

*Trichosurus vulpecula* [简体中文](#) [正體中文](#)

**System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Diprotodontia	Phalangeridae

**Common name** Fuchskusu (German), brushtail possum (English)

**Synonym** *Trichosurus fuliginosus* , Ogilby, 1831

**Similar species**

**Summary** The brushtail possum (*Trichosurus vulpecula*) is a solitary, nocturnal, arboreal marsupial introduced from Australia. It damages native forests in New Zealand by selective feeding on foliage and fruits and also preys on bird nests and is a vector for bovine tuberculosis.



[view this species on IUCN Red List](#)

## Species Description

*Trichosurus vulpecula* are cat-sized phalanger (2-4kg) with a bushy, prehensile tail, strong claws, a pointed snout, brown eyes and prominent ears, which are naked on the inside. The fur is thick and woolly; either grey or 'black'. Grey individuals have a grizzled back and sides, with paler (whitish) underparts, a dark snout and chin and a pink nose. The sternal gland stains a streak of brown fur on the chest (most marked in adult males). The tail is thick and cylindrical, turning to black at around mid point, with a naked underside towards the end. 'Black' individuals are actually a dark brown, tinged with rufous, paler on the forequarters and underside, with an almost entirely black tail. Adult females have a forward-opening pouch with two mammarys. Adult males have testes in a pendulous scrotum, situated anterior to the penis.

## Lifecycle Stages

Reproduction is highly seasonal with the main breeding season in autumn. A secondary season in spring sometimes occurs when nutrition is good. Gestation is 17-18 days. Single newborn young (c. 0.2g) crawl into the pouch and attach to a teat. Most development occurs within the pouch, where they remain for 120 - 140 days. Young remain with the mother (initially riding on her back) for a further 100 days or more, becoming independent from 240 -270 days old. Females may mature at one year old; males at 15 months or more.

## Reproduction

Sexual: 1 - 2 young per year. Females can breed at one year of age.

## Nutrition

In its native Australia, the brushtail possum (*Trichosurus vulpecula*) feeds mainly on *Eucalyptus* leaves, but high levels of phenolics, terpenoids and other chemical defences in eucalypt foliage limits the intake of any one species. In New Zealand forests a high proportion of plant species is palatable and brushtail possum diets include a wide variety of foliage and fleshy fruits. The New Zealand plants most favoured by possums tend to be those producing foliage or fruits high in carbohydrate. In addition to their staple diet of foliage and fruits, possums also feed on flowers, the pollen cones of introduced pines, insects, and bird eggs and nestlings.

## General Impacts

*Trichosurus vulpecula* have multiple impacts, as a browser of forest vegetation, frugivore, competitor for tree hollows, predator of invertebrates and bird nests, and disease vector. Long term changes in forest structure and composition (including canopy collapse in extreme cases) can result from sustained possum browsing pressure. Some highly palatable and chemically "unprotected" plant species are so preferred by brushtail possums that their selective browsing can result in local plant extinctions. Effects on native wildlife include depletion of fruit crops, competition for tree hollows, and predation by possums on invertebrates and the eggs and nestlings of birds (including threatened species). Possums are vectors of bovine tuberculosis, and consequently pose a significant threat to cattle, deer and dairy industries.

## Management Info

Preventative measures: Harbours and releasing brushtail possums (*Trichosurus vulpecula*) in New Zealand was made illegal in the 1940s (Cowan, 2005)

Cultural: Bounties were offered for possums in New Zealand between 1951 and 1962. In this 11 year period about 8.2 million bounties were paid but the bounty system probably encouraged the illegal spread and release of possums (Cowan, 2005).

Physical: Possums are trapped for fur throughout New Zealand but pelts from the South Island are worth more. In periods of high fur prices trappers may have a significant impact on possum populations but this control is limited to accessible areas (Cowan, 2005; Marks, 2006). Possums were eradicated from Rangitoto and Motutapu islands using a combination of methods including aerial 1080 drops (estimated to kill 93% of the population), trapping using leg hold traps and ground based shooting with dogs. Helicopters fitted with forward looking infra-red cameras were used to identify areas of possum activity at night. The eradication of possums from both islands (joined by a small causeway) took 6 years (Mowbray, 2002). Possums have been removed from a number of areas surrounded by predator proof fences (e.g. Karori Sanctuary in Wellington) although the fences need constant monitoring for breaches that would allow possums and other introduced mammals back into the fenced area.

Chemical: Possum control in New Zealand using poison is coordinated by three main groups: the Animal Health Board (to minimise the Tb risk to domestic stock); the Department of Conservation (to protect forests and native wildlife); and the Regional Councils (for Tb control and conservation reasons). 1080 in carrots or cereal baits is spread using helicopters to treat large areas. Smaller areas are generally treated using ground based poisoning utilising toxins such as 1080, cyanide (in paste or capsule form), cholecalciferol, and various anticoagulants. Ground based poison control is often backed up with physical methods such as trapping and shooting (Cowan, 2005).

Biological: Two methods of biological control are being investigated: immunological interference with fertility and disabling the normal hormonal control of reproduction (Cowan, 2005). Tompkins and Ramsey (2007) investigated different methods of distributing fertility control vaccines through bait stations and concluded that the delivery method would not affect success of fertility control operations. Instead, the success depends on vaccine characteristics, namely: "its expense relative to existing tools, its longevity in the field, and its efficacy at reducing female breeding success".

Integrated management: Possum control using poisons (particularly aerial drops) frequently controls rodent species and in turn predators such as mustelids and feral cats through secondary poisoning.

## Principal source:

**Compiler:** Dr. Mick Clout, University of Auckland, New Zealand & IUCN/SSC Invasive Species Specialist Group (ISSG)

**Review:** Dr. Mick Clout, University of Auckland, New Zealand.

**Publication date:** 2007-05-31

## ALIEN RANGE

Global Invasive Species Database (GISD) 2025. Species profile *Trichosurus vulpecula*. Available from: <https://www.iucngisd.org/gisd/species.php?sc=48> [Accessed 02 August 2025]

## [10] NEW ZEALAND

**Red List assessed species 22: CR = 2; EN = 9; VU = 8; NT = 3;**

<a href="#">Anas chlorotis</a> <b>EN</b>	<a href="#">Apteryx australis</a> <b>VU</b>
<a href="#">Apteryx haastii</a> <b>VU</b>	<a href="#">Callaeas cinereus</a> <b>EN</b>
<a href="#">Cyanoramphus malherbi</a> <b>CR</b>	<a href="#">Cyanoramphus novaezelandiae</a> <b>VU</b>
<a href="#">Falco novaeseelandiae</a> <b>NT</b>	<a href="#">Hebe barkeri</a> <b>VU</b>
<a href="#">Hemiphaga novaeseelandiae</a> <b>NT</b>	<a href="#">Hymenolaimus malacorhynchus</a> <b>EN</b>
<a href="#">Larus bulleri</a> <b>EN</b>	<a href="#">Metrosideros bartlettii</a> <b>EN</b>
<a href="#">Nestor meridionalis</a> <b>EN</b>	<a href="#">Nestor notabilis</a> <b>VU</b>
<a href="#">Phalacrocorax chalconotus</a> <b>VU</b>	<a href="#">Phalacrocorax featherstoni</a> <b>EN</b>
<a href="#">Phalacrocorax onslowi</a> <b>CR</b>	<a href="#">Plectrophenax hyperboreus</a> <b>NT</b>
<a href="#">Poliiocephalus rufopectus</a> <b>VU</b>	<a href="#">Porphyrio hochstetteri</a> <b>EN</b>
<a href="#">Procellaria westlandica</a> <b>VU</b>	<a href="#">Sterna albobriata</a> <b>EN</b>

## BIBLIOGRAPHY

**31** references found for *Trichosurus vulpecula*

### Managment information

[Atkinson, I.A.E. 1995. Possums and possum control: effects on lowland forest ecosystems \(1995\). Science for Conservation no.1](#)

**Summary:** Available from: <http://www.doc.govt.nz/upload/documents/science-and-technical/sfc001.pdf> [Accessed 26 February 2008]

[BirdLife International 2004. Hemiphaga novaeseelandiae. In: IUCN 2007. 2007 IUCN Red List of Threatened Species.](#)

**Summary:** Available from: <http://www.iucnredlist.org/apps/redlist/details/143735/0> [Accessed 12 March 2010]

[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]

[Boudouresque, C. F., Meinesz, A. and Gravez, V. 1994. First International Workshop on \*Caulerpa taxifolia\*, Nice, France, 17-18 janvier 1994. GIS Posidonie, Marseille, France. 392pp.](#)

**Summary:** This book includes a synthese of results of the CE- LIFE Program Spreading of the tropical seaweed *Caulerpa taxifolia* in the Mediterranean and the 46 lectures presented on the First International Workshop on *Caulerpa taxifolia*.

[Boudouresque, C. F., Meinesz, A. and Gravez, V. 1998. Scientific papers and documents dealing with the alga \*Caulerpa taxifolia\* introduced to the Mediterranean, Ninth edition. GIS Posidonie publishers, Marseille, France: 1-60.](#)

**Summary:** This publication contents the bibliographic references of 358 documents and scientific papers about *Caulerpa taxifolia* invasion in the Mediterranean Sea.

