

## Scottish wildcat

(*Felis silvestris silvestris*)

Rarely seen and famously untameable, the wildcat is an important predator of the Caledonian Forest, but is threatened by interbreeding with feral and hybrid domestic cats.



### Worldwide distribution

The Scottish wildcat is a distinct variety, or (in the view of some experts) subspecies, of the wildcat (*Felis silvestris*), which occurs over much of Eurasia and parts of Africa. Until recently, there were thought to be a large number of subspecies of the wildcat, including the Scottish wildcat, which was given its own name (*Felis silvestris grampia*). However, DNA analysis in 2007 revealed that there are only 5 subspecies altogether, and that the Scottish wildcat is the same subspecies (*Felis silvestris silvestris*) as that which occurs throughout Europe and Turkey.

### Distribution in Scotland

The wildcat originally lived in all parts of the UK mainland, but persecution and the loss of forest habitat reduced its numbers and range, and by the middle of the 19<sup>th</sup> century it was extinct in England and Wales

– the last one seen in northern England was shot in 1849. The wildcat's range has contracted in Scotland for the same reasons, and its distribution is now restricted to the Highlands, Argyll and northern parts of the Central Belt, with the healthiest populations being in the north and west of the country. There are no records of the wildcat ever occurring on Scottish islands. Sightings are occasionally reported south of Central Scotland, but those are almost certainly feral domestic cats, or perhaps hybrids between those and dispersing wildcats.

Exact population numbers are difficult to determine, because of the wildcat's secretive and elusive behaviour, but an estimate of 4,000 individuals was accepted until recently. In 2004, however, a team of scientists concluded that the actual number surviving was more like 400, once feral cats and hybrids were removed from the total.

### Conservation status

The wildcat is the most common and widely distributed of the world's cat species, and as such it is listed on the IUCN Red List of Threatened Species with the status of 'Least Concern', meaning that it is in no immediate danger. However, various subspecies or national populations have suffered declines and the Chinese subspecies (*Felis silvestris bieti*), for example, is classified as being 'Vulnerable'. The Scottish wildcat is also listed as Vulnerable, although this does not take account of the recent finding that it is the same subspecies as the wildcat in the rest of Europe.

The Scottish wildcat is listed on Annex IV of the European Community's Habitats and Species Directive, meaning that it is a species 'in need of strict protection'. In the UK, the wildcat is protected under the Wildlife and Countryside Act, and it was added to the UK Biodiversity Action Plan (BAP) as a Priority Species in 2007. It was also included as one of 32 species prioritised for conservation action under Scottish Natural Heritage's Species Action Framework in 2007. Following that, and a conference held in 2008

about the status of the wildcat in the Cairngorms, a Cairngorm Wildcat Conservation Project was launched in 2009.

### Physical characteristics and behaviour

The wildcat is the sole UK representative of the cat family, Felidae, following the extinction of its near relative, the lynx (*Lynx lynx*) in medieval times. It is a small cat, with the head and body length typically averaging 56 cm., and the tail being about 30 cm. long. Males are slightly



Scottish wildcat at the base of a Scots pine. PHOTO BY PETER CAIRNS.



Scottish wildcat on the branch of a sessile oak (*Quercus petraea*) near Arisaig. PHOTO BY LAURIE CAMPBELL.

larger than females, and the Scottish wildcat is the largest of all the subspecies, with males weighing 6-9 kg, and females 5-7 kg.

The colouration of the wildcat is grey-brown with black stripes, and there is a whitish area on the underside of the jaws. The tail is usually thicker than that of a domestic cat, and has distinctive black stripes on it. It has a blunt tip that is all black and the tail colouration is one of the best ways of differentiating between a wildcat and feral cats or hybrids. Other prominent features include the white whiskers and the pinkish colour of the bare skin on the nose.

The striped pattern of the coat provides good camouflage, and the fur itself has two layers. The inner, downy layer helps to retain the cat's body warmth, while the outer layer keeps out rain and the cold. As with other felids, the wildcat meticulously cleans its coat, to maintain it in optimum condition.

