Slow worms: Britain's most unusual lizards

By Lisa Hendry

They bite when they're aroused, poo when they're scared and can even shed their tail to escape death. Find out more about these fascinating creatures and how to increase your chances of seeing one.

What is a slow worm?

If you see a slow worm (*Anguis fragilis*) in your garden, you'd be forgiven for thinking it's a snake. But it's actually a legless lizard, the only such creature native to Britain.

Slow worms are probably the most frequently seen reptile in Britain. Dr Mark Wilkinson, a Museum researcher specialising in reptiles and amphibians, explains why:

'Although the common lizard (*Zootoca vivipara*) is probably more prevalent in Britain, slow worms are more likely to thrive in back gardens and allotments and so are more likely to be seen by more people.

'Slow worms can also be quite slow to make their escape when disturbed, whereas common lizards - although more visible if they are basking - will disappear pretty quickly if they notice someone getting too close.'

Slow worms (*Anguis fragilis*) are one of three lizard species native to the UK and the one you're most likely to encounter in a garden or allotment. Image courtesy of pxfuel.

How to tell it's a slow worm, not a snake

If you spot a slithering reptile in your garden, there are three main ways you can tell you're looking at a slow worm and not a snake:

1. The animal blinks. This is the quickest and easiest way. Snakes don't have eyelids.
2. It has a notched tongue. Snakes' tongues are more forked (the split at the end is much more pronounced).
3. It lacks a pronounced neck region, so its head doesn't seem distinct from its body.

Slow worms have a slightly notched tongue. They have to open their mouth slightly to stick it out, whereas snakes stick their tongue out through a small gap while their mouth remains closed. © Corneliu LEU/ Shutterstock.com

There are a few other clues too.

Slow worms tend to be smaller than the UK's native snakes. Adults are up to 50 centimetres long. In comparison, the smooth snake - our smallest snake - can reach 70 centimetres. But this species is very rare. Grass snakes are the most likely to be found in the same habitats as slow worms and they are 90 to 150 centimetres long when fully grown. Adders are unlikely to be confused with slow worms due to their distinctive zig-zag markings.

Slow worm males are greyish brown and females are brown with dark sides. Smooth snakes (as shown here) are a similar general colour, but their individual scales look more obvious and their markings are different. They often have dark bars or rows of dots on their back and nearly always have a dark blotch on their head. © Bernard Dupont (**CC BY-SA 2.0**) via **Flickr**

Grass snakes have a white or cream and black collar at the base of their head. Like smooth snakes and slow worms, they're harmless to humans. © Thomas Wood (**CC BY 2.0**) via **Flickr**

Like snakes, slow worms have scales. But whereas slow worms feel smooth, many snakes have keels on their scales that make them rough to the touch. The smooth snake is an exception.

Snakes in Britain have overlapping scales. Slow worms don't. 'This is probably related to the slow worm's burrowing behaviour,' says Mark. 'It's hard to move backwards with overlapping scales.'

Both snakes and slow worms shed their skin as they grow. But unlike snakes, slow worms shed their skin in patches rather than all in one go. So if you spot smaller pieces of reptile skin, it probably belonged to a slow worm rather than a snake.

Slow worms feel very smooth and look shiny as their scales don't overlap and lack the raised ridge (keel) present in the centre of grass snake and adder scales © Pedro Luna/ Shutterstock.com

Why did slow worms lose their legs?

Slow worms are unique in the UK for being legless lizards, but leglessness is not actually that unusual a trait.

Mark explains, 'Quite a lot of lizard species around the world have no legs, including close relatives of our slow worm in the family Anguidae. A lot more have only tiny legs.

'It seems that evolution has led to the independent reduction and entire loss of limbs many times. This is associated with elongate bodies and burrowing or living in long grass.'

This is certainly true of slow worms, which spend much of their time burrowing into loose soil and decaying vegetation. Come October, they tunnel underground to hibernate and remain there until March.

