

Wildlife Crime in Scotland 2022

Annex 4 - Health of the species

This document presents a 'Health of Species' appraisal for priority species that fall within NatureScot's remit and for which statistics are included in the report Scottish Wildlife Crime Statistics 2022: badger, bats, freshwater pearl mussels, deer, salmon, brown hare and key raptors. This appraisal is intended to give an overview of current population trends, factors affecting the health of the species and the relative impact of wildlife crime on the conservation status and is in response to an Environment, Climate Change and Land Reform Committee request for this contextual information.

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Badger

Common name: Badger

Species name: *Meles meles*

Summary

Badgers are a member of the mustelid family and live in networks of underground tunnels called setts. Setts feature large entrances and mounds of excavated earth outside. Cubs are born in January or February but spend the first two or three months underground, emerging in the spring. Their ideal habitat is deciduous woodland with grazed pasture nearby, but they will use most open habitats.

Diet

They mainly feed on earthworms, but also eat small mammals, birds' eggs, fruit and roots and bulbs.

Appearance

Badgers are large and grey, with a short fluffy tail, black belly and paws and the distinctive black and white-striped face.

Size

Length: up to about 1m including tail, weight: 7-17kg

Lifespan

Average of 3 years (up to 14).

Status

Protected in the UK by the Protection of Badgers Act, 1992, and the Wildlife and Countryside Act, 1981.

Distribution

Found throughout most of mainland Scotland. Absent from most Scottish Islands.

Population

The available evidence indicates that the badger population is rising in England, although the trend in Scotland is less clear.

Monitoring

Scottish Badgers collates distribution data collected by volunteers. Disease monitoring in badgers is largely carried out via road casualties.

Threats

Construction of roads, housing and other developments may have a direct impact on badger habitat, this should be mitigated by planning control. A major cause of mortality in badgers is road accidents. Illegal persecution is also an issue in some areas.

Brown long eared bat

Common name: Brown long eared bat

Species name: *Plecotus auritus*

Summary

Long-eared bats roost in tree holes and loft voids in old buildings. Strongly associated with woodland. They feed in woodland, large gardens, and along hedgerows. They hibernate over winter, between November and April.

Diet

They feed on flying insects especially moths which they find in the dark using echolocation.

Appearance

The brown long-eared bat has greyish-brown fur and characteristically big ears. It shows a relatively slow, fluttery flight.

Size

Length: 9cm Weight: 5-11g

Wingspan: 25cm

Lifespan

Average of 4-5 years (up to 30).

Status

Protected in the UK under the Wildlife and Countryside Act, 1981 (England and Wales) and the Conservation (Natural Habitats etc) Regulations 1994 (as amended) in Scotland.

Distribution

Widespread throughout the country, but absent from most Scottish Islands.

Population

National data shows both the GB and Scottish brown long eared bat populations to be stable.

Monitoring

Monitored via the National Bat Monitoring Programme, using data from roost counts in Scotland.

Threats

On-going threats to Scottish bats include pressure from human disturbance to roosting sites and foraging grounds. Roosts may be lost during development through demolition or renovation of buildings without provisions to replace roosting sites.

Common Pipistrelle bat

Common name: Common Pipistrelle bat

Species name

Pipistrellus pipistrellus

Summary

Pipistrelles often roost in the roof spaces of houses and can often be seen in gardens at dusk. Pipistrelles hibernate over winter, usually between November and April, although they may come out to feed in periods of mild weather.

Diet

They feed on flying insects including midges and moths which they find in the dark using echolocation.

Appearance

Pipistrelles have dark, golden-brown fur, a slightly paler underside and a darker mask around the face. Their flight is rapid with lots of twists and turns.

Size

Length: 3-5cm Weight: 4-8g

Wingspan: 20cm

Lifespan

Average of 4-5 years (up to 16).

Status

Protected in the UK under the Wildlife and Countryside Act, 1981 (England and Wales) and the Conservation (Natural Habitats etc) Regulations 1994 (as amended) in Scotland.

Distribution

Widespread, found throughout the country, only absent from Shetland and some other Scottish islands.

Population

The population of common pipistrelle in Scotland is stable, whilst that of the soprano pipistrelle has increased since 1999. Both species collectively account for over 80% of Scotland's bats.

Monitoring

Monitored via the National Bat Monitoring Programme, using data from field surveys and roost counts.

Threats

On-going threats to Scottish bats include pressure from human disturbance to roosting sites and foraging grounds. Roosts may be lost during development through demolition or renovation of buildings without provisions to replace roosting sites.

