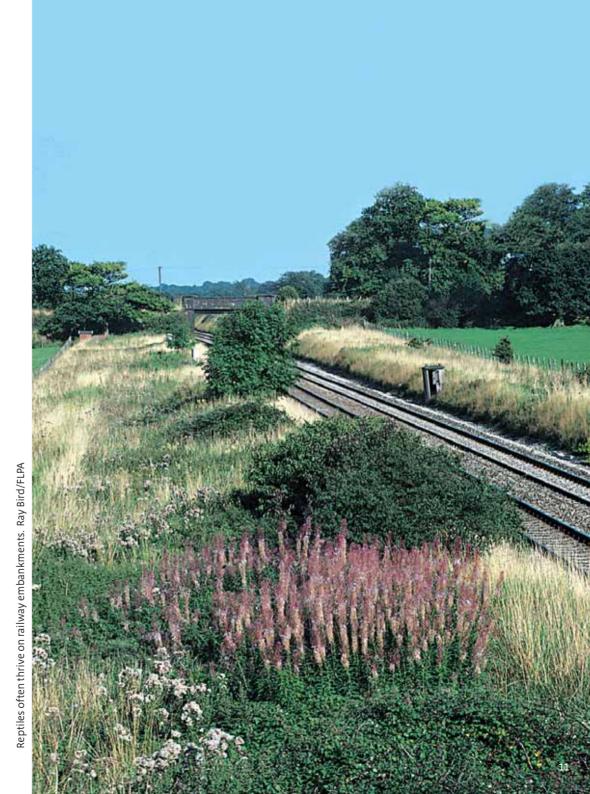
- nature reserves containing important habitats such as heathland and rough grassland
- derelict urban areas, such as abandoned factory sites
- disused quarries
- allotments
- unshaded road and rail banks with grass/scrub cover
- ponds, rivers and other wetlands*
- muck heaps on farms and stables.*

The following features in your garden may attract reptiles:

- ponds*
- compost or grass cuttings heap*
- wildlife areas with long grass and shrubs
- rockeries
- wood, rock and rubble piles.

Living near a good reptile habitat means that snakes or lizards may become regular visitors to your garden. At first, this can cause concern to some, but a few facts can help reassure you:

- Reptiles are timid. When they detect people or pets they normally flee and seek cover.
- Grass snakes and slow-worms (the most common reptile species in gardens) are harmless to people and pets.
- Reptiles hibernate from around October to March, and most garden visits are reported in June to September. You are only likely to see them during a short period of the year.
- You are most likely to see reptiles on warm, sunny days. On these days they will be more active, and quicker to flee.
- When working in the garden, be prepared to find reptiles if you lift up debris or are working near features such as hedges, ponds, compost heaps and areas of long grass.
- If you see a reptile in your garden, report it to a reptile conservation group (see Contacts, page 22).
 They may be interested to hear about your discovery (especially if it is an unusual species) and can offer you further advice.
- It is best not to handle snakes and lizards, as it can harm them.



^{*} Applies mainly to grass snakes

Garden reptile identification chart – use alongside the photos on pages 4 to 8

	Colours, markings, key identification features	Typical adult length	Distribution	Preferred habitats (excluding gardens)	Occurrence in gardens
Common lizard	Light and dark spots, flecks and stripes on brown/grey background. Very variable. Young may be all brown or black. Often basks on rocks, wood piles, etc.	14 cm (5½in)	Widespread across England but normally occurs in small areas where preferred habitats occur. Absent from area of intensive agriculture.	Heathland, bogs, moorland, woodland edge, rough grassland; often found in derelict urban areas and on railway banks.	Rare, except where good habitats are near the garden.
Slow-worm	Brown, copper, golden or grey; may have black/dark brown sides and thin stripe on back. Small head, often with dark spot. Very shiny. Tail often blunt. Normally discovered underneath objects lying on ground.	35 cm (14 in) (NB. many slow-worms lose their tails, so can be shorter.)	Widespread across England. Common in some localities, but absent from areas of intensive agriculture.	Heathland, bogs, moorland, woodland edge, rough grassland; often found in derelict urban areas and on railway banks.	Frequent if slow-worms present in general area, and garden has long grass and refuges such as wood piles. May be found in city gardens.
Sand lizard	Light and dark spots/blotches on brown or green background. Two light bands on either side of back. Normally seen basking.	18 cm (7 in)	Highly restricted. Mostly in Dorset, a few populations in Merseyside (Sefton Coast), Hampshire, Surrey, West Sussex, Berkshire, Devon, Cornwall.	Predominantly dry heathland (south) or sand dunes (Merseyside). May also occur on adjacent grassland, derelict urban areas, railway banks.	Very rare – only likely near heathland in Dorset or sandy areas on Sefton Coast.
Grass snake	Background: olive-green, brown or grey. Neck: yellow or white mark, next to black mark. Black bars down sides, some black spots on top. Markings are occasionally faint. Normally seen in or near ponds, or basking in sunny spot. Very fast moving.	75 cm (2½ft)	Widespread across central and southern England, but much rarer north of the Midlands.	Normally associated with ponds, lakes, streams, rivers, canals, marshes. Travel widely in surrounding habitats: woodland, grassland, low intensity farmland, heathland, derelict urban areas.	Frequent, especially close to ponds, farms or stables with muck heaps. Can travel long distances. Compost heaps and ponds may attract grass snakes.
Adder	Background: grey or brown; may be reddish. Dark brown, reddish or black zigzag from head to tail. Spots on sides. Entirely black adders sometimes occur. Normally seen basking in sunny spots.	55 cm (2 ft)	Found in most counties of England, but restricted to distinct patches of suitable habitat (sometimes very small areas). Largely absent or rare in the north-west and the Midlands.	Heathland, bogs, moorland, woodland edge, rough grassland; sometimes on derelict urban areas and railway banks. Prefer sandy or chalky soils; rare on clay soils.	Rare, except when near to favoured habitats – more likely in sand or chalk areas in Dorset, Cornwall, Hampshire, Surrey and Sussex.
Smooth snake	Background: grey or brown. Dark blotches on back, normally in pairs. Dark blotch on head. Secretive, normally found underneath objects.	55 cm (2 ft)	Highly restricted. Mostly in Dorset, some populations in Hampshire and Surrey.	Predominantly heathland (as above). May also occur on adjacent grassland, derelict urban areas, railway banks.	Very rare – only close to heathland sites in Dorset, Hampshire and Surrey.
Escaped pet (various species)	Various.	Various.	Can be anywhere close to population centres.	Normally in urban or suburban areas.	Snakes: occasional. Lizards: rare.

What if I don't want snakes in my garden?

Step 1. Try to identify the species you have seen.

Many people who find a snake in their garden think they have seen an adder, but over 95 per cent of adder reports from gardens turn out to be grass snakes or slow-worms. This is not surprising because we often get only fleeting glimpses of snakes. Adders are only likely to occur in your garden if you live close to their preferred habitats (see the chart on pages 12-13). In most of England, it is very unusual to find adders in gardens. If the snake you've seen is an escaped pet, it should be removed for re-homing.

Call the RSPCA on 0870 33 35 999.

Reptiles are attracted to gardens with sunny areas, plenty of vegetation cover, and places to take shelter. Paul Sterry/Nature Photographers Ltd

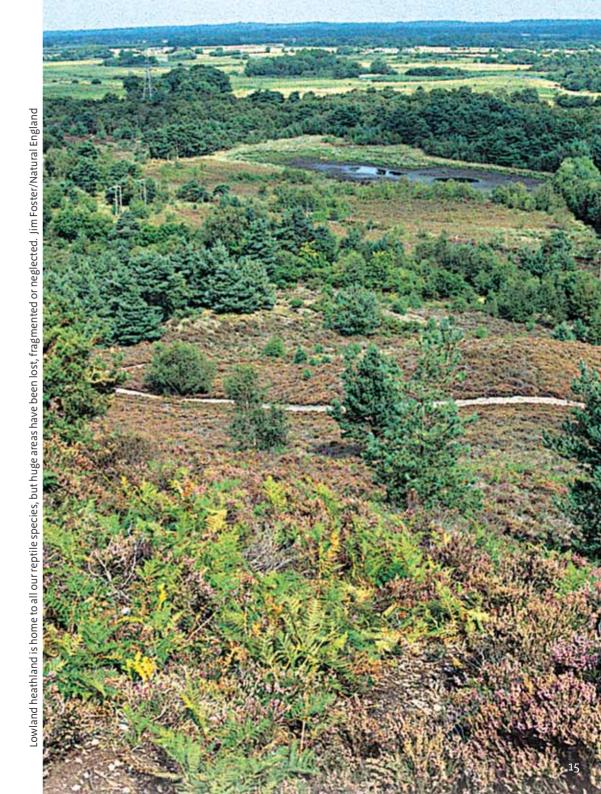


Step 2. Think about why the snake was in your garden:

a) If your garden backs on to a nature reserve, railway embankment, or other good snake habitat, there's little point in trying to remove snakes or prevent them from entering your garden. In these cases, snakes are likely to be regular garden visitors and it's better to learn to live with them (see page 10). However, if you have a serious snakes phobia, or are concerned about adders, you could try to snake-proof your garden (see page 16).

b) If you live in an area where there are many good reptile habitat nearby (areas of heathland, for example) then snakes may occasionally visit your garden. In these cases, it's likely that the snake is just passing through and will quickly move on of its own accord.

c) In some cases, you might live in an area surrounded by good snake habitat, but your home is separated from this by areas of poor habitat (such as roads and built-up areas etc). If this is the case, a visiting snake may become disoriented and be unable to get back to its normal habitat. If this happens, it may be best to find someone to remove the snake. A reptile conservation group or the RSPCA should be able to advise you (see contacts page 22).





Rockeries, log piles, and debris are attractive to reptiles. Jurgen & Christine Sohns/FLPA

Can I 'snake-proof' my garden?

The following will make a garden much less attractive to reptiles:

- Mow your grass regularly to keep it short.
- Remove shrubs and other lowgrowing plants that provide cover at ground level.
- Remove features that provide reptiles with hiding places, such as rockeries, debris, woodpiles, and boards. If you need a wood pile, raise it above the ground by 30 cm (1 ft), by placing it on a rack.
- Remove compost heaps and piles of grass cuttings, or put them in sealed bins.

- Putting a wall or close-fitting fence around a pond can help to reduce snake access, but this will cause problems for other wildlife. Filling in your pond is a drastic solution that is only likely to dissuade grass snakes.
- Fill in any holes or crevices where reptiles can hide, for example under the shed, patios or walls.
 Fill in holes only when they are unoccupied.

You may also need to ask neighbours to take similar action. Experience shows that the above steps can result in a major reduction in snake visits. However, it is very difficult to entirely prevent snakes or lizards entering your garden. A more thorough solution is to erect a special fence around your garden. It should be at least 60 cm (2 ft) high, dug into the ground, and carefully sealed to leave no gaps. You can do this by attaching hard-wearing, UV-resistant plastic sheeting (from a builders' merchant) to an existing fence. Alternatively, a free-standing fence can be constructed by using stakes to support the sheeting. A low brick wall can also be effective.

Important note: the steps described above will severely reduce the overall value of your garden for other wildlife. Deciding on a sensible balance is up to you.

How can I go about removing a snake from my garden?

This is not normally recommended, but it can be advisable to remove disorientated, injured or trapped snakes, or where there is a genuine danger of an adder bite.

The Contacts section on page 22 lists organisations that may be able to recommend local reptile experts. You should not handle snakes and lizards yourself as you may harm them.

The RSPCA (tel: 0870 33 35 999) may be able to help with trapped or injured snakes. Native snakes should be removed to the nearest suitable habitate.

How can I stop snakes harming other wildlife?

Snakes are an important part of the food web, and they will sometimes enter gardens to find prey. Snakes take very few prey items and will not endanger prey populations in doing so

Grass snakes often feed on frogs, so discouraging amphibians may make your garden less atractive to snakes. However, think carefully before acting, as frogs and snakes both need our help. I'm Foster/Natural England



For example, it would be unusual for a grass snake to eat more than ten adult amphibians in a year. If you notice that the number of frogs in your garder is declining, it's likely to be part of a natural fluctuation, the result of disease, habitat changes or even predation by other creatures, such as fish.

How can I stop grass snakes eating my goldfish?

Grass snakes sometimes enter gardens to catch amphibians, and only occasionally eat goldfish. When they do it's only in very small numbers. If you've noticed a sudden, substantial loss of fish in your pond, it's much more likely to be the work of herons or cats. To reduce snake predation, follow the guidance on snake-proofing your garden (see page 16).

Encouraging reptiles in your garden

With a little planning, gardens can be made into valuable reptile refuges that help compensate for habitats lost in the countryside.

How can I attract reptiles to my garden?

Leave areas of your garden to grow wild, but also retain some shorter areas of vegetation that will allow reptiles to bask in the sun. Construct og piles in sunny spots, and reduce



Derelict urban areas often become excellent reptile habitats. Unfortunately, many of these 'brownfield' sites are now targeted for development. Jim Foster/Natural England

the height of shading trees, hedges or fences. Ensure there is free entry at ground level around the edge of the garden, for example, by creating gaps under fencing.

Create rockeries, or banks with plenty of crevices in south-facing areas close to clumps of dense vegetation. Maintain a heap of grass cuttings or a compost heap. Dig a pond to encourage amphibians – an important prey for grass snakes – and leave some overgrown areas near the pond that will allow snakes to approach in safety. Leaving out wooden boards, roofing felt or corrugated iron sheets will help you find out if reptiles are using the garden; reptiles will either bask on top of them or use them as shelter.

Will grass snakes breed in my garden?

Grass snakes lay their eggs in warm, moist areas to help incubation. Studies show that they will readily use garden compost and heaps ofgrass cuttings.

Use these tips to encourage them

- Make the heap as big as possible.
- Put it in a sunny spot, but close to a hedge or ground cover.
- Replenish the heap with compost, kitchen waste, grass cuttings, manure, dead leaves or sawdust.
- Ensure there is easy access for the snakes – do not seal the heap completely.
- Do not turn the heap between mid-June and late September, as eggs may be inside.

How can I avoid injuring reptiles in my garden?

Cats often kill or injure wildlife, so it is best not to have one if you want to encourage reptiles. Bells on cat collars will not help much as lizards do not have good hearing and snakes cannot hear airborne sounds at all. Netting should not be placed over ponds or vegetable plots as snakes often die after getting caught in flexible, narrow

mesh netting. If you have to use netting, try to use rigid netting material with a mesh size of at least 4 cm (1½ in). Before mowing the lawn, walk the area to be cut so that reptiles are dispersed into sheltered areas. Keep a special look-out for snakes in areas of long grass. Cutting grass on cold days reduces the chances of killing reptiles.

Should I introduce reptiles to my garden?

If you create good garden habitats and reptiles occur in nearby wild habitats, they will probably colonise your garden naturally. Bringing reptiles into your garden is not advised as they may become disorientated, and the habitats in your garden may not be good enough to support them. Remember that it is against the law to disturb smooth snakes and sand lizards or their habitats and they should never be interfered with.

Reptiles need special places to hibernate, often in crevices on south facing slopes. Gardens rarely provide these conditions. Jim Foster/Natural England

Reptile biology

How long do reptiles live?

Many reptiles die within the first year of life, through predation or during hibernation. If they survive to reach sexual maturity (generally after three to five years) a good proportion may live to around ten years. A smaller number will exceed this. The individuals of some species, such as adders and smooth snakes, can live up to 18 years.