Slow worms like to burrow down into the soil beneath rocks and logs. This young slow worm was exposed when the object covering it was lifted. © Ian Redding/ Shutterstock.com

Stinky defence tactics

Slow worms are on the menu for many animals, including adders, hedgehogs, badgers, magpies and lots of other birds. They often fall foul of pet cats too.

Research shows that slow worms use their tongues to sense the presence of ambush predators, flicking their tongues in and out to 'smell', like snakes. They are **able to tell the difference** between the scent of a predator snake and other harmless species.

Slow worms are able to detect the presence of predators such as smooth snakes with their tongues and act accordingly. Unfortunately for this slow worm it still wound up as dinner. © Rosemarie Kappler/ Shutterstock.com

To avoid meeting an untimely end, slow worms employ various defence mechanisms. Sometimes they freeze. Other times they will flee. Despite their name, slow worms can move quite quickly.

But if they can't get away, defecation is the first weapon in their arsenal. Their poo smells nasty enough to deter some predators.

The great escape

If pooing doesn't work, slow worms use another nifty trick to escape predators: they detach their tail. The discarded tail thrashes about for several minutes, distracting their attacker and giving the slow worm the chance to get away.

Slow worms are named after this ability - the 'fragilis' part of *Anguis fragilis* means 'fragile'. Some studies have found that 50-70% of wild slow worms have lost their tails.

Clip of a blackbird attacking a slow worm's rejected tail which is still thrashing around © Sussex Scrapbook

Mark says, 'The ability to lose a tail has undoubtedly saved lives countless times. All our lizard species have this ability, but our snakes can't do the same trick.'

So once the tail is gone, is that it? Will it be a stumpy slow worm forever?

'With time, tails can regrow,' says Mark. 'But a slow worm's regrown tail is usually much shorter than the original.'

It's also no longer detachable.

The ability to shed an appendage is called autotomy. But while it can have the immediate benefit of saving the animal's life, missing a limb has its disadvantages and having to regrow one can be costly.

Slow worms have a lot of predators, including badgers. Sometimes slow worms are able to put them off by pooing or distract them by detaching their tail. © BadgerHero (**CC BY-SA 3.0**) via **Wikimedia Commons**

What do slow worms eat?

Slow worms have a very different diet to snakes, making a meal of much smaller prey. Slow worms snack on a variety of invertebrates, including slugs, snails, spiders and earthworms.

Although they pick mainly slow-moving prey, their backward curving teeth are perfect for keeping hold of any wriggly or slippery critters.

Do slow worms bite?

'Slow worms seldom bite people,' says Mark. 'They can be handled gently without danger if you need to move one or want to reassure a child that there's nothing to be frightened of.'

While they don't tend to bite humans, slow worms do have another important use for their teeth.

Love bites

During mating rituals, an amorous male slow worm bites the back of his chosen female. Once he has gripped her, the pair entwine their bodies to facilitate copulation. Courtship can be a drawn-out process for slow worms - they writhe around like this for up to 10 hours.

Male slow worm biting a female as part of their mating ritual © Schnoeppl/ Shutterstock.com

The marathon mating sessions usually take place in May.

Female slow worms sometimes bear scars from previous erotic embraces.

Mark adds, 'This sort of embrace is not uncommon in lizards, including those with legs - common lizards do it too.'

Footage of slow worms mating one evening on someone's patio © Carol Murray

Baby slow worms

After a gestation period of a few months, the female gives birth to up to 12 baby slow worms, usually in August or September.

Most reptiles lay eggs, but slow worms are ovoviviparous, meaning the eggs hatch while they're still in the female's body. She later gives birth to the hatchlings, which are usually little more than four centimetres long.

They are born still wrapped in their embryonic membranes, which soon burst open.

Tiny baby slow worms alongside their mother. Young slow worms have gold or silver backs with a black stripe down the middle, a black dot on their head and glossy black sides. © shaftinaction/ Shutterstock.com

This method of reproduction is advantageous in a cooler climate as it allows the mother to better control the temperature of the embryos.

