**Euglandina rosea**

**System:** Terrestrial

<table>
<thead>
<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>Mollusca</td>
<td>Gastropoda</td>
<td>Stylommatophora</td>
<td>Spiraxida</td>
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</tbody>
</table>

**Common name**
Rosige Wolfsschnecke (German), rosy wolf snail (English), cannibal snail (English)

**Synonym**

**Similar species**

**Summary**
The carnivorous rosy wolfsnail *Euglandina rosea* was introduced to Indian and Pacific Ocean Islands from the 1950s onwards as a biological control agent for the giant African snail (*Achatina fulica*). *E. rosea* is not host specific meaning that native molluscs species are at risk of expatriation or even extinction if this mollusc-eating snail is introduced. Partulid tree snails of the French Polynesian Islands were particularly affected; having evolved separately from each other in isolated valleys, many Partulid tree snails have been lost and today almost all the survivors exist only in zoos.

**Species Description**
The shell is large (up to 76 mm in height, 27.5 mm in diameter), thick and has prominent growth lines (University of Florida 2009). The shape of the shell is fusiform with a narrow ovate-lunate aperture and a truncated columella; typically, the shell color is brownish-pink (University of Florida 2009). Adult *Euglandina* grow from about seven to 10 cm long (Clifford *et al.* 2003).

**Habitat Description**
*Euglandina rosea* is usually found singly in hardwood forests, roadsides and urban gardens in its native range in Florida (Hubricht 1985, University of Florida 2009).

**Reproduction**
*Euglandina rosea* is a cross-fertilising egg-laying hermaphrodite. Chiu and Chou (1962, in Univeristy of Florida 2009) gave details of the biology of Euglandina in Taiwan. Individuals live up to 24 months. 25 to 35 eggs are laid in a shallow pocket in the soil. These hatch after 30 to 40 days.

**Nutrition**
*Euglandina rosea* feeds on other snails and slugs, which they track down by following the slime trails left by their prey (Clifford *et al.* 2003). It appears to prefer smaller individuals, which it swallows whole, but will attack large snails by entering through the shell aperture.

General Impacts
Molluscs are the group most affected by extinction according to the 2007 International Union for Conservation of Nature (IUCN) Red List (Regnier 2009). The Pacific region has a wide diversity of mollusc species, most of them unique to the region, and the majority endemic to single islands or archipelagos (Cowie 1996 1997a, in Cowie and Cook 2001). More and more, these unique species are becoming replaced with a homogenous group of tropical tramp snail and slug species that are increasingly widespread (Cowie 1998a, R.H. Cowie, unpub., in Cowie and Cook 2001). Of the 400 extinct species we listed from oceanic islands, 234 lived on islands to which *Euglandina rosea* had been introduced, and it is highly probable that of these 234 extinctions, 134 (>50%) of them were ultimately caused by the introduction of *E. rosea* (Regnier et al. 2009).


The carnivorous snail was introduced to control numbers of the giant African land snail (*Achatina fulica*) (Nishida and Napompeth 1975, in Cowie 2000). However, no rigorous scientific evidence exists that *E. rosea* controls *A. fulica* (Christensen 1984, in Cowie 2000) and, as a consequence, the World Conservation Union (IUCN) has formally condemned the deliberate introduction of *E. rosea* and other carnivorous snails. Most governments and other authorities appear to be aware of the potential threat posed to native fauna by *E. rosea*, however, under pressure to do something about *A. fulica*, they may misguidedly consider the introduction of *E. rosea* (and other species such as the flatworm *Platydemus manokwari*).

**Disease transmission:** *E. rosea* was found experimentally to be able to serve as both an intermediate and a paratenic host of *Angiostrongylus cantonensis*. 
Management Info
For a detailed account of the environmental impacts of *Euglandina rosea* please read: *Euglandina rosea (Rosy Wolfsnail) Management Information*. The information in this document is summarised below.

The future for some of French Polynesia's partulids may not be as bleak as once thought; according to recent studies relatively high genetic diversity is represented among living taxa and it may still be possible to preserve a representative sub-sampling of Raiatea and Tahiti's tree snail diversity (Lee et al. 2009; Ó Foighil 2009).

**Physical Control**: The ultimate objective of captive breeding programs is the reintroduction of viable populations of endangered species into their natural habitats (Coote et al. 2004). Small exclosures have been built in Hawai‘i and on Moorea (French Polynesia) to protect native tree snails from attack by *Euglandina rosea*.

**Legislation**: It is almost impossible to prevent the within-island spread of *Euglandina* in French Polynesia (Coote et al. 1999). Between-island spread of *Euglandina* should be prevented by legislation. The Marqueses Islands, the Southern Cooks and the Austral Islands provide refuges for some of the remaining partulid species (Lee et al. 2007a) and should be kept *Euglandina*-free. *E. rosea* is now legally considered to be a noxious species in French Polynesia; the introduction of live specimens and their transport from one island to another is forbidden (Meyer 1998).

**Other**: Since 1986 partulid snails have been the subject of an international breeding programme; the International Partula Conservation Programme manages a breeding programme for 25 species in 15 zoos worldwide. Introducing Society Island partulids to the Austral Islands that are free of the predator might ensure their long-term survival in the wild (Ó Foighil 2009). Coote & Loeve (2003) concluded that *E. rosea* was extinct in the wild on Huahine, strongly suggesting that the successful re-introduction of partulids into the wild on Huahine might be possible.

Conservation actions in the wild may be limited to identifying and protecting populations of partulid snails that offer some possibility of persistence in the presence of *Euglandina* (Ó Foighil 2009). Based on laboratory behavioral studies of the effect of temperature on *E. rosea* movement, Gerlach (1994, in Ó Foighil 2009) hypothesised that an altitudinal refuge above 600 to 700 m would exist for Society Island partulids.

**Research and Knowledge**: Further research into the biology of *E. rosea*, and particularly its population dynamics, needs to be carried out. There are no known natural predators, so a species-specific toxin in snail bait, as tested in Hawaii (M. G. Hadfield pers. comm., in Coote et al, 1999), could be a promising approach. A good relationship between the Pacific Island Land Snail Group (PILSG) and the French Polynesian government authorities has developed, and joint initiatives for conservation and research are being planned (Coote et al. 1999).

**Education and Knowledge**: Despite the lack of evidence supporting *Euglandina* as a successful biological control agent and despite the abundant evidence of their negative predatory impact on native snail fauna, carnivorous snail introductions continue (Cowrie 1992). Clearly public education about the French Polynesia’s precious natural fauna and the dangers posed to such fauna by carnivorous biological control agents could help to reduce the likelihood of *Euglandina* being purposefully translocated to new islands. Local willingness and experience are already in place to conserve French Polynesia’s partulid snails (Coote & Loeve 2003).

**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**: Review of updates under progress

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**ALIEN RANGE**


GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: Euglandina rosea

[2] INDIA
[3] JAPAN
[1] MADAGASCAR
[1] MAYOTTE
[1] NORTHERN MARIANA ISLANDS
[1] PAPUA NEW GUINEA
[1] SEYCHELLES
[1] SRI LANKA
[1] UNITED STATES
[1] WALLIS AND FUTUNA

[1] INDONESIA
[2] KIRIBATI
[1] MAURITIUS
[1] NEW CALEDONIA
[1] PALAU
[1] REUNION
[1] SOLOMON ISLANDS
[1] TAIWAN
[1] VANUATU

Red List assessed species 72: EX = 43; EW = 10; CR = 12; EN = 1; VU = 2; DD = 4;

Achatinella mustelina CR
Partula affinis CR
Partula altiss EX
Partula auriculata EX
Partula calilfera EX
Partula cedista EX
Partula clara CR
Partula cuneata EX
Partula dentifera EW
Partula exigu EX
Partula filosa EX
Partula fusca EX
Partula hebe EW
Partula imperforata EX
Partula leptochila EX
Partula levistriata EX
Partula lutea EX
Partula mooreana EW
Partula otahieta CR
Partula planilabrum EX
Partula protracta EX
Partula remot EX
Partula rosea EW
Partula sagitta EX
Partula taeniata CR
Partula tohineana EW
Partula turgrida EX
Partula varia EW
Samoana abbreviata CR
Samoana attenuata CR
Samoana conica EN
Samoana diaphana DD
Samoana hamadryas CR
Samoana jackieburchi EX
Samoana oreas CR
Erinna newcombi VU
Partula arguta EX
Partula aurantia EX
Partula bilineata EX
Partula candida EX
Partula citrina EX
Partula crassilabris EX
Partula cytherea EX
Partula doliichostoma EX
Partula eremita EX
Partula fava EW
Partula formosa EX
Partula garre Ex
Partula hylina VU
Partula labrusca EX
Partula leylinea EX
Partula lugubris EX
Partula mirabilis EW
Partula navigat EX
Partula ovalis EX
Partula producta EX
Partula radiata EX
Partula robusta EX
Partula rustic EX
Partula suturalis EW
Partula thalia EX
Partula tristis EW
Partula umbilicata EX
Partula vittata EX
Samoana annectens DD
Samoana burchi CR
Samoana decussatula CR
Samoana ganymedes DD
Samoana inflata EX
Samoana magdolinea DD
Samoana strigata CR

BIBLIOGRAPHY

30 references found for Euglandina rosea

Management information


Summary: A discussion of the introduction of predatory snails (notably Euglandina rosea), in putative attempts to control A. fulica. The devastating consequences on native land snail diversity, especially in the islands of the Pacific.


Summary: Discusses the conservation related impacts of the introduction of alien land and freshwater snails and slugs to the islands of the Pacific. Provides details of the main alien species of concern, identifies islands most at risk and islands on which to focus conservation efforts. Lists distribution details for all alien snails and slugs in the Pacific.


Summary: Discusses the impacts of alien rats and Euglandina rosea on native Hawaiian tree snails.


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: Major treatise on the worldwide spread of A. fulica, its impacts, and management.


Summary: Reports the final demise of all seven Partula species of Moorea in the face of the spread of E. rosea and the imminent threat to Partula on Tahiti.


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]

General information


Summary: Discusses the introduction of predatory snails (notably Euglandina rosea) into a Protected Area of Natural Habitat on Moorea, Pacific Science 229(3): 79-89.

Summary: Assesses the feeding preferences of E. rosea, showing that it prefers snails other than A. fulica, and prefers small over large snails. Lists the regions into which it has been introduced and the impacts in those regions.


Summary: Synthèse sur la biodiversité des mollusques de terre sur l’île Rodrigues en 2003.. Comité françois des îles outre-mer et les enjeux de conservation.


Summary: Reports the final demise of all seven Partula species of Moorea in the face of the spread of E. rosea and the imminent threat to Partula on Tahiti.


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