One of the key evolutionary features that have made the cat family such successful predators is their retractable claws, and the wildcat, like all members of the genus, has 18 of these – 5 on each of its front feet and 4 on each back foot. Razor-sharp, and providing an excellent grip for climbing trees or holding prey, the claws can be withdrawn in between the pads of the cat's feet, so that the cat can walk or run without hindrance. The claws are renewed periodically, with a new one growing under the old claw, which is shed as an empty sheath or husk.

The wildcat has highly flexible wrists on its front paws, which can be rotated to aid in gripping its quarry, while its canine teeth are also specially-adapted for stabbing and holding prey. The molar teeth are specialised for cutting rather than crushing, so the wildcat eats by slicing its food, without much chewing. The pinkish-red tongue is covered in papillae, or small curved spines, which enable the cat to lick meat off bones and are also important for grooming.

The wildcat's senses of hearing and smell

are both excellent, with the latter being about 14 times more sensitive than in a human. The eyes are less sensitive to colour than humans, and for many years it was thought that cats only saw in monochrome, but recent research indicates that they can differentiate between some colours. The wildcat's eyes are much better in low light levels though, and have a special layer behind the retina that reflects light back, so that they can see the same level of detail as humans with one sixth the amount of light. This enables the cat to hunt in the lower illumination of dawn and dusk, and at night. The reflective layer is also what makes the cat's eyes 'glow' when a light is shone on them in the dark. The pupils of cats' eyes close up to vertical slits, and this provides greater control of light levels than circular pupils. The wildcat has no eyelashes or outer eyelid, but it has an inner eyelid known as a nictitating membrane, which protects the eyes from drying out and damage.

Solitary and mostly nocturnal, the wildcat uses scent markings, scat and urine to mark out a territory which can range from 3 to 10 square kilometres, depending on the quality of the habitat and availability of prey. Males and females only come together for mating, which usually takes place in February or March. After a gestation period of up to 68 days a litter of 1 to 7 kittens (but usually averaging 3 or 4) is born. Blind at birth, the kittens are initially fed exclusively on their mother's milk, and she has 8 nipples for this. The kittens' eyes open at 10 days of age and are blue at first, turning yellow at about 5 months when the kittens become independent. Weaning takes place at about 12 weeks, and their mother brings live prey to them so that they can learn the techniques of hunting for themselves. Only one litter is produced each year, and young wildcats become sexually mature at between 9 and 12 months of age, usually mating for the first time in their second year. The lifespan in the wild is thought to be between 6 and 8 years, while in captivity wildcats can live up to 15 years.



Wildcat climbing a Scots pine. Note the distinctive black stripes on the tail, and the solid black, blunt tip. PHOTO BY PETER CAIRNS.

## Ecological relationships of the Scottish wildcat

As a predator, the wildcat has an important effect on controlling the numbers of its prey species – in Scotland today this is primarily the rabbit (*Oryctolagus cuniculus*). However, prior to the rabbit's introduction to the UK by the Normans in the 12<sup>th</sup> century, the wildcat's main food would have been rodents such as the wood mouse (*Apodemus sylvaticus*) and field vole (*Microtus agrestis*), and other small mammals. Lizards (*Lacerta vivipara*), frogs (*Rana temporaria*), red squirrels (*Sciurus vulgaris*) and the chicks of ground-nesting birds such as the capercaillie (*Tetrao urogallus*) are also eaten occasionally, but they form a minor part of the wildcat's diet.

Predators of the wildcat include the fox (*Vulpes vulpes*) and the golden eagle (*Aquila chrysaetos*), which will both opportunistically take kittens, while in the past the lynx and wolf (*Canis lupus*) would also have preyed on the wildcat.

Like all mammals, the wildcat is host to a range of parasites, and external or ectoparasites include the deer tick (*Ixodes ricinus*) and an ear mite (*Otodectes cynotis*). Another is the cat flea (*Ctenocephalides felis*), which also acts as a vector for the transmission of an internal or endoparasite, the dog or cucumber tapeworm (*Dipylidium caninum*). Because of its pure meat diet, the wildcat is susceptible to worms in particular, and it eats grass occasionally to help dislodge them from its gut, and to provide folic acid for its body.

Rarely seen, and noted for its inability to be tamed, the wildcat is a charismatic predator that fulfils an important but underappreciated role within the Caledonian Forest ecosystem.



Close up of a wildcat's face. PHOTO BY LAURIE CAMPBELL.