**Capra hircus**

**System:** Terrestrial

<table>
<thead>
<tr>
<th>Kingdom</th>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
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<tr>
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<td>Chordata</td>
<td>Mammalia</td>
<td>Artiodactyla</td>
<td>Bovidae</td>
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</table>

**Common name**
Hausziege (German), goat (English)

**Synonym**

**Similar species**

**Summary**
The goat (Capra hircus) was domesticated 10,000 years ago in the highlands of western Iran. These herbivores have a highly varied diet and are able to utilise a larger number of plant species than other livestock. Goats alter plant communities and forest structure and threaten vulnerable plant species. The reduction of vegetation reduces shelter options for native animals and overgrazing in native communities leads to ecosystem degradation. Feral goats spread disease to native animals. Native fauna on islands are particularly susceptible.

**Species Description**
Males weigh between 45 and 55 kilos and females weigh between 25 and 35 kilos. Colouration is highly variable from mostly black, to various shades of brown, and from single-coloured to multi-coloured. Black anterior with brown posterior is a common pattern. Horns are dimorphic, having homonymous spiral and anterior keel. Males are bearded and produce pheromones during the breeding season.
Uses
The ability of goat herds to survive in harsh environments has lead to their introduction onto many islands, including Saint Helena Island, the Juan Fernandez Islands and Hawaii. They provided food for colonising people (specifically European colonisers and ship crews) (Campbell and Donlan 2005). Fishermen may have spread goats onto new islands, such as San Benitos (Mexico) and Pinta Island and Marchena Island (Galapagos Islands, Ecuador) (Campbell and Donlan 2005).

Goats were domesticated 10,000 years ago in the highlands of western Iran (Zeder and Hesse 2000, in Campbell and Donlan 2005). Goats are used for their fur and meat as well as for milk and cheese production. Goat meat is the most highly consumed meat source in the world. More goats milk is consumed than cows milk. Angora goats have long soft fur which is utilised to produce a soft silk-like fabric called mohair. In New Zealand, mohair prices are strong (2006) and farm gate returns are good. Although little is known of optimum farm management systems, it is considered that the farming of angora goats could contribute to the positive growth of the economy (Mohair NZ Business Plan 2006). The French are well known for utilising goat products for economic purposes; making cheese and other goat milk products (Canus Undated). Some cosmetic products have claimed to help eczema sufferers (Johnson 2006).

Habitat Description
Goats usually move in herds that roam over territories up to 20km wide. Sometimes herd ranges can be as small as 100m2. Males usually wander more widely than females. Grasslands, scrublands, rocky outcrops and semi-open or open forests are all used extensively by goats as habitat substrate. In bad weather, they may seek shelter under rocky ledges (SPREP, 2000).

Reproduction
Both sexes are physiologically capable of reproduction at about 6 months of age. Dominant males fight to win females. They follow a serial pattern and attend to one female after another as they come into estrus. In one sense this is termed polygyny, as males breed with as many females as they can during a breeding period, but more properly this is serial monogamy as a male will tend a female for extended periods, both before and after copulation and before leaving in search of a different mate.

Realised reproduction varies among populations, seasons and years. At best a typical female goat would produce one young in its first pregnancy and twin kids in subsequent pregnancies. However, most females are at less than optimal condition, which may result in a twinning rate of as little as 0%. At best, herds may produce twins at a rate of 80% or more. Triplets are not uncommon.
Nutrition
Goats are herbivores and will forage on any palatable plants in their home range. Goats have rather large rumino-recticular volume so they are able to subsist on poorer quality plants than most herbivores, therefore goats can survive and subsist in heavily exploited environments. In a study conducted by Chimera, Coleman and Parkes (1995) the rumen contents of 49 goats (captured in 1989) were identified and the dry weight of each component was measured to produce a breakdown of the diet of a small, unique remnant population (now extinct) of feral goats on Auckland Island (a subantarctic island located south of New Zealand). Woody plants and grasses made up the bulk of their diet (41% and 39%, respectively); seaweeds made up 13%, ferns 4% and herbaceous species 3%. At least 40 plant species were eaten by the goats, but only three species, rata (Metrosideros umbellate), snow tussock (Chionochloa Antarctica) and kelp (Durvillea Antarctica), made up half of the total. Rata (Metrosideros umbellate), Coprosma foetidissima, Pseudopanax simplex and Carex appressa were the most commonly found species - eaten in at least some quantity by 90%, 80%, 76% and 69% of the goats (respectively). Unidentified grasses composed 21.4% of the total contents (dry weight) and were found in 100% of goats. NB: This population had a unique genetic makeup as it evolved separately for over 100 years on an isolated island with a cold and harsh climate and so it may not represent the dietary preferences of all goats. However, it highlights the huge adaptability of goats and their ability to subsist in particular and inhospitable landscapes.

