

FULL ACCOUNT FOR: Capra hircus

Capra hircus 简体中文 正體中文			System: Terrestrial		
Kingdom	Phylum	Class	Order	Family	
Animalia	Chordata	Mammalia	Artiodactyla	Bovidae	
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 ultilise 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.				
•;	view this sr	pecies on ILICN Red List	t		

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

<u>ि</u> हिंदि

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). \r\n

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, scrub lands, 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).



FULL ACCOUNT FOR: Capra hircus

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.\r\n

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-reticular volume so they are able to subsist on poorer quality plants than most herbivores, therefore goats can survive and subsist in heavily exploited environments. \r\n

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).



FULL ACCOUNT FOR: Capra hircus

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. \r\nEradication is always the better option when compared to short-term control. If short-term control is chosen, goats should be kept at low densities.

Please follow this link for an <u>overview of the management methods adopted for the control of *Capra hircus* compiled by the ISSG.</u>

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.

Pubblication date: 2010-09-15

ALIEN RANGE	
[2] ANGUILLA	[1] ANTIGUA AND BARBUDA
[41] AUSTRALIA	[1] BAHAMAS
[1] BES ISLANDS (BONAIRE, SINT EUSTATIUS AND	[2] CANADA
SABA)	
[3] CAYMAN ISLANDS	[1] COOK ISLANDS
[1] CURACAO	[1] DOMINICAN REPUBLIC
[8] ECUADOR	[1] FALKLAND ISLANDS (MALVINAS)
[1] FIJI	[3] FRENCH POLYNESIA
[3] FRENCH SOUTHERN TERRITORIES	[1] GREECE



FULL ACCOUNT FOR: Capra hircus

[2] GUADELOUPE
[1] JAMAICA
[1] MAURITIUS
[4] MEXICO
[14] NEW ZEALAND
[2] NORTHERN MARIANA ISLANDS
[1] PORTUGAL
[1] REUNION
[1] SAINT LUCIA
[4] SPAIN
[7] UNITED STATES
[4] VIRGIN ISLANDS, BRITISH

HAITI
 KIRIBATI
 KIRIBATI
 MAYOTTE
 NEW CALEDONIA
 NORFOLK ISLAND
 PITCAIRN
 PUERTO RICO
 SAINT HELENA
 SEYCHELLES
 TURKS AND CAICOS ISLANDS
 VENEZUELA
 VIRGIN ISLANDS, U.S.

Red List assessed species 284: EX = 7; EW = 1; CR = 102; EN = 80; VU = 67; LR/nt = 1; NT = 16; DD = 5; LC = 5;

Abutilon menziesii CR Acacia anegadensis CR Aceros narcondami EN Acrocephalus kerearako NT Acrocephalus vaughani EN Actinella laciniosa VU Alectryon macrococcus CR Alsinidendron trinerve CR Amazona barbadensis VU Androcymbium psammophilum VU Antirrhinum charidemi CR Aphrastura masafuerae CR Argyroxiphium sandwicense VU Asparagus arborescens VU Begonia samhaensis EN Bidens cosmoides EN Bidens wiebkei CR Bonamia menziesii CR Brahea edulis EN Brassica villosa NT Brighamia rockii CR **Bulimulus cinerarius EN** Bulimulus indefatigabilis CR 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 princeps EN Centranthus amazonum CR Chamaesyce eleanoriae CR Charpentiera densiflora CR Chinchilla lanigera CR Cicer canariense EN Collocalia bartschi EN

Abutilon sandwicense CR Acacia koaia VU Achyranthes mutica CR Acrocephalus luscinius CR Actinella actinophora VU Aethionema retsina CR Aloe pillansii CR Alsinidendron viscosum CR Anas wyvilliana EN Anolis longiceps VU Apalis karamojae VU Argyroxiphium kauense CR Armeria soleirolii EN Atelognathus reverberii EN Bencomia exstipulata VU Bidens molokaiensis VU Bobea timonioides EN Bowdleria rufescens EX Brassica rupestris NT Brighamia insignis CR Bulimulus albermalensis DD Bulimulus darwini VU Bulimulus jacobi CR Bulimulus olla EN Bulimulus sculpturatus CR Bupleurum kakiskalae CR Callaeas cinereus EN Canariella eutropis EN Canariella jandiaensis CR Canavalia napaliensis CR Capparis sandwichiana VU Cenchrus agrimonioides CR Centaurium sebaeoides CR Centranthus trinervis EN Chamaesyce remyi CR Cheirolophus santos-abreui CR Christella boydiae EN Coccyzus ferrugineus VU



