

Euglandina rosea (Rosy Wolfsnail) Management Information

Contents

1.0 Introduction	Page 1
2.0 Physical Control	Page 1
3.0 Legislation	Page 1
4.0 Captive Breeding Programmes	Page 2
5.0 Research and Knowledge	Page 2
6.0 Education and Awareness	Page 2
7.0 References	Page 2

1.0 Introduction

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).

2.0 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 enclosures have been built in Hawai'i and on Moorea (French Polynesia) to protect native tree snails from attack by *Euglandina rosea*. An experimental predator-proof forest reserve was constructed on the island of Moorea. The experiment was unsuccessful, however, breeding of individual snails in the wild was achieved temporarily, captive breeding methods were validated by reproduction and growth to sexual maturity in the wild and genetic variability in the form of persistent color polymorphism was retained in one species (Coote *et al.* 2004).

3.0 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 Australs 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). In 1997 the entire Partulidae family was protected under the Nature Protection Act (1995) (J.Y. Meyer pers. comm., in Coote *et al.* 1999).

4.0 Captive Breeding Programmes

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. This appears to be the case, with Mt Tefatua on Raitea providing a refuge for endemic *Partula* and Mt Marau on Tahiti-Nui providing a refuge for *P. otaheitana*, which has persisted above 1000 m elevation despite the presence of *Euglandina* for over a decade (Ó Foighil 2009). These populations may be capable of at least short term persistence in the wild (Lee *et al.* 2007a, in Ó Foighil 2009). It is hoped that areas with remaining lineages of Polynesian tree snails may be upgraded to protected status (Coote *et al.* 1999).

5.0 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).

6.0 Education and Awareness

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).

7.0 References

Please see the GISD Species Profile for: [Euglandina rosea \(References Section\)](#).