General Impacts
Biodiversity on islands is greatly threatened, making the introduction of herbivores a great risk (Campbell and Donlan 2005). Unfortunately, goats (Capra hircus) have been established on many such islands. Goats alter plant communities and forest structures and threaten vulnerable plant species; the flow-down effect of these outcomes includes increased soil erosion and the reduction of native fauna that share a similar environmental niche (Spatz and Mueller-Dombois 1973, Coblentz 1978, Parkes 1984, Brennan 1986, Coblentz and Van Vuren 1987, Cronk 1989, Walker 1991, Moran 1996, Desender et al. 1999, in Campbell and Donlan 2005). In some island ecosystems it has been the case that goats are the most destructive herbivore present (King, 1985). Feral goats are particularly destructive in such environments and cause a huge loss in native vegetation due to their grazing habits. This leads to ecosystem degradation and biodiversity loss (Coblentz 1978; Schofield 1989; Moran 1996; Desender et al. 1999 in Campbell and Donlan 2005).
Management Info

Goats have been eradicated from approximately 120 islands and there is hope that native communities will recover rapidly (Hamann 1979, 1993, in Campbell and Donlan 2005). The largest islands on which substantial goat populations have been removed are: Lanai Island (Hawaii), San Clemente (USA), Pinta Island (Galapagos Islands, Ecuador) and Raoul Island (New Zealand) (Campbell and Donlan 2005). In general, goat eradication management for islands larger than 500 hectares requires detailed planning and the use of specialised technology, equipment and personnel. Securing funds for eradication programmes may be an obstacle to goat control (Campbell and Donlan 2005).

The introduction of modern eradication technology has greatly improved the effectiveness of goat control programmes, making goat eradication more likely. Some control methods include the employment of aerial hunting (helicopter), specially trained goat-hunting dogs, Global Positioning Systems and Geographic Information System techniques as well as sterilised goats marked with radiotelemetry collars, called “Judas goats”, which gravitate to, and therefore detect, wild goat herds. Judas goats are used to find wild herds and are especially suitable for finding the last few survivors or to detect the presence of wild goats when it is uncertain whether they have been eradicated. Hunting dogs are particularly useful in situations when goat density is low and vegetation density is high. Aerial hunting is appropriate in situations where there is less ground cover and a higher density of goats. Eradication is always the better option when compared to short-term control. If short-term control is chosen, goats should be kept at low densities.

Guidelines for managing the impact of feral goats have been developed under the Vertebrate Pest Program (VPP) Australia administered by the Bureau of Resource Sciences (BRS). The purpose of these guidelines is to assist in the development of cost-effective strategies to reduce the damage feral goats’ cause to production and conservation. Management techniques and strategies for feral goat management are recommended and illustrated by case studies. Deficiencies in knowledge, management and legislation are identified. Please follow this link to view and download Parkes, J., R Henzell & G Pickles, 1995. Managing Vertebrate Pests: Feral Goats.

Pathway

Goats (Capra hircus) were released as potential food for people marooned by shipwrecks. Goats (Capra hircus) were introduced to islands for their milk.

Principal source:

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

Review: Dr. Bruce Coblentz, Oregon State University, USA.

Publication date: 2010-09-15

ALIEN RANGE
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Full Account for: Capra hircus

- Bulimulus nesioticus VU
- Bulimulus perrus VU
- Bulimulus tortuganus VU
- Cabalus modestus EX
- Campanula mairei VU
- Canariella huttereri EN
- Canavalia molokaiensis CR
- Canavalia pubescens CR
- Capra aegagrus VU
- Centaurea princesc EN
- Centranthus amazonum CR
- Chamaesyce eleonorae CR
- Charpentiera densiflora CR
- Chinchilla lanigera CR
- Cicer canariense EN
- Collocalia bartshi EN
- Convolvulus lopezsocas EN
- Corvus hawaiiensis EW
- Ctenitis squamigera CR
- Cyanea asplenifolia
- Cyclara carinata CR
- Cyclara onchiopsis EX
- Darevskia rostombekovi EN
- Dipodomys insularis CR
- Discula tetrica CR
- Echium gentianoides VU
- Encephalartos lehmannii NT
- Erigeron frigidus EN
- Euastacus australasiensis LC
- Euastacus bispinosus VU
- Euastacus clarkae CR
- Euastacus crassus VU
- Euastacus dharawalus CR
- Euastacus eungella CR
- Euastacus girumulay CR
- Euastacus girumulyn CR
- Euastacus guruhgi CR
- Euastacus hystericosus EN
- Euastacus jagara CR
- Euastacus madae CR
- Euastacus monteithorum CR
- Euastacus polysetosus EN
- Euastacus setosus CR
- Euastacus spinosus EN
- Euastacus suenon VU
- Euastacus valetsul LC
- Euastacus yanga LC
- Euphersusa poliocerca VU

