Oryctolagus cuniculus

System: Terrestrial

<table>
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<tr>
<th>Kingdom</th>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
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<tr>
<td>Animalia</td>
<td>Chordata</td>
<td>Mammalia</td>
<td>Lagomorpha</td>
<td>Leporidae</td>
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</table>

Common name: rabbit (English), lapin (French), kaninchen (German), Europäisches Wildkaninchen (German)

Synonym: Lepus cuniculus, Linnaeus, 1758

Similar species:

Summary: Native to southern Europe and North Africa, the rabbit (Oryctolagus cuniculus) has been introduced to all continents, except Antarctica and Asia. In many countries, rabbits cause serious erosion of soils by overgrazing and burrowing, impacting on native species that depend on undamaged ecosystems.

Species Description:
Grey-brown fur and white-grey belly. Adults 1000-2000 g. Two pairs of upper incisors; the second smaller incisors are behind the first, a feature that distinguishes leporids from rodents. They are smaller than adult hares.

Uses:
Valuable to humans as a domestic and game animal, rabbits were often released onto islands in the past as a food source for marooned sailors (Berman, 2002).

Habitat Description:
Desirable features of ideal rabbit habitat include an annual rainfall of <1000mm, a sunny aspect, light soil, and adequate cover close to feeding grounds kept closely grazed. Although rabbits can tolerate higher rainfall, they do so only on light soils and where other animals help to maintain a short sward. In wetter areas, rabbits favour dunelands, dry stony riverbeds, limestone hills with outcropping rocks, and sunny coastal slopes. They usually avoid cold and wet conditions, and are absent from alpine lands, unbroken scrub, and heavily built-up areas (Norbury and Reddiex, 2005). Although usually an animal of open country, in New Zealand rabbits have survived in low numbers on a few forested islands where the forest is low and not very dense (SPREP, 2000).

Reproduction:
Placental. Sexual. Rabbits have an endogenous reproductive cycle mainly modulated by day length and nutrition.
18-30 young per female adult per year. Females as young as 3 months can breed.

Nutrition:
Rabbits eat grass and other herbaceous vegetation. They need a diet of less than 40% fibre, 10-20% protein for maintenance, and 14% protein for reproduction. They can be very selective in their choice of food, practise coprophagy, and ferment food in the hind gut.
General Impacts
Rabbits cause severe damage to the natural environment and agricultural areas. They compete with native wildlife for food and shelter, and contribute to a decline in the numbers of many native plants and animals. They can also enhance negative impacts on native species by supporting large populations of predators such as cats and foxes. They cause extensive erosion through browsing and loss of plant cover and often destroy the habitat of many small animals. Rabbits also compete with livestock for food (Courchamp et al. 2003; Norbury and Reddiex, 2005).

Management Info
Management options include fencing, warren ripping, baiting, fumigating and biological control with myxomatosis, rabbit haemorrhagic disease virus and fleas as vectors (Moseby et al. 2005; Richardson et al. 2007). Rabbits have been eradicated from a number of islands including Enderby Island (710 ha) in the Auckland Islands group (NZ), Phillip Island (190 ha) in the Norfolk Island group and Round Island (151 ha), Mauritius. Both the Enderby Island and Round Island campaigns used brodifacoum as Talon 20P® baits. Merton (1987) gives details of the Round Island operation including bait preference and acceptance trials, and tolerance of reptiles to the anti-coagulant poison used. Details of the successful operation on Enderby and Rose Islands are available in Torr (2002).

Preventive 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 European Rabbit (Oryctolagus cuniculus), 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.

Physical: Shooting of rabbits is an inefficient method of control but unlike poisoning it does not kill predators of rabbits such as cats. Where rabbits are present with other grazing animals, removal of the latter will often result in the growth of rank vegetation unsuitable for rabbits; this can be used as a method of partial rabbit control.

Chemical: In New Zealand, poisoning has most often been carried out with compound 1080 added to carrots or oats and spread from the air. On small islands, acute poisons such as phosphorus, cyanide, strychnine and compound 1080 are all likely to kill non-target species. Second-generation anti-coagulant poisons such as brodifacoum have been used successfully against rabbits although precautions are often necessary to protect non-target species (Flux 1993).

Biological: In 1998, a virus, rabbit haemorrhagic disease (RHD, formerly called RCD), was introduced to New Zealand illegally. In some areas it has killed many rabbits, but whether it will continue to be effective in the long-term is doubtful. Myxomatosis, a contagious and often lethal disease specific to rabbits is sometimes suggested for rabbit control. This not only requires flea or mosquito vectors but causes considerable suffering to the animals affected. Furthermore, eradication by such means is unlikely. Atkinson (SPREP 2000) does not recommend use of either RHD or myxomatosis on Pacific islands. Flux (1993) examined the relative effectiveness of various methods of rabbit control using a sample of 607 islands distributed throughout the world. The main finding was that competition from hares was twice as effective at clearing rabbits off islands as predation by cats or from myxomatosis.

