GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Mustela erminea***

Mustela erminea 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Carnivora	Mustelidae

Common name Hermelin (German), short-tailed weasel (English, USA), Grosswiesel (German), stoat (English), ermine (English), hermine (French), short-tailed weasel (English), ermine (English, Canada, Eurasia)

Synonym

Similar species *Mustela nivalis*

Summary Mustela erminea (the stoat) is an intelligent, versatile predator specialising in small mammals and birds. It is fearless in attacking animals larger than itself and adapted to surviving periodic shortages by storage of surplus kills. In New Zealand it is responsible for a significant amount of damage to populations of native species.

view this species on IUCN Red List

Species Description
The stoat (*Mustela erminea*) has the typical mustelid shape: a long thin body, a smooth, pointed head, short legs, and five toes on each foot, furred between the pads. The claws are sharp and non-retractile. The ears are short, rounded, and set almost flat into the fur. The eyes are round, black and slightly protruding; the whiskers are very long, and the muzzle is black and dog-like. The body fur is short, normally chestnut brown on the head and back, and white or cream (sometimes shading to yellow or even to apricot) on the underside. The tail is much longer than the extended hind legs, and always tipped with a conspicuous tuft of long black hair, which may be bristled out into a 'bottlebrush' at moments of great excitement (taken from King and Murphy, 2005).

Lifecycle Stages
Female stoats (*Mustela erminea*) have extreme juvenile precocity, mated as nestlings but do not produce the young until following season. Males mature at 10-11 months. Limited to a single litter a year, but in optimal conditions it can be large (10-13 young born). Average life span < 12 months in both sexes, because juvenile mortality can be very high, but those that survive their first year survival have a good chance of living 2-3 years.

Uses
Stoats (*Mustela erminea*) have been used to exterminate pest rodents and rabbits on small islands with few alternative prey (King 1989), but only in certain conditions which are hard to meet. Belief that they could control rabbits was the reason for bringing them to New Zealand, but the islands were too large and alternative prey too abundant (King, 2005).
Stoats were formerly an important source of white fur (ermine) harvested by trappers in Russia and Canada.

Habitat Description
Stoats (*Mustela erminea*) are found anywhere they can find prey from beaches to above the treeline. They are found in all types of forest, grassland, agricultural land, dunes, scrubland and tundra. They are vulnerable to predation from other mammals and raptors so they tend to stick to cover in open country. In alpine areas stoats may spend most of their time in runs and burrows below the snow, this helps provide insulation against extremes in air temperature. Stoats do not avoid human settlemernts and can occasionally be seen in villages and suburban gardens (King, 1983; King and Murphy, 2005).

Reproduction
Placental, with 9-10 month compulsory delay in implantation which divides gestation into two, 2-week periods in different calendar years. Ovulation induced by coitus; ovulation rate averages 8-10 every year, range 1-18, but litter size cut down by progressive intra-uterine mortality when food scarce, to zero in extreme conditions (King *et al*. 2003). Stoats of both sexes must survive to about 14 months old to leave surviving offspring.

Nutrition
Stoats (*Mustela erminea*) are specialist predators of small, warm-blooded vertebrates, preferably mammals of the size of rabbits or water voles and smaller. In the native range different rodents are taken at different times of the year (King, 1983). The most frequently eaten prey of stoats in New Zealand are birds, feral house mice, lagomorphs (rabbits and hares, not distinguishable from small remains), rats, possums, and insects (mostly weta of the genera *Hemideina*, *Hemiandrus* and *Gymnoplectrum*). Minor items include lizards (mostly *Leiolopisma* and *Hoplodactylus*), fish, crayfish (*Paranephrops*), carrion, and rubbish. This general pattern is clear from natural surveys of gut contents backed up by field observations (taken from King and Murphy, 2005).

General Impacts
Introduced to New Zealand later than most other introduced predators (King 1984), after serious damage to native birds had already been done, stoats (*Mustela erminea*) contributed to the collective toll, especially in more remote areas of South Island (King and Murphy, 2005). *M. erminea* has been shown to be responsible for catastrophic losses of kiwi chicks in most years (see *Apteryx australis*; *Apteryx haastii*; *Apteryx mantelli*; and *Apteryx owenii* in IUCN Red List of Threatened Species) (Basse *et al*. 1999), and of hole-nesting forest birds in southern beech forests during periodic mouse irruptions (O'Donnell 1996). Once kiwi chicks reach a weight of around 800g they are able to defend themselves against stoats (McLennan *et al*. 2004) so kiwi nurseries have been set up where kiwi chicks are translocated to areas with heavy stoat control until they become large enough to defend themselves against stoats. Cost of research and management of stoats in New Zealand runs into millions of dollars a year.

Management Info
Preventative measures: Risk Assessment models for assessing the risk that exotic vertebrates could establish in Australia have been further explored by the Western Australia Department of Agriculture & Food (DAFWA) to confirm that they reasonably predict public safety, establishment and pest risks across a full range of exotic species and risk levels.
The Risk assessment for the Stoat (*Mustela erminea*), has been assigned a VPC Threat Category of **EXTREME**. Mammals and birds were assessed for the pest risk they pose if introduced to Australia, by calculating Vertebrate Pests Committee (VPC) Threat Categories. These categories incorporate risk of establishing populations in the wild, risk of causing public harm, and risk of becoming a pest (eg causing agricultural damage, competing with native fauna, etc). The 7-factor Australian Bird and Mammal Model was used for these assessments. \r\n
Trapping is widely used to remove stoats (*M. erminea*) from game estates in UK and conservation reserves in New Zealand. Trapping is effective when very intense, but is rapidly countered by immigration (McDonald & Harris 2002). Leg-hold traps are still legal for the moment, but likely to be banned in the forseeable future; the first humane trap, the \"Fenn\", developed in UK in the 1950s, was better but does not meet current standards. New, more humane traps, are being developed. There are no poisons currently registered for use against stoats, but they are often killed by secondary poisoning after operations targetting possums and rats.
Please follow this link to read more on the management of stoats compiled by the ISSG.

Pathway
Mustela erminea were introduced to Terschelling Is. (Netherlands) to control water voles (*Arvicola terrestris*), which are now extinct on that island (Van Wijngaarden *et al*. 1961).*Mustela erminea* were originally transported to rabbit-infested pastures in New Zealand for rabbit control.

Principal source: King, C. M. 1989: The natural history of weasels and stoats;
King, C.M. and Murphy, E.C. 2005. Stoat . In: The Handbook of New Zealand Mammals (ed C.M. King) pp. 261-287. Oxford University Press, Auckland.

Compiler: IUCN/SSC Invasive Species Specialist Group (ISSG)

Review:

Pubblication date: 2010-05-26

ALIEN RANGE

[1] DENMARK
[11] NEW ZEALAND
[1] NETHERLANDS

Red List assessed species 41: CR = 3; EN = 14; VU = 14; NT = 9; DD = 1;

Anarhynchus frontalis **VU**
Apteryx australis **VU**
Apteryx mantelli **EN**
Callaeas cinereus **EN**
Cyanoramphus auriceps **NT**
Cyanoramphus novaezelandiae **VU**
Diomedea sanfordi **EN**
Falco novaeseelandiae **NT**
Hemiphaga novaeseelandiae **NT**
Hymenolaimus malacorhynchos **EN**
Larus bulleri **EN**
Leiopelma pakeka **VU**
Anas chlorotis **EN**
Apteryx haastii **VU**
Apteryx owenii **NT**
Charadrius obscurus **EN**
Cyanoramphus malherbi **CR**
Cyanoramphus unicolor **VU**
Eudyptes pachyrhynchus **VU**
Gallirallus australis **VU**
Himantopus novaezelandiae **CR**
Lanius newtoni **CR**
Leiopelma hochstetteri **VU**
Megadyptes antipodes **EN**

Mohoua ochrocephala **EN**
Naultinus gemmeus **NT**
Nestor meridionalis **EN**
Oligosoma acrinasum **NT**
Phalacrocorax chalconotus **VU**
Plectrophenax hyperboreus **NT**
Porphyrio hochstetteri **EN**
Puffinus huttoni **EN**
Xenicus gilviventris **VU**

Mystacina tuberculata **VU**
Naultinus manukanus **DD**
Nestor notabilis **VU**
Oligosoma otagense **EN**
Philesturnus carunculatus **NT**
Poliocephalus rufopectus **VU**
Puffinus griseus **NT**
Sterna albostriata **EN**

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