Are reptiles cold-blooded?

It is more correct to say they have variable body temperatures. Snakes and lizards cannot generate their own body heat internally, and so depend on external sources. This means basking in the sun, or being in contact with warm surfaces or warm air. The cooler they are, the less active they become.

Reptiles select the right place to warm up or cool down – a process called thermoregulation. A hibernating lizard would have a very low temperature in winter, but one basking on a sunny August day would be warm.



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Reptiles generally emerge from hibernation in March, and are active until October; some may be active earlier – or later – if weather permits. Snakes can travel long distances, and grass snakes have been tracked on journeys of over 4 km (2½ miles). Lizards seem to move much less, often occupying very restricted areas.

How do reptiles reproduce?

Only sand lizards and grass snakes lay eggs. They do so in June and late-June to July respectively. The other reptile species give birth to live young; in some cases inside a transparent membrane. Mating occurs from April to June. and

birth or hatching from July to September. The exact timing of reproduction varies between species and depends a great deal on weather conditions.

How many young do they have?

Typical numbers per female are:
Common lizard 4–10.
Slow-worm 6–12.
Sand lizard 6–14 (eggs).
Grass snake 10–40 (eggs).
Adder 6–20.
Smooth snake 4–15.

Which predators feed on reptiles?

Natural predators include other reptiles crows, magpies, buzzards, kestrels, foxes, badgers and hedgehogs.
Cats will also prey on reptiles, and pheasants eat young snakes.

What do reptiles eat?

Lizards feed on a range of invertebrates, including insects, spiders and molluscs. Grass snakes feed largely on amphibians, while adders and smooth snakes prefer lizards and small mammals. Fish and young birds are sometimes taken by snakes.

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Newts like the smooth newt (right) have velvety skin, four toes on front feet, and a vertically flattened tail.

Jim Foster/Natural England

Contacts

Natural England

1 East Parade Sheffield, S1 2ET Enquiry Service: 0845 600 3078 enquiries@naturalengland.org.uk www.naturalengland.org.uk

The Herpetological Conservation Trust

655a Christchurch Road, Boscombe Bournemouth Dorset, BH1 4AP Tel: 01202 391319 www.herpconstrust.org.uk.

The British Herpetological Society

11 Stathmore Place Montrose Angus, DD10 8LQ www.thebhs.org

Amphibian and Reptile Groups of the UK (ARG-UK)

www.arg-uk.org.uk (A network of wildlife volunteer groups which aim to protect and conserve the native amphibians and reptiles found in the UK.)

Froglife

9 Swan Court Cygnet Park Hampton Peterborough, PE7 8GX Tel: 01733 558960 www.froglife.org.

Further information

This is one of a range of wildlife gardening booklets published by Natural England. For more details, contact the Natural England Enquiry Service on 0845 600 3078 or e-mail enquiries@naturalengland.org.uk

Natural England also produces Gardening with wildlife in mind, an illustrated wildlife reference.

Originally on CD but now also available online, *Gardening with wildlife in mind* has detailed information on 800 plants and animal species often found in our gardens, and shows how they are ecologically linked.

See www.plantpress.com

Other titles

T. Beebee and R. Griffiths. Amphibians and reptiles: A natural history of the British herpetofauna. HarperCollins (The New Naturalist series). 2000.

P. Roberts, Froglife & D. Ovenden. Guide to the reptiles and amphibians of Britain and Ireland. The Field Studies Council. 1999.

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This pregnant female common lizard has lost her tail, but it will regrow. Jim Foster/Natural England

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Natural England works for people, places and nature to conserve and enhance biodiversity, landscapes and wildlife in rural, urban, coastal and marine areas. We conserve and enhance the natural environment for its intrinsic value, the wellbeing and enjoyment of people, and the economic prosperity it brings.

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ISBN 978-1-84754-008-9

Catalogue code NE15

Written by Jim Foster. Designed by statusdesign.co.uk

Front cover image: The grass snake is the most commonly seen snake in English gardens. Iim Foster/Natural Englan