Pathway
In the 19th and early 20th century, Acclimatisation Societies in Australia and New Zealand brought rabbits from Great Britain in an attempt to transplant the mother country to the new colonial frontier. If put ashore for shipwrecked people they usually died out, but they persisted on some islands. Sailing ships in the 18th and 19th century sometimes carried live rabbits for food.

Principal source:

Compiler: IUCN SSC Invasive Species Specialist Group
Updates with support from the Overseas Territories Environmental Programme (OTEP) project XOT603, a joint project with the Cayman Islands Government - Department of Environment

Review: David Berman, Department of Natural Resources, Toowoomba, Queensland, Australia.

Publication date: 2010-05-26

ALIEN RANGE

AUSTRALIA [10]
CHILE [1]
FRENCH POLYNESIA [1]
KIRIBATI [1]
MEXICO [6]
NEW ZEALAND [11]
REUNION [1]
SEYCHELLES [1]
UNITED STATES [1]

CANADA [1]
FALKLAND ISLANDS (MALVINAS) [1]
FRENCH SOUTHERN TERRITORIES [5]
MAURITIUS [2]
NEW CALEDONIA [1]
NORFOLK ISLAND [1]
SAINT HELENA [1]
SPAIN [3]

Red List assessed species 73: EX = 6; CR = 27; EN = 12; VU = 15; NT = 7; LC = 6;

Acrocephalus familiaris CR
Anogramma ascensionis CR
Asparagus arborescens VU
Beta patula CR
Cabalus modestus EX
Chaeropus ecaudatus EX
Cicer canariense EN
Diomedea epomophora VU
Euphorbia origanoides CR
Genista benehoavensis VU
Isoplexis isabelliana EN
Kunzeliella subsucculenta CR
Lasiorhinus latifrons LC
Leporillus conditor VU
Limonium fruticans EN
Lotus eremiticus CR
Lotus pyrhanus CR
Marattia purpurascens NT
Masticophis anthonyi CR
Mellissia begonifolia CR
Myrmecobius fasciatus EN
Onychogalea fraenata EN
Perameles gunnii NT
Pezoporus occidentalis CR
Philoria frosti CR
Polytelis alexandrae NT
Porzana palmeri EX
Pterodroma cervicalis VU
Pterodroma leucoptera VU
Puffinus creatopus VU
Anas laysanensis CR
Aptenodytes patagonicus LC
Bencomia exstipulata VU
Bowdleria rufescens EX
Calyptrhynchus latirostris EN
Charadrius sanctaehelenae CR
Dasyornis broadbenti LC
Echium handiense CR
Gallirallus australis VU
Isoplexis chalcantha CR
Kunzeliella psilotochiada CR
Lactuca palmensis LC
Leporillus apicalis CR
Lepus corsicanus VU
Limonium sventenii CR
Lotus maculatus CR
Macrotis leucura EX
Mastacomys fuscus NT
Medicago citera CR
Micromeria glomerata CR
Oligosoma otagense EN
Onychogalea lunata EX
Petaurus norfolensis LC
Phalacrocorax colensoi VU
Pittosporum tanianum CR
Polytelis swainsonii VU
Procellaria cinerea NT
Pterodroma feae NT
Puffinus auricularis CR
Puffinus opisthomelas NT
GLOBAL INVASIVE SPECIES DATABASE
FULL ACCOUNT FOR: Oryctolagus cuniculus

Salvia herbanica CR
Sideritis cystisophon CR
Silene holmmani EN
Sinapisandren semprevivifolium EN
Teline rosmarinifolia EN
Troglodytes tanneri VU
Xantusia riversiana LC

BIBLIOGRAPHY
60 references found for Oryctolagus cuniculus

Management information

Summary: This report reviews available information on the adverse effects of 14 alien vertebrates considered to be significant invasive species on islands of the South Pacific and Hawaii, supplementing the authors' experience with that of other workers.


Summary: Eradication case study in Turning the tide: the eradication of invasive species.


Summary: Eradication case study in Turning the tide: the eradication of invasive species.

Bell, E. & Boyle, D. 2008. Rabbits on St Helena: assessment and advice on the rabbit situation in St Helena. EU South Atlantic Invasive Species Project.


Summary: Eradication case study in Turning the tide: the eradication of invasive species.


Summary: Comprehensive review of impacts of mammals on islands using rabbits as a case study


Summary: Eradication case study in Turning the tide: the eradication of invasive species.


Summary: This compilation of information sources can be sorted on keywords for example: Baits & Lures, Non Target Species, Eradication, Monitoring, Risk Assessment, Weeds, Herbicides etc. This compilation is at present in Excel format, this will be web-enabled as a searchable database shortly. This version of the database has been developed by the IUCN SSC ISSG as part of an Overseas Territories Environmental Programme funded project XOT603 in partnership with the Cayman Islands Government - Department of Environment. The compilation is a work under progress, the ISGG will manage, maintain and enhance the database with current and newly published information, reports, journal articles etc.