FULL ACCOUNT FOR: Capra hircus

Convolvulus lopezsocasii EN Corvus hawaiiensis EW Ctenitis squamigera CR Cyanea asplenifolia CR Cyclura carinata CR Cyclura 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 EN Euastacus dharawalus CR Euastacus eungella CR Euastacus girurmulayn CR Euastacus guruhgi CR Euastacus hystricosus EN Euastacus jagara CR Euastacus maidae CR Euastacus monteithorum CR Euastacus polysetosus EN Euastacus setosus CR Euastacus spinichelatus EN Euastacus suttoni VU Euastacus valentulus LC Euastacus yanga LC Eupherusa poliocerca VU Frankenia portulacifolia VU Gallirallus sylvestris EN Genista benehoavensis VU Globularia ascanii CR Hemicycla efferata CR Hemignathus parvus VU Heteromys oasicus EN Hyloxalus infraguttatus NT Isoplexis isabelliana EN Kokia kauaiensis CR Lactuca palmensis LC Laterallus spilonotus VU Leiopelma hochstetteri VU Leipoa ocellata VU Lepidoblepharis montecanoensis DD Ligusticum huteri CR Lotus pyranthus CR Loxops caeruleirostris CR Mammillaria albicoma EN Mastus claudia VU Melanomys zunigae CR Melicope mucronulata CR Metastelma anegadense CR

Cordia rupicola CR Crambe microcarpa EN Cumarinia odorata VU Cyanea procera CR Cyclura cychlura VU Cyclura stejnegeri EN Dendroica subita NT Discula Iyelliana CR Ducula galeata EN Echium handiense CR Epicrates monensis EN Euastacus armatus DD Euastacus bidawalis EN Euastacus brachythorax EN Euastacus claytoni EN Euastacus dalagarbe CR Euastacus diversus EN Euastacus gamilaroi CR Euastacus gumar EN Euastacus hirsutus EN Euastacus jagabar CR Euastacus maccai EN Euastacus mirangudjin CR Euastacus pilosus EN Euastacus rieki EN Euastacus simplex VU Euastacus sulcatus VU Euastacus urospinosus EN Euastacus wiowuru NT Euastacus yarreansis VU Euphorbia haeleeleana EN Fritillaria epirotica EN Gardenia brighamii CR Geomitra grabhami CR Gouania vitifolia 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 macilenta VU Lepidoblepharis colombianus DD Leptochloa ginae EN Limonium sventenii CR Loxioides bailleui CR Macaca sylvanus EN Mastus amenazada VU Megapodius laperouse EN Melicope haupuensis **CR** Melicope saint-johnii EN



FULL ACCOUNT FOR: Capra hircus

Micromeria glomerata CR Mimus melanotis EN Minuartia dirphya CR Moho bishopi EX Montivipera bornmuelleri EN Myadestes obscurus VU Myiarchus semirufus EN Naufraga balearica CR Nesillas aldabrana EX Nothocestrum peltatum CR Obelus moratus VU Ochrosia inventorum CR Oldenlandia adscensionis EX Oreomystis mana EN Parvilacerta fraasii EN Pennantia baylisiana CR Petrogale penicillata NT Picris willkommii EN Pinguicula nevadensis EN Podarcis lilfordi EN Portulaca samhaensis EN Procellaria westlandica VU Pseudonestor xanthophrys CR Psittirostra psittacea CR Pterodroma arminjoniana VU Pterodroma brevipes VU Pterodroma externa VU Pterodroma longirostris VU Pterodroma phaeopygia **CR** Pterodroma solandri VU Ptilinopus huttoni VU Puffinus newelli EN Quercus cedrosensis VU Ribes sardoum CR Salvia herbanica CR Scalesia atractyloides CR Scalesia incisa VU Scalesia stewartii VU Schiedea kaalae CR Silene holzmannii EN Somuncuria somuncurensis CR Sylvilagus graysoni EN Tephrosia pondoensis VU Thymus carnosus NT Todiramphus godeffroyi CR Triplax emgei VU Tumbezia salvini NT Vini ultramarina EN Xerosecta giustii CR