Freshwater pearl mussel

Common name: Freshwater pearl mussel

Species name

Margaritifera margaritifera

Summary

Freshwater pearl mussels live in the bottom of fast-flowing streams and rivers where they may be completely or partially covered in sand or gravel. They spend their first year harmlessly attached to the gills of either salmon or trout before dropping off onto the riverbed. They need water of the highest quality to survive.

Diet

They feed by filtering food particles out of the river water, filtering up to 50 L a day.

Appearance

They are dark brown to black and much larger than their marine relatives.

Size

Shell length: 80–145 mm

Lifespan

Over 100 years

Status

Critically endangered in Europe (IUCN), Classified as a Priority Species in the UK Biodiversity Action Plan.

Distribution

There are freshwater pearl mussel populations in 115 watercourses in Scotland with the majority of these rivers located in the Highlands and the Western Isles.

Population

Declining in Scotland.

Monitoring

National survey published in 2009 and 2015. Our most critical freshwater pearl mussel populations are monitored every six years as part of NatureScot's Site Condition Monitoring programme.

Threats

Illegal pearl-fishing invariably kills mussels. Water pollution and damage to river beds and banks can seriously affect populations. Inappropriate catchment management and land use that affects the functioning of streams and rivers and so maintenance of suitable habitat. The effects of climate change are now taking their toll, for example low flows that leave freshwater pearl mussels stranded and high flows that wash them away.

Red Deer

Common name: Red deer

Species name: *Cervus elaphus*

Summary

Red deer have adapted to living on open hillsides and moorlands throughout much of Scotland. They can also be found in coniferous and deciduous forests. Although symbolic of wild and remote areas, red deer now also occupy areas closer to people, even entering some suburbs.

Diet

Red deer graze and browse a wide variety of plants including grasses, red deer heather, shrubs and trees.

Appearance

Red Deer are dark russet-brown in colour, with a paler buff rump patch and a pale tail. Males have large, branching antlers, increasing in size as they get older.

Size

Length: 1.7-2.6m Weight: 100-340kg

Height: 1.2m at the shoulder

Lifespan

16-18 years

Status

Common protected under the Deer (Scotland) Act 1996.

Distribution

Common throughout Scotland.

Population

Evidence suggests that population level is stable or increasing.

Monitoring

Actions to monitor the numbers and impacts of red deer in the uplands are included in the Deer Management Plans produced by Deer Management Groups.

Threats

Disease and poaching will have an impact on the health of deer, although there is no evidence to suggest that either are having an impact at the population level.

Roe Deer

Common name: Roe Deer

Species name

Capreolus capreolus

Summary

Roe deer are generally seen in loose family groups or as individual animals. They are generally found in woodlands, particularly around the edges where the woodland meets open ground, including farmland. They are increasingly found in and around our towns.

Diet

Their diet includes a variety of woodland plants including herbs, brambles, ivy, heather, bilberry & coniferous tree shoots.

Appearance

Roe deer are small with a summer coat of reddish brown turning to grey, pale brown or black in winter. They have a black nose, white chin and white rump patch with a short tush in females. Antlers are rough, short and have three tines on each.

Size

Length: 0.9-1.3m Weight: 10-25kg

Height: 60-75cm at the shoulder

Lifespan

Average 7 years (up to 16)

Status

Common protected under the Deer (Scotland) Act 1996.

Distribution

Common throughout Scotland

Population

Evidence suggests that population level is stable or increasing.

Monitoring

Actions to monitor the numbers and impacts of roe deer in the uplands are included in the Deer Management Plans produced by Deer Management Groups.

Threats

Disease and poaching will have an impact on the health of deer, although there is no evidence to suggest that either are having an impact at the population level.

Brown Hare

Common name: Brown Hare

Species name: *Lepus europaeus*

Summary

Hares shelter in a 'form', a shallow depression in the ground or grasses. They are most common in grassland and at woodland edges. Often associated with cultivated areas. In early spring, brown hares are at their most visible as the breeding season encourages fighting or 'boxing'.

Diet

They eat grasses and other herbaceous vegetation including various crops. Shrubs may be browsed in winter.

Appearance

Hares are russet-brown in colour, with a pale belly and a white tail. They are larger than rabbits and mountain hares, with longer legs and longer ears with black tips.

Size

Length: 50-70cm Weight: 3-4kg

Lifespan

Average 2-3 years (up to 12)

Status

Protected in the UK by the Wildlife and Countryside Act, 1981 with respect to the close season.