Mark says, 'Although more reptiles lay eggs than give birth, in the UK the only reptiles that lay eggs are grass snakes and sand lizards.'

The longest-lived lizards?

It's often claimed that the slow worm is 'possibly the longest-lived lizard' or 'one of the longest-lived lizards in the world'.

Their average lifespan in the wild is thought to be 20 to 30 years and one slow worm reportedly survived for at least 54 years in captivity at Copenhagen Zoo.

'Claims of very long-lived animals are often difficult to substantiate,' says Mark, 'but it does seem like the slow worm can live a long time compared to many other lizards.

'It is not clear what determines their lifespan - whether they grow old like we do or just keep going until either disease or predation leads to their death.'

If they manage to escape being eaten, slow worms can live for decades. They are quite well camouflaged and have various defence strategies. © Vaclav Sebek/ Shutterstock.com

They are not entirely unique in their longevity though, clarifies Mark.

He says, 'Some large-bodied lizards, including the largest, the Komodo dragon, are thought to be able to live for decades. The tuatara - a lizard-like reptile found only in New Zealand - can live for more than 100 years.'

Where to look for slow worms and when

Slow worms are quite widespread throughout mainland Britain and most common in Wales and southwest England. They aren't present in Ireland apart from in County Clare, where a non-native population was introduced in the 1970s.

Slow worms prefer habitats with plenty of dense plant ground cover. They're often found in woodland glades, pastures, heaths, scrubland, gardens, allotments, railway embankments and **road verges**.

Slow worms are drawn to places with lots of grass and plant ground cover, including in urban areas such as gardens, allotments and road verges © Becky Stares/ Shutterstock.com

You won't see any slow worms out and about in winter as they hibernate. Your chances are better from late spring through to early autumn.

Slow worms tend to be most active at dusk. This is when they usually hunt for food. During the daytime, rather than basking out in the open, they prefer to hide under something that will heat up in the Sun.

How to improve your chances of seeing a slow worm

To increase your chances of seeing a slow worm, Mark suggests setting aside an area of your garden, letting the grass grow long and providing shelters.

He says, 'Slow worms are not often seen out in the open. You're more likely to see slow worms in grass compost or under logs or other shelters when it's nice and warm. I've never seen one at night or when it's raining.

'They often hang out in the same places, so groups of slow worms can often be found together.'

Two slow worms basking on a compost heap in a Devon garden. The lizards are lured by the warmth and invertebrate food that compost heaps offer. © Peter Turner Photography/ Shutterstock.com

Anything which retains heat can attract slow worms. As well as compost heaps and log piles - which they love because they are also a great source of invertebrates - you could try piles of stones, pieces of old rubber-backed carpet or metal trays. You'll be helping slow worms by providing heat traps that are inaccessible to predators.

Mark says, 'When I was growing up we had some sheets of corrugated iron in a set-aside area of our garden and we could almost guarantee finding slow worms under these.'

It's fine to lift up objects to look for slow worms, but Mark cautions, 'If you do spot a slow worm hiding under a metal sheet, rock, tile or log, be sure to replace it carefully or you could easily squash them.

'You don't want to scare it into shedding its tail either, as that's stressful for the animal and means it won't be able to use that tactic to escape a predator in future. So avoid handling them unless necessary and remember not to pick them up by the tail.

'Also, bear in mind that if you check a particular place too often, they will probably find a less disturbed place in which to hide away.'

Slow worms will often hide under objects that will warm up in the Sun. This slow worm is just emerging from under some planks of wood. © davemhuntphotography/ Shutterstock.com

Beneficial garden residents

Mark says, 'There is a concern that slow worms are declining due to habitat change.

'People's gardens and allotments can be important refuges for these, and other, reptiles.

'They will return the favour. Slow worms eat lots of pests like slugs, so they are good to have around.'