Kirkpatrick, Win; Amanda Page and Marion Massam, August 2008, European Rabbit (Oryctolagus cuniculus) risk assessment for Australia, Department of Agriculture and Food, Western Australia

Summary: Models for assessing the risk that exotic vertebrates could establish in Australia have been developed for mammals, birds (Bomford 2003; Bomford 2006; 2008), reptiles and amphibians (Bomford 2006; 2008; Bomford et al. 2005). These Risk Assessment models have been further explored by 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. 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.


Summary: This report documents work contributing to a project commissioned by the Invasive Animals Cooperative Research Centre to validate and refine risk assessment models used in decisions to import and manage introduced vertebrate species. The intent of the project was to: a) increase predictive accuracy, scientific validation and adoption of risk assessment models for the import and keeping of exotic vertebrates, and b) reduce the number of new vertebrate pests establishing introduced populations in Australia. Available from: http://www.feral.org.au/wp-content/uploads/2010/08/DAFWA_RA_060510.pdf [Accessed 16 March 2011]


Summary: Eradication case study in Turning the tide: the eradication of invasive species.


Summary: Eradication case study in Turning the tide: the eradication of invasive species.


Summary: In addition to investigating home range and habitat use the authors also investigated how many radio-collared rabbits were killed using different control methods at their home warren.


Summary: Report on Rabbit Eradication- Santa Clara (De Juan Fernandez Archipelago).


Summary: Case study in Turning the tide: the eradication of invasive species.


Summary: Eradication case study in Turning the tide: the eradication of invasive species.


Summary: Eradication case study in Turning the tide: the eradication of invasive species.


Summary: This database compiles information on alien species from British Overseas Territories. Available from: http://www.incc.gov.uk/page-3660 [Accessed 10 November 2009]


Summary: Eradication case study in Turning the tide: the eradication of invasive species.


Summary: Eradication case study in Turning the tide: the eradication of invasive species.


Summary: Eradication case study in Turning the tide: the eradication of invasive species.


Summary: A management handbook for rabbits in Australia.

Oryctolagus cuniculus


General information

Summary: The SPREP review contains taxa-classified chapters on invasive and potentially invasive species from leading practitioners in the Pacific. It provides a sound baseline of knowledge on Invasive Alien Species, concentrating primarily on their distributions in the Pacific.


Summary: This article presents the threats to sclerophyll forests (land clearance, grazing by cattle or deer, and fire) and the urgency to protect the remaining biodiversity of the forests.


Cet article présente la situation actuelle et les impacts des populations introduites de mammifères dans les Îles subantarctiques françaises. Les moyens de contrôle en place ou planifiés sont généralement présentés.


Summary: L'histoire des introductions de 4 mammifères herbivores, l'évolution de leurs populations, et leurs impacts sur la communauté végétale et animale sont présentés et discutés. Des moyens de contrôle sont envisagés pour permettre la restauration de ces milieux.


Summary: English:
The species list sheet for the Mexican information system on invasive species currently provides information related to Scientific names, family, group and common names, as well as habitat, status of invasion in Mexico, pathways of introduction and links to other specialised websites. Some of the higher risk species already have a direct link to the alert page. It is important to notice that these lists are constantly being updated, please refer to the main page (http://www.conabio.gob.mx/invasoras/index.php/Portada), under the section Novedades for information on updates.

Invasive species - mammals is available from: http://www.conabio.gob.mx/invasoras/index.php/Especies_invasoras_-_Mam%C3%ADferos [Accessed 30 July 2008]

Spanish:
La lista de especies del Sistema de información sobre especies invasoras de México cuenta actualmente con información acerca de nombre científico, familia, grupo y nombre común, así como hábitat, estado de la invasión en México, rutas de introducción y ligas a otros sitios especializados. Algunas de las especies de mayor riesgo ya tienen una liga directa a la página de alerta. Es importante resaltar que estas listas se encuentran en constante proceso de actualización, por favor consulte la portada (http://www.conabio.gob.mx/invasoras/index.php/Portada), en la sección novedades, para conocer los cambios.

Especies invasoras - Mamíferos is available from: http://www.conabio.gob.mx/invasoras/index.php/Especies_invasoras_-_Mam%C3%ADferos [Accessed 30 July 2008]


Summary: Consequences to the biodiversity of New Caledonia of the introduction of plant and animal species.


ITIS (Integrated Taxonomic Information System). 2005. Online Database Oryctolagus cuniculus

Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.

[Accessed March 2005]


Summary: Synthèse des introductions d’espèces de vertébrés en Nouvelle-Calédonie et évaluation de leurs impacts.