Distribution

Widespread throughout Scotland including some islands, largely replaced by mountain hares in upland areas

Population

Previously suffered significant declines, but the population now seems to be more stable, albeit at a lower level than formerly.

Monitoring

British Trust for Ornithology has collected data from 1995. The Game & Wildlife Conservation Trust long time-series game bag are also used for monitoring purposes.

Threats

Brown hares are a quarry species and driven shoots can reduce populations by 30 - 70%. Other illegal forms of hunting including hare coursing may add to this.

Atlantic Salmon

Common name: Atlantic Salmon

Species name: *Salmo Salar*

Summary

Atlantic salmon enter rivers throughout the year and travel upstream from November to February, to breed in gravel-bottomed headwaters. Most, but not all, fish die after spawning. In Scotland, juveniles will typically stay in freshwater for up to 2 years, then migrate to the sea as smolts – physiological changes allow them to survive in saltwater.

Diet

Atlantic salmon feed on invertebrates and small fish in the sea.

Appearance

Adult Atlantic salmon are generally larger than resident trout; they are silvery with a few dark spots on the back and may have a pinkish flush to the belly. Mature males may develop a hooked lower jaw, or kype, in the breeding.

Size

Length: up to 1.3m Weight: up to 35kg

Lifespan

Grilse may spend 1-3 years in freshwater and one year at sea. Larger multi-sea winter fish may spend 1-3 years in freshwater and 2-3 years at sea.

Status

Classified as Lower Risk/Least Concern on the IUCN Red List and as a Priority Species in the UK Biodiversity Action Plan. The [Scottish Wild Salmon Strategy](#) provides a framework to tackle pressures on wild Atlantic salmon.

Distribution

They are mostly found in rivers in the north and west and spend most of their lives out at sea.

Population

Declining globally. The total rod catch of Atlantic salmon in 2021 has the lowest recorded catch return figures since records began in 1952.

Monitoring

The North Atlantic Conservation Organisation and the International Council for Exploration of the Seas Working Group on North Atlantic Salmon maintain an overview of Atlantic salmon stocks.

Threats

The illegal exploitation of Atlantic salmon occurs both inland and in estuarine coastal areas. Freshwater quality, connectivity from the river mouth to potential spawning areas and predation can have a significant impact. Only 5% of fish leaving our rivers return from the sea as adults.

Golden Eagle

Common name: Golden eagle

Species name: *Aquila chrysaetos*

Summary

A bird mainly of the mountains and moorlands in Scotland, golden eagles have large territories, nesting on rocky cliff faces and in trees where it builds a nest or 'eyrie'. Most pairs have several alternative nests within their territory. These nests are often used by successive generations to rear their own young. Golden eagles form long term pair bonds.

Diet

A wide range of mainly medium-sized birds and mammals (inc. grouse, ducks, rabbits and hares), varying regionally. Carrion is taken to varying levels and more important in winter.

Appearance

A massive bird of prey, adults are mainly dark brown, with a golden head and neck. Young birds have white patches in their wings and a white base to the tail, these reducing over 3-4 years until they get their dark adult plumage.

Size

Length: 76-90cm Wingspan: 2.1m

Weight: 3.7-5.3kg

Lifespan

Typical lifespan of around 14 years

Status

Protected in the UK under Schedules 1, A1 and 1A of the Wildlife and Countryside Act 1981, and classified in the UK as a Green List species under the Birds of Conservation Concern review.

Distribution

The species can be seen widely across the Highlands and Islands primarily in upland habitats, with a very small population in the Southern Uplands, bolstered by the ongoing South Scotland Golden Eagle Project.

Population

The population increased between the 2003 and 2015 national surveys, up to 508 occupied territories. This passed the 500 pair target required by NatureScot to reach favourable conservation status nationally.

Monitoring

Around half the breeding population is monitored annually under the Scottish Raptor Monitoring Scheme mainly by Scottish Raptor Study Group members.

Threats

Natural mortality can include collisions with power lines, starvation and disease.

Illegal persecution regionally remains a significant concern.

Hen Harrier

Common name: Hen Harrier

Species name: *Circus cyaneus*

Summary

Hen harriers are medium sized, ground nesting raptors. They breed in upland areas, including moorland, open woodland, forestry and scrub, migrating to lowland and coastal habitats for the winter. Distances vary with most staying within the UK but some reach the continent. They form communal roosts out with the breeding season.