[Brown and Sherley, 2002. The eradication of possums from Kapiti Island, New Zealand. In Turning the tide: the eradication of invasive species: 46-52. 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.

[Castric Fey, A., Beaupoil, C., Bouchain, J., Pradier, E. and L Hardy Halos, M. T. 1999. The introduced alga \*Undaria pinnatifida\* \(Laminariales, Alariaceae\) in the rocky shore ecosystem of the St Malo area: morphology and growth of the sporophyte. Botanica Marina 42: 71-82.](#)

[Castric Fey, A., Girard, A. and L hardy Halos, M. T. 1993. The distribution of \*Undaria pinnatifida\* on the coast of the Saint Malo \(Brittany, France\). Botanica Marina 36: 351-358.](#)

[Coquillard, P., Thibaut, T., Hill, D. R. C., Gueugnot, J., Mazel, C. and Coquillard, Y. 2000. Simulation of the mollusc \*Ascoglossa Elysia subornata\* population dynamics: application to the potential biocontrol of \*Caulerpa taxifolia\* growth in the Mediterranean Sea. Ecological Modelling 135: 1-16.](#)

**Summary:** Growth, survival, reproduction.

[Cowan, P.E. 2005. Brushtail possum. In: C.M. King \(Ed.\) Handbook of New Zealand Mammals, Second Edition, pp56-80. Oxford University Press, Melbourne.](#)

[Gacia, E., Rodríguez-Prieto, C., Delgado, O. and Ballesteros, E. 1996. Seasonal light and temperatura responses of \*Caulerpa taxifolia\* from the northwestern Mediterranean. Aquatic Botany: 215-225.](#)

**Summary:** Seasonal light requirements and temperature tolerance of the Mediterranean *C. taxifolia* were examined by means of photosynthetic assays. These results indicate that this species is well adapted to light abd temperature typical of the infralittoral and upper circalittoral zone in the Mediterranean. Its annual productivity pattern seems less affected by seasonal fluctuations than has been reported for endemic seaweeds; this response may explain its potentially high invasive capacity.

[Hay, C. H. 1990. The dispersal of sporophytes of \*Undaria pinnatifida\* by coastal shipping in new Zealand, and implications for further dispersal of \*Undaria\* in France. British Phycological Journal 25: 301-313.](#)

[Lovegrove, T. G., C. H. Zeiler, B. S. Greene, B. W. Green, R. Gaastra, and A. D. MacArthur., 2002. Alien plant and animal control and aspects of ecological restoration in a small mainland island : Wenderholm Regional Park, New Zealand. In Turning the tide: the eradication of invasive species: 155-163. 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.

[Meinesz A., Cottalorda J. M., Chiaverni D., Cassar N and De Vaugelas J. \(1998\) Suivi de l invasion de l algue tropicale de l algue tropicale \*Caulerpa taxifolia\* en Méditerranée: situation au 31 décembre 1997. Lab. Environnement Marin Littoral, Université de Nice-Sophia Antipolis publications: 1-238.](#)

**Summary:** Report on the expansion of *Caulerpa taxifolia* in the Mediterranean coasts at end of 1997: 5 countries affected, 99 stations cited, 4630 ha concerned, 81 km of coast affected. The report included the cartography of the *C. taxifolia* populations in each station.

Montague, T. L. 2000. The brushtail possum: Biology, impact and management of an introduced marsupial. Manaaki Whenua Press, New Zealand.

**Summary:** An account (by several authors) that outlines the breadth and complexity of the possum problem in New Zealand. The book explores current and potential future management techniques, and measuring the benefits of controlling possums.

Mowbray, 2002. *Eradication of introduced Australian marsupials (brushtail possum and brush tailed rock wallaby) from Rangitoto and Motutapu Islands, New Zealand. In Turning the tide: the eradication of invasive species: 226-232. 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.

Nugent, G.; J. Whitford, P.; Sweetapple, R.; Duncan and P. Holland, 2010. Effect of one-hit control on the density of possums (*Trichosurus vulpecula*) and their impacts on native forests. *Science for Conservation* 304, 64 p.

**Summary:** Available from: <http://www.doc.govt.nz/upload/documents/science-and-technical/sfc304entire.pdf> [Accessed 2 August 2010]

Ribera, M. A., Ballesteros, E., Boudouresque, C. F., Gómez, A. and Gravez, V. 1996. Second International Workshop on *Caulerpa taxifolia*. Barcelona, Spain, 15-17 December 1994. Publicacions Universitat de Barcelona: 1-457.