Mimus macdonaldi VU Mimus trifasciatus CR Mogera uchidai DD Monilearia granostriata CR Munroidendron racemosum CR Myadestes palmeri CR Napaeus lichenicola VU Neraudia ovata CR Nesotriccus ridgwayi VU Obelus discogranulatus EN Oceanodroma macrodactyla CR Ochrosia kilaueaensis CR Oligosoma acrinasum NT Paroreomyza montana EN Pelargonium insularis CR Peromyscus madrensis EN Phyllodactylus leei VU Pinaroloxias inornata VU Podarcis levendis VU Pomarea nukuhivae EX Pritchardia glabrata EN Proechimys decumanus VU Pseudosphegesthes bergeri EN Pteralyxia kauaiensis EN Pterodroma baraui EN Pterodroma cervicalis VU Pterodroma feae NT Pterodroma madeira EN Pterodroma sandwichensis VU Pteropus mariannus EN Puffinus creatopus VU Puffinus opisthomelas NT Rhionaeschna galapagoensis EN Ruprechtia 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 ebenus CR Vermivora crissalis NT Xantusia riversiana LC Zelkova abelicea VU

BIBLIOGRAPHY

48 references found for **Capra hircus Managment information**



FULL ACCOUNT FOR: Capra hircus

Medina, M. M. & Martin, A., 2009. A new invasive species in the Canary Islands: a naturalized population of ferrets *Mustela furo* in La Palma Biosphere Reserve. Fauna & Flora International, Oryx, 44(1), 41 • 44 doi:10.1017/S003060530990743

Summary: Available from: http://www.lacerta.de/AS/Bibliografie/BIB_5107.pdf [Accessed 30 April 2011] Atkinson, I. A. E. and Atkinson, T. J. 2000. Land vertebrates as invasive species on islands served by the South Pacific Regional Environment Programme. In: Invasive Species in the Pacific: A Technical Review and Draft Regional Strategy. South Pacific Regional Environment Programme, Samoa: 19-84.

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.

Atkinson, R., J. Renteria, W. Simbana. 2008. The Consequences of Herbivore Eradication on Santiago: Are We In Time to Prevent Ecosystem Degredation Again? In Galapagos Report 2007-8 FCD, PNG, and INGALA, Puerto Ayora, Galapagos, Ecuador.

Bellchambers, K., 2004. Improving the development of effective and humane trapping systems as a control method for feral goats in Australia.

Bomford, M., 2003. Risk Assessment for the Import and Keeping of Exotic Vertebrates in Australia. Bureau of Rural Sciences, Canberra. **Summary:** Available from: http://www.feral.org.au/wp-content/uploads/2010/03/PC12803.pdf [Accessed August 19 2010] Bullock., D. J., S. G. North, M. E. Dulloo, and M. Thorsen., 2002. The impact of rabbit and goat eradication on the ecology of Round Island, Mauritius. In *Turning the tide: the eradication of invasive species*: 53-63. Veitch, C.R. and Clout, M.N.(eds). IUCN SSC Invasive Species Specialist Group. IUCN. Gland. Switzerland and Cambridge. UK.

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

Campbell, K.J, Baxter, G.S, Murray, P.J, Coblentz, B.E, Donlan, C.J & Carrion G., V in review, Increasing the efficacy of Judas goats by sterilisation and pregnancy termination, Wildlife Research.

Campbell, K.J, Baxter, G.S, Murray, P.J, Coblentz, B.E & Donlan, J.D in review, Development of a prolonged estrus effect for use in Judas goats , Applied Animal Behaviour Science.

Campbell, K.J & Donlan, C.J 2005, A review of feral goat eradication on islands , Conservation Biology, vol. 19, no. 5, pp. 1362-74.

Coblentz, B. E. 1978. The effects of feral goats (*Capra hircus*) on island ecosystems. Biological Conservation 13(4): 279-286. **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.

Daly, K. and Goriup, P. 1987. Eradication of feral goats from small islands. International Council for Bird Preservation. 46pp. Forsyth, D. M., J. P. Parkes, D. Choquenot, G. Reid, and D. Stronge., 2002. Sustained control of feral goats in Egmont National Park, New Zealand. In *Turning the tide: the eradication of invasive species*: 406 - 414 IUCN SSC Invasive Species Specialist Group. IUCN. Gland.

Switzerland and Cambridge. UK.

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

IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4.

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).

Available from: http://www.iucnredlist.org/ [Accessed 25 May 2011]

IUCN/SSC Invasive Species Specialist Group (ISSG)., 2010. A Compilation of Information Sources for Conservation Managers.

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.

Juan Luis Rodr@guez Luengo, pers.comm., Dec 20th 2006 [Aliens-L] Control of Barbary sheep in La Palma

Kessler, C.C., 2002. Eradication of feral goats and pigs and consequences for other biota on Sarigan Island, Commonwealth of the Northern Mariana Islands. In *Turning the tide: the eradication of invasive species*: 132-140. Veitch, C.R. and Clout, M.N.(eds). IUCN SSC Invasive Species Specialist Group. IUCN. Gland. Switzerland and Cambridge. UK.

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

Klinger, R. C.; P. Schuyler, and J. D. Sterner., 2002. The response of herbaceous vegetation and endemic plant species to the removal of feral sheep from the Santa Cruz Island, California. In *Turning the tide: the eradication of invasive species*: 381-388. Veitch, C.R. and Clout, M.N.(eds). IUCN SSC Invasive Species Specialist Group. IUCN. Gland. Switzerland and Cambridge. UK. **Summary:** Eradication case study in Turning the tide: the eradication of invasive species.

Mobini, S, Heath, A.M & Pugh, D.G 2002, Theriogenology of sheep and goats , in D.G Pugh (ed.), Sheep and goat medicine, W. B. Saunders Company, Philadelphia, pp. 129-86.

O Dempsey, N 1993, Sheep self mustering - muster in your sleep, Information series QI93026. Agdex 430/75, Queensland Department of Primary Industries, Charleville, Queensland.

Parkes, J., Henzell, R. and Pickles, G. 1996. Managing Vertebrate Pests: Feral Goats. Australian Government Publishing Service: 129pp. **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.

Parkes, J. P. 1990. Eradication of feral goats on islands and habitat islands. Journal of the Royal Society of New Zealand 20: 297@304. Parkes, J. P. 1990. Feral goat control in New Zealand. Biological Conservation 54: 335@348.



FULL ACCOUNT FOR: Capra hircus

Parkes, J. P.; N. Macdonald, and G. Leaman., 2002. An attempt to eradicate feral goats from Lord Howe Island. In *Turning the tide: the eradication of invasive species*: 233-239. Veitch, C.R. and Clout, M.N.(eds). IUCN SSC Invasive Species Specialist Group. IUCN. Gland. Switzerland and Cambridge. UK.

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

Parkes, J., R Henzell & G Pickles, 1995. Managing Vertebrate Pests: Feral Goats. Vertebrate Pest Program (VPP) Bureau of Resource Sciences (BRS).

Summary: Available from: http://www.daff.gov.au/brs/land/feral-animals/apamp/managing_vertebrate_pests_feral_goats [Accessed 21 June 2010]

Rainbolt, R. E. and Coblentz, B. E. 1999. Restoration of insular ecosystems: control of feral goats on Aldabra Atoll, Republic of Seychelles. Biological Invasions 1(4): 363-375.

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 tim Rudge, M. R. and Smit, T. 1970. Expected rate of increase of hunted populations of feral goats (*Capra hircus* L.) in New Zealand. New Zealand Journal of Science 13: 256¢259.

Schuyler, P. T.; D. Garcelon and S. Escover., 2002. Control of feral goats (*Capra hircus*) on Santa Catalina Island, California, USA. In *Turning* the tide: the eradication of invasive species: 406 - 414 IUCN SSC Invasive Species Specialist Group. IUCN. Gland. Switzerland and Cambridge. UK.

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

Tershy, B. R., C. J. Donlan, B. S. Keitt, D. A. Croll, J. A. Sanchez, B. Wood, M. A. Hermosillo, G. R. Howald, and N. Biavaschi., 2002. Island conservation in north-west Mexico: a conservation model integrating research, education and exotic mammal eradication. In *Turning the tide: the eradication of invasive species*: 293-300. Veitch, C.R. and Clout, M.N.(eds). IUCN SSC Invasive Species Specialist Group. IUCN. Gland. Switzerland and Cambridge. UK.

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

Torr, 2002. Eradication of rabbits and mice from subantarctic Enderby and Rose Islands. In *Turning the tide: the eradication of invasive species*: 311-318. Veitch, C.R. and Clout, M.N.(eds). IUCN SSC Invasive Species Specialist Group. IUCN. Gland. Switzerland and Cambridge. UK.

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

Varnham, K. 2006. Non-native species in UK Overseas Territories: a review. JNCC Report 372. Peterborough: United Kingdom.

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]

West., C. J., 2002. Eradication of alien plants on Raoul Island, Kermadec Islands, New Zealand. In *Turning the tide: the eradication of invasive species*: 381-388. Veitch, C.R. and Clout, M.N.(eds). IUCN SSC Invasive Species Specialist Group. IUCN. Gland.

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

Youngquist (ed.), Current therapy in large animal theriogenology, 1st edn, W. B. Saunders, Philadelphia, pp. 594-8.

General information

Barthelat, pers. comm., 2007

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

Chimera, C.; Coleman, M.C.; Parkes, J.P. 1995. Diet of feral goats and feral pigs on Auckland Island, New Zealand. New Zealand Journal of Ecology 19: 203-207.

Summary: Available from: http://www.nzes.org.nz/nzje/free_issues/NZJEcol19_2_203.pdf [Accessed 12 March 2010]

CONABIO. 2008. Sistema de informaci@n sobre especies invasoras en M@xico. Especies invasoras - Mam@feros. Comisi@n Nacional para el Conocimiento y Uso de la Biodiversidad. Fecha de acceso.

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 móxico cuenta actualmente con información aceca de nombre cientófico, familia, grupo y nombre comôn, asô como hôbitat, estado de la invasión en Móxico, rutas de introducción y ligas a otros sitios especializados. Algunas de las especies de mayor riesgo ya tienen una liga directa a la pôgina 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 secci in novedades, para conocer los cambios.

Especies invasoras - Mam@feros is available from:

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

De Garine-Wichatitsky, M., Spaggiari, J., Menard, C. 2004. Ecologie et impact des ongul@s introduits sur la for@t s@che de Nouvelle Cal@donie. IAC/CIRAD, Programme Elevage et Faune, Pa@ta, Nouvelle-Cal@donie, 50p et 128 p d annexes.

Feldmann, pers. comm., 2007

Summary: Personal communication with Philippe Feldmann, an biodiversity expert from the CIRAD- Centre de coop@ration internationale en recherche agronomique pour le d@veloppement

Fraser, Ross Kingsley Timpson, Pete McClelland, Ian Hill, Greg Sherley., undated. Auckland Island Goats A Rare Breed of New Zealand Origin Summary: Available from: http://www.rarebreeds.co.nz/auckgoats.html [Accessed 23 February 2010]



FULL ACCOUNT FOR: Capra hircus

Gargominy, O. (Ed.). 2003. Biodiversit[®] et conservation dans les collectivit[®]s fran[®]aises d outre-mer. Comit[®] fran[®]ais pour l UICN, Paris. **Summary:** Synth[®]se sur la biodiversit[®] des [®]les fran[®]aises d outre-mer et les enjeux de conservation.

Available from: http://www.uicn.fr/Biodiversite-outre-mer-2003.html [Accessed 26 March 2008]

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.

Available from: http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=180715 [Accessed 18 February 2008] Lorvelec, O., Pascal, M., Delloue, X., Chapuis, J.L. 2007. Les mammif@res terrestres non volants des Antilles fran@aises et l@introduction r@cente d@un @cureil. Rev.Ecol. (Terre Vie), 62, 295-314

Summary: Bilan des introductions des mamif@res terrestres dans les Antilles fran@aises et analyse de leurs impacts.

Louette M. 1999. La Faune terrestre de Mayotte - Mus 🕏 e Royal de l Afrique Centrale, 247 p.

Summary: Synth@se g@n@rale sur la faune terrestre de Mayotte

Meyer, J.-Y. pers. comm., 2007

Summary: Personal communication with Jean Yves Meyer, from the Dŵlŵgation ŵ la Recherche of French Polynesia Moverly, A.V. (1953) Pitcairn Island: An economic survey. Transactions of the Fiji Society 4: 61-67. In: Varnham, K. (2005) Non-native species in UK Overseas Territories: a review. JNCC Report 372. Peterborough, United Kingdom Musŵum national d Histoire naturelle [Ed]. 2003-2006. *Capra hircus*. Inventaire national du Patrimoine naturel

Summary: Available from:

http://inpn.mnhn.fr/isb/servlet/ISBServlet?action=Espece&typeAction=10&pageReturn=ficheEspeceDescription.jsp&numero_taxon=61097 [Accessed March 25 2008]

Pascal, M., Barr[®], N., De Garine-Wichatitsky, Lorvelec, O., Fr[®]tey, T., Brescia, F., Jourdan, H. 2006. Les peuplements n[®]o-cal[®]doniens de vert[®]b[®]br[®]s : invasions, disparitions. Pp 111-162, in M.-L. Beauvais *et al.*, : Les esp[®]ces envahissantes dans l[®]archipel n[®]o-cal[®]donien, Paris, IRD [®]ditions, 260 p.+ c[®]d[®]rom

Summary: Synth se des introductions d espèces de vert brès en Nouvelle-Calèdonie et évaluation de leurs impacts. Rudge, M. R. 1990. Feral goat. In King, C. M. (ed.) The Handbook of New Zealand Mammals: 406 423. Vandamme, A. 2001. Diagnostic sur les espèces spontantes Mayotte. Perception et utilisation de ces espèces par les paysans.

Vandamme, A. 2001. Diagnostic sur les esp@ces spontan@es @ Mayotte. Perception et utilisation de ces esp@ces par les pay M@moire ISTOM/CIRAD. 73 pp.