Diet

They hunt a wide range of small to medium sized birds and mammals.

Appearance

Males are a pale grey colour, with black wingtips and a white rump, females and immatures are brown with a white rump and a long, barred tail which give them the name 'ringtail'.

Size

Length: 45-50cm Wingspan: 1-1.2m,

Weight: 300-600g

Lifespan

Typical lifespan of 7-8 years

Status

Protected in the UK under Schedules 1 and 1A of the Wildlife and Countryside Act 1981, and classified in the UK as a Red List species under the Birds of Conservation Concern review.

Distribution

The species is found widely across the country but has breeding concentrations in Orkney, Inner and Outer Hebrides, and Argyll mainland.

Population

The most recent national survey was in 2023 and the population was estimated at 529 pairs, an increase from 460 pairs in 2016.

Monitoring

Up to two-thirds of the breeding population is monitored annually by the Scottish Raptor Study Group. There is also annual non-breeding roost monitoring.

Threats

Natural mortality includes starvation and disease. Foxes are the main natural predator of nests. The species is at the centre of the raptor game management conflict and regionally, illegal persecution is a significant threat to the species.

Peregrine Falcon

Common name: Peregrine Falcon

Species name: *Falco peregrinus*

Summary

The peregrine falcon suffered from persecution and pesticide poisoning in the early 20th century. Over the last couple of decades they have been doing very well at a UK level. They mainly nest on inland and coastal cliffs in Scotland, though a proportion of the population use man-made structures like buildings and quarries.

Diet

A wide range of medium sized birds with pigeons important in many areas though ducks, seabirds and waders, and some smaller birds are also taken.

Appearance

The peregrine is Scotland's biggest falcon; dark grey above with black barred white underparts. It has a white throat and cheeks and a black 'moustache' and mask.

Size

Length: 40-54cm Wingspan: 1m

Weight: 670g-1.1kg

Lifespan

Typical lifespan of 7 years

Status

Protected in the UK under Schedule 1 of the Wildlife and Countryside Act 1981, and classified in the UK as a Green List species under the Birds of Conservation Concern review.

Distribution

Can be found throughout Scotland. Generally, the species is more common in the south and east of the country.

Population

The most recent national survey was in 2014 and the Scottish population was estimated at 516-538 pairs, a decrease since 2002.

Monitoring

Between a half and two-thirds of the breeding population is monitored annually under the Scottish Raptor Monitoring Scheme, mainly by Scottish Raptor Study Group members.

Threats

Natural mortality can include collisions with power lines, starvation and disease. Illegal persecution from both pigeon fanciers and game management interests remains a regional concern for some inland and upland populations.

Red Kite

Common name: Red Kite

Species name: *Milvus milvus*

Summary

A large raptor that nests in trees mostly in small woods or near the edges of larger woods. They are found mostly on lowland or upland edge habitats, although they will visit moorland. They are social birds especially outwith the breeding season and form communal roosts which can number scores of birds in Scotland.

Diet

They have a varied diet and are an opportunist scavenger, eating both carrion and small mammals, birds and insects.

Appearance

Red kites are large, have largely reddish-brown plumage with a pale whitish head and a deeply forked tail.

Size

Length: 60-66cm, Wingspan; 1.75-1.95m,

Weight; 800g-1.3kg

Lifespan

Average 8-10 years (up to 25)

Status

Protected in the UK under Schedules 1 and 1A of the Wildlife and Countryside Act 1981, and classified in the UK as a Green List species under the Birds of Conservation Concern review.

Distribution

There are four main population centres based around original reintroductions areas; Black Isle, Aberdeenshire, Perthshire/Stirlingshire and Dumfries & Galloway. They are continuing to recover former range and the Perthshire and Aberdeenshire populations are beginning to merge.

Population

Increasing after successful reintroduction, however the growth of the populations is varied with the North Scotland (Black Isle) one, in particular, suffering slow growth due to illegal persecution. The population size hasn't been estimated since 2015 when c.275 pairs but it will now be larger.

Monitoring

There is annual monitoring of a large proportion of the breeding population under the Scottish Raptor Monitoring Scheme, mainly by Scottish Raptor Study Group members and other volunteers. There is also an annual winter roost coordinated count as part of a wider European survey.

Threats

Red kites are subject to natural mortality and their scavenging habits can make them vulnerable to collisions with vehicles and power lines. Growth of the North Scotland (Black Isle) population, in particular, has been hampered by illegal persecution.