- Bulimulus olla EN
- Bulimulus sculpturatus CR
- Bupleurum kakiskalae CR
- Callaea cinerea EN
- Canariella eutropis EN
- Canariella jandaiensis CR
- Canavalia napaliensis CR
- Capparis sandwiciana VU
- Chenchus agronoides CR
- Centaurium sebaeoides CR
- Centranthus trinervis EN
- Chamaesyce remyi CR
- Cheirolophus santos-abreu CR
- Christella boydiae EN
- Coccyzus ferrugineus VU
- Colubrina oppositifolia CR
- Cordia rupicola CR
- Crambe microcarpa EN
- Cumarinia odorata VU
- Cyanea procera CR
- Cyclara cychlura VU
- Cyclara steinegeri EN
- Dendroica subita NT
- Discula lycliania CR
- Ducula galeata EN
- Echium handiensis CR
- Epicrates monensis EN
- Euastacus armatus DD
- Euastacus bidawalis EN
- Euastacus brachythorax EN
- Euastacus claytoni EN
- Euastacus dalagarbe CR
- Euastacus diversus EN
- Euastacus gimaloro CR
- Euastacus gumar EN
- Euastacus hirsutus EN
- Euastacus jagabar CR
- Euastacus maccaj EN
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- Euastacus rieki EN
- Euastacus simplex VU
- Euastacus sulcatus VU
- Euastacus urospinus EN
- Euastacus wiowuru NT
- Euastacus yarreansis VU
- Euphorbia haeeleleana EN
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Gallirallus sylvestris  EN
Genista benehoavensis  VU
Globularia ascanii  CR
Hemicycly efferata  CR
Hemignathus parvus  VU
Heteromys oasicus  EN
Hylochilus infraguttatus  NT
Isoplexis isabellana  EN
Kokia kauaiensis  CR
Lactuca palmensis  LC
Laterallus spilonotus  VU
Leiopelma hochstetteri  VU
Leipoa ocellata  VU
Lepidoblepharis montecanensis  DD
Ligusticum huteri  CR
Lotus pyranthus  CR
Loxops caeruleirostris  CR
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Mastus claudia  VU
Mellanomys zuniga  CR
Melicopa macronula  CR
Metastelma anegadense  CR
Micromeria glomerata  CR
Mimus melanotis  EN
Minuartia dirphia  CR
Mohe bishopi  EX
Montivipera bommuelleri  EN
Myadestes obscurus  VU
Myiaxrus semirufus  EN
Naufraga balearica  CR
Nesillas aldabrana  EX
Nothocestrum peltatum  CR
Oblabis moratus  VU
Ochrosia inventorum  CR
Oldenlandia descensionis  EX
Oromystis mana  EN
Parvilacerta fragasii  EN
Pennantia baylisiana  CR
Petrogale penicillata  NT
Picris willkommi  EN
Pinguicula nevadensis  EN
Podarcis lilfordi  EN
Portulaca samhaensis  EN
Procellaria westlandica  VU
Pseudonestor xanthophrys  CR
Psittirostra psittacea  CR
Fritillaria epirota  EN
Gardenia brighamii  CR
Geomitra grabhami  CR
Gouania vilfitia  CR
Hemicycla paeteliana  CR
Hesperomannia arborescens  CR
Hibiscadelphus woodii  CR
Iguana delicatissima  EN
Isotomus jarmilae  EN
Kunkeliella psilotoclada  CR
Larus audouinii  NT
Ledebouria insularis  EN
Leiostyla macilentia  VU
Lepidoblepharis colombianus  DD
Leptochloa ginae  EN
Limonium sventenii  CR
Loxioides bailleui  CR
Macaca sylvanus  EN
Mastus amenazada  VU
Megapodus lapouse  EN
Meliace haupuensis  CR
Meliace saint-ohnii  EN
Microcavia shiptoni  NT
Mimus macdonaldi  VU
Mimus trifasciatus  CR
Mogera uchidai  DD
Monilearia granostriata  CR
Munroidendron racemosum  CR
Myadestes palmeri  CR
Napaeus lichenicolus  VU
Neraudia ovata  CR
Nesotriccus ridgwayi  VU
Obelus discogranaulatus  EN
Oceanodroma macrodactyla  CR
Ochrosia kilaueensis  CR
Oligosoma acrinum  NT
Paroreomyza montana  EN
Pelargonium insularis  CR
Peromyscus madres  EN
Phyllodactulus lee  VU
Pinarloxias inornata  VU
Podarcis levendis  VU
Pomarea nukuhivae  EX
Pritchardia glabra  EN
Prochimys decumanus  VU
Pseudosphegesthes bergeri  EN
Pteralysia kauaiensis  EN
FULL ACCOUNT FOR: Capra hircus

Pterodroma arminjoniana VU
Pterodroma brevipes VU
Pterodroma externa VU
Pterodroma longirostris VU
Pterodroma phaeopygia CR
Pterodroma solandri VU
Ptinopus huttoni VU
Puffinus newelli EN
Quercus cedrosensis VU
Ribes sardoum CR
Salvia herbanica CR
Scalesia atractyloides CR
Scalesia incisa VU
Scalesia steawittii VU
Schiedea kaalae CR
Silene holmzanni VU
Somuncuria somuncurensis CR
Sylvilagus graysoni EN
Tephrosia pondoensis VU
Thymus carnosus NT
Todiramphus godeffroyi CR
Triplax emgei VU
Tumbezia salvini NT
Vini ultramarina EN
Xeroecta giustii CR

Pterodroma baraui EN
Pterodroma cervicalis VU
Pterodroma feae NT
Pterodroma madeira EN
Pterodroma sandwicensis VU
Pteropus mariannus EN
Puffinus creatopus VU
Puffinus opisthomelas NT
Rhionaeschna galapagoensis EN
Ruprechta apetala LR/nt
Scalesia aspera VU
Scalesia divisa CR
Scalesia retroflexa VU
Scalesia villosa VU
Sideritis marmorea CR
Sinapidendron sempervivifolium EN
Stenopterus creticus EN
Teline rosmarinifolia EN
Theba impugnata VU
Tinostoma smaragditis EN
Todiramphus ruficollaris VU
Trochetiopsis ebusus CR
Vermivora crissalis NT
Xanthus riversiana LC
Zelkova abelicea VU

BIBLIOGRAPHY

48 references found for Capra hircus

Management information
doi:10.1017/S0030605309990743
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.
Bellchambers, K., 2004. Improving the development of effective and humane trapping systems as a control method for feral goats in Australia.
Summary: Eradication case study in Turning the tide: the eradication of invasive species.

Summary: Feral goats are implicated in habitat destruction and alteration of species composition on sensitive insular ecosystems. In the absence of population control goats become ecologically dominant and cause extinction of numerous endemic species. Removal of goats can lead to rapid recovery of suppressed flora. Problems associated with excessive goats have rarely been studied. 
Summary: The IUCN Red List of Threatened Species provides taxonomic, conservation status and distribution information on taxa that have been globally evaluated using the IUCN Red List Categories and Criteria. This system is designed to determine the relative risk of extinction, and the main purpose of the IUCN Red List is to catalogue and highlight those taxa that are facing a higher risk of global extinction (i.e. those listed as Critically Endangered, Endangered and Vulnerable). The IUCN Red List also includes information on taxa that are categorized as Extinct or Extinct in the Wild; on taxa that cannot be evaluated because of insufficient information (i.e. are Data Deficient); and on taxa that are either close to meeting the threatened thresholds or that would be threatened were it not for an ongoing taxon-specific conservation programme (i.e. are Near Threatened). 
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 ISSG will manage, maintain and enhance the database with current and newly published information, reports, journal articles etc. 
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 comprehensive review of the history and biology of feral goats in Australia, the damage they cause, and community attitudes to feral goat management. A wide range of strategies for goat control are discussed and recommended. 


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


Summary: Control of goats on Aldabra Atoll was studied and implemented October 1993 to May 1994 and November 1994 to May 1995. A total of 882 goats was killed using traditional and Judas goat hunting techniques. Judas goats became increasingly important over time.


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: This database compiles information on alien species from British Overseas Territories.

Available from: http://www.jncc.gov.uk/page-3660 [Accessed 10 November 2009]


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


General information

Barthelat, pers. comm., 2007

Summary: Personal communication with Fabien Barthelat, an expert of flora of Mayotte.


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:

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 cómo está de 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 alertas. 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 de novedades, para conocer los cambios.

ITIS (Integrated Taxonomic Information System), 2004. Online Database Capra hircus

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.


Summary: Synthèse générale sur la faune terrestre de Mayotte Meyer, J.-Y. pers. comm., 2007

Summary: Personal communication with Jean Yves Meyer, from the Délegation à la Recherche of French Polynesia


Summary: Synthèse de la répartition des espèces de vertébrés sur les îles non-californiennes et l’évaluation de leurs impacts.