**Summary:** This book includes a syntheses of results of the CE- LIFE Program Spreading of the tropical seaweed *Caulerpa taxifolia* in the Mediterranean and the 54 lectures presented on the Second International Workshop on *Caulerpa taxifolia*.

Tasman District Council (TDC) 2001. Tasman-Nelson Regional Pest Management Strategy

Tompkins, D.M. and Ramset, D. 2007. Optimising bait-station delivery of fertility control agents to brushtail possum populations. *Wildlife Research* 34: 67-76.

## General information

Abbas, A. 1991. Feeding strategy of coypu (*Myocastor coypus*) in central western France. *Journal of Zoology*, London, 224: 385-401.

**Summary:** Feeding strategy of coypu and ability to colonize new habitats

*BirdLife International* 2008. *Nestor notabilis*. In: *IUCN 2011. IUCN Red List of Threatened Species. Version 2011.2*

**Summary:** Available from: <http://www.iucnredlist.org/apps/redlist/details/106001410/0> [Accessed 16 December 2012]

Boudouresque, C. F., Meinesz, A., Ribera, M. A. and Ballesteros, E. 1995. Spread of the green alga *Caulerpa taxifolia* (Caulerpales, Chlorophyta) in the Mediterranean: possible consequences of a major ecological event. *Scientia Marina* 59 (supl.1): 21-29.

**Summary:** This is a syntheses of the knowledge on the ecology, biology, toxicity, impacts and management of the Mediterranean populations of *Caulerpa taxifolia*. And it concludes that if *Caulerpa taxifolia* continues to spread at present rates we will witness a major ecological event, with a strong decrease of eco-diversity, in the Mediterranean coastal waters.

Cowan, P. E. 1990. The Brushtail Possum. *The Handbook of New Zealand Mammals*. King, C. M. (ed.) Oxford University Press.

**Summary:** A comprehensive book on all 46 species of land-breeding mammals (mostly alien) that occur in New Zealand. Chapters are by local experts on each species. Chapter on brushtail possums is by P.E. Cowan.

Guerriero, A., Meinesz, A., d Ambrosio, M. and Pietra, F. 1992. Isolation of toxic and potentially toxic sesqui- and monoterpenes from the tropical green seaweed *Caulerpa taxifolia* which has invaded the region of Cap Martin and Monaco. *Helvetica Chimica Acta*.

**Summary:** The *Caulerpa taxifolia* of Cap Martin (France) contains the known sesquiterpenic toxins caulerpenyne and oxytoxin. Novel potentially toxic products isolated in small amounts from this seaweed include the sesquiterpenes taxifolial A, taxifolial B, 10,11 epoxycaul. *ITIS (Integrated Taxonomic Information System)*, 2005. *Online Database Trichosurus vulpecula*

**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.cbif.gc.ca/pls/itisc/taxastep?king=every&p\\_action=containing&taxa=Trichosurus+vulpecula&p\\_format=&p\\_ifx=plgt&p\\_lang=](http://www.cbif.gc.ca/pls/itisc/taxastep?king=every&p_action=containing&taxa=Trichosurus+vulpecula&p_format=&p_ifx=plgt&p_lang=) [Accessed March 2005]

Lemée, R., Pesando, D., Issanchou, C. and Amade, P. 1997. Microalgae: a model to investigate the ecotoxicity of the green alga *Caulerpa taxifolia* from the Mediterranean Sea. *Marine Environmental Research* 44: 13-25.

**Summary:** The inhibition or delay of the proliferation of several phytoplanktonic strains by the action of organic extracts of *C. taxifolia* is reported. Seasonal variations of the toxicity were observed with a maximal effect in the summer.

Marks, Kathy., December 2006. *Alien invasion: How the possum became public enemy No 1 in The Independent: Nature*

**Summary:** Available from:

<http://www.independent.co.uk/environment/nature/alien-invasion-how-the-possum-became-public-enemy-no-1-429933.html> [Accessed 25 February 2008]

Meinesz, A. and Hesse, B. 1991. Introduction et invasion de l'algue tropicale *Caulerpa taxifolia* en Méditerranée nord-occidentale. *Océanologia Acta* 14(4): 415-426.

**Summary:** The first record of *Caulerpa taxifolia* in the Mediterranean coasts is reported and the authors point out that the development characteristics of this population are different from those in its native tropical areas.

Perez, R., Kaas, R. and Barbaroux, O. 1984. Culture expérimentale de l'algue *Undaria pinnatifida* sur les côtes de France. *Science et Pêche* 343: 15pp.

Perez, R., Lee, J. Y. and Juge, C. 1981. Observations sur la biologie de l'algue japonaise *Undaria pinnatifida* (harvey) Suringar introduite accidentellement dans l'étang de Thau. *Science et Pêche* 325: 12pp.