Help! We have been invaded by pests

Dan Eatherley's latest book casts a light on the species that are posing a real risk to native plants and animals. Here we look at some of those resident in Wiltshire.

THROUGHOUT HISTORY, Britain has been colonised by a succession of animals, plants, fungi and other organisms, which apparently belong elsewhere. Many have been deliberately introduced by people for food or leisure, or out of simple curiosity, others have arrived accidentally as stowaways. Most species brought to Britain fail to establish, and of those that do succeed only a fraction will ever earn the title 'invasive species' by spreading uncontrollably and harming native fauna and flora.

Like the rest of the country, Wiltshire has its fair share of invasive plants and animals, and is doing what it can to manage them. One key initiative is the Source to Sea Project (https://www.wiltshirewildlife.org/hampshire-avon-source-to-sea), a partnership between the Environment Agency, Wiltshire Wildlife Trust, Hampshire and Isle of Wight Wildlife Trust and Dorset Wildlife Trust, targeting invasive species along the entire 50-mile length of the Hampshire Avon catchment, from headwaters in the Vale of Pewsey to Christchurch in Dorset.

Since 2012, volunteers have scored some successes, removing Himalayan balsam, Japanese knotweed and other intruders from a number of sites, but plenty of invaders still menace Wiltshire. Here are just a few.

Grey squirrel (Sciurus carolinensis)

When someone says, "invasive species", this is often the first one that comes to mind. This rodent has spent a century or more spreading inexorably north in a grey tide, accused of devastating forests and snuffing out its gentler, cuter, home-grown counterpart.

How times have changed. Back in the nineteenth century, grey squirrels were all the rage among the British upper class. Thomas Brocklehurst, a Cheshire-based banker and silk manufacturer, is often credited with the first confirmed introduction, installing a pair of grey squirrels at Henbury Park, his estate outside Macclesfield, in 1876. Other aristocrats were soon getting in on the act, with deliberate releases up and down the country.

Liberated from natural predators, such as raccoons, skunks and large forest hawks, there would be no stopping the species whose British population now stands at 2.5 million. Although foresters hate grey squirrels for their tendency to strip bark, the displacement of the cherished native red squirrel is the greatest charge levelled against them. The greys don't directly attack the reds, but seem to multiply faster than the native squirrel. They are also resistant carriers of a virus, squirrelpox, which kills reds in droves.

Harlequin ladybird (Harmonia axyridis)

Recently declared the UK's fastest invading species – ahead of grey squirrels – the harlequin ladybird is a ravenous predator blamed for declines in many of our native ladybird varieties. In 1916, this multi-coloured predatory beetle, indigenous to eastern Asia, was deliberately introduced by farmers in America and later to continental Europe to control aphids and other pests.

At first, the ladybirds seemed to behave themselves, each devouring hundreds of aphids per day while protecting crops. But then, during the late 1980s, a mutant strain emerged that went rogue, breeding out of control and forming vast swarms. Harlequins were never officially released as biological control agents in Britain, but that didn't prevent them flying or getting blown across the Channel from France in 2003.

With few natural enemies and chock-full of defensive chemicals, the harlequin ladybird has since swept across the country at an unprecedented rate: between 2004 and 2008, the species moved north and west at more than 100 kilometres per year, and today is the commonest ladybird in England and Wales. We often first notice harlequins in the autumn when they begin to congregate in sheltered locations, including inside our homes, forming aggregations many hundreds of insects strong.

Left: with no natural predators, grey squirrels have pushed native reds to the edge of extinction
Top: harlequin ladybirds have spread at such a rate that they are now the most common type

Giant hogweed (Heracleum mantegazzianum)

Its dimensions were largely what recommended the giant hogweed to the nineteenth century gardeners. With all the appearance of cow parsley on steroids, Europe's tallest herbaceous plant – introduced from the Caucasus mountains to Kew Gardens in 1817 – was extolled as 'magnificent' by horticulturalists. Others described its proportions as 'Herculean', and its 'splendid invasiveness' was recognised early on – as a 'good' thing.

Giant hogweed was even grown in Buckingham Palace Gardens. The plant quickly became a fixture in the British countryside, spreading its seeds – 20,000 per mature plant – along watercourses, as well as on the wind, to colonise the banks of many major rivers. Then, during the 1970s, children began showing up in hospital with blisters on their hands and around the mouth and eyes. These children had been fashioning telescopes and blowpipes from giant hogweed stems which, on investigation, were revealed to contain chemical irritants in the sap and bristles.

Known as furocoumarins, these light-sensitive compounds are a natural defence against herbivorous insects, but in contact with human skin they react under ultraviolet radiation to cause rashes. The giant hogweed's stock plummeted overnight as once admired curiosities were recast in the press as real-life 'triffids'.

Creeping water-primrose (Ludwigia peploides)

Also known as floating primrose willow, this ornamental, with its pretty yellow flowers was first recorded growing wild in Britain in 1999 at Barton-on-Sea in Hampshire, and has since been recorded in dozens of other wetland sites across southern England.

The species, native to the Americas, is among a number of banned aquatic non-native plant species – others include water fern, floating pennywort, parrot's feather and New Zealand pigmyweed – that spread rapidly to form dense floating mats. They smother the competition, mess up habitats and inconvenience recreational water-users, and when the plants die off, the rotting process further depletes oxygen from aquatic ecosystems, killing fish and other freshwater organisms.

Tackling plants like creeping water-primrose in an aqueous environment is far tougher than on land – spraying with herbicide risks harming native species and when they occur in deeper water, getting close can be dangerous and difficult. In France, Holland and Belgium the species, which spreads by asexual reproduction, is already a serious problem. Experts estimate that unless urgent action is taken, the bill for eradicating creeping water-primrose from the UK could eventually top £150 million a year.

Signal crayfish

Hailing from the west coast of North America, this crustacean gets its name from a whiteish patch atop the rear section of the hefty brick-red claws which were once (erroneously) thought to be brandished, flag-like, at other crayfish. Signals are now widespread across England and Wales since their introduction in 1976 by the Ministry of Agriculture, Fisheries and Food in a bid to diversify agriculture. Unfortunately, the signals pass on a fungal-like disease called 'crayfish plague' to indigenous white-clawed crayfish which die within weeks of being infected.

Meanwhile, the signal's burrowing activity undermines river banks, increasing the risk of flooding. The silt which is released into the water smothers invertebrates and clogs the spawning grounds of salmon and brown trout, whose eggs and fry the signal will also consume.

Eradicating signals from Britain's waterways has so far proved impossible: simple trapping tends to remove only the larger crayfish, while releasing pesticides risks harming other wildlife. In the meantime, signals, such as those fished from the River Kennet in Wiltshire, continue to feature on the menu of seafood restaurants who should perhaps know better. WL

• *Dan Eatherley is an environmental consultant and author of the forthcoming Invasive Aliens: Plants and Animals From Over There That Are Over Here (William Collins, RRP £16.99)*

Top left: giant hogweed can cause severe burns
Top right: creeping water-primrose can kill eco-systems and costs vast sums to control
Below: signal crayfish pass on a plague to native species and can cause damage to river banks