

PARKS IN PERIL IN THE ISLANDS OF FRENCH POLYNESIA (SOUTH PACIFIC OCEAN)

The current situation of parks and nature reserves in the tropical oceanic islands of French Polynesia (South Pacific Ocean) is critical. Natural protected areas are found in only nine islands of the 118 that formed this French overseas territory. Seven of them are uninhabited high volcanic islets (including Eiao, Hatutu, and Mohotani in the Marquesas Is.) or uninhabited small atolls (including Motu One in the Marquesas, Scilly and Bellinghausen in the Society Is., and Taiaro in the Tuamotu Is.). The total protected area is ca. 7,000 ha, i.e. only 2% of the total land surface of French Polynesia (ca. 3520 km²). All of these protected zones, except Taiaro which has been recently included (1998) in the Tuamotu Biosphere Reserve (along with 5 other atolls), are characterized by a lack of active management, with no monitoring, caretaking or park guards. In the absence of human activities, the main threat to these protected areas remains the invasion by alien plant and animal species. Feral sheep are thriving on the islets of Mohotani (1,300 ha) and Eiao (4,000 ha) where less than 25% of the native vegetation is left. The understory of the native *Pisonia grandis* coastal forest is "cleaned up" by overgrazing and the mesic vegetation has turned into eroded bare land in some places. The native lowland rainforest of Te Faaiti Natural Park (750 ha), established in 1989 and located in the largest valley of Tahiti (Papenuu valley), is heavily invaded by the introduced tree *Miconia calvescens* (Melastomataceae) which forms dense monospecific stands and threatens rare endemic plants, such as the protected shrub *Polyscias tahitensis* (Araliaceae) or the orchids *Phaius tahitensis* and *Bulbophyllum tahitensis*. Wild horses, cattle and goats make frequent incursions into the Natural Park and Nature Reserve of Vaikivi (240 ha) recently established in 1997 in the island of Ua Huka (Marquesas). Mohotani and Vaikivi have still good populations of the critically endangered Marquesan flycatchers (*Pomarea mendozae* and *Pomarea iphis* respectively) because of the absence of black rats (*Rattus rattus*). Ua Huka is also one of the few French Polynesian islands without the carnivorous snail *Euglandina rosea* and has still good populations of endemic tree snails of the genus *Samoana* (Partulidae). Hatutu (750 ha), another rat-free island, is the only place (along with Fatu Huku, another inhabited but unprotected Marquesan islet) where the endangered Marquesan ground-dove *Gallicolumba rubescens* is found. Fencing projects were proposed on Mohotani and Vaikivi, as well as sheep eradication on Mohotani and Eiao, but these have not yet been achieved due to lack of strong political support and/or of available funds.

Other natural areas of high conservation value in French Polynesia that were proposed to be protected, are also under the immediate threat of invasive species. For instance, the Temehani plateaus in the island of Raiatea (Society Is.) where the endangered endemic lobeliad *Apetahia raiateensis* (Campanulaceae) is growing, is

currently threatened by the spread of two invasive alien shrubs (*Rhodomyrtus tomentosa*, Myrtaceae, and *Chrysobalanus icaco*, Chrysobalanaceae). The endemic tree snails are vanishing on the remote island of Fatu Iva (Marquesas) due to the introduction of *Euglandina rosea*, as well as the Fatu Iva flycatcher (*Pomarea whitneyi*) and the Ultramarine lorikeet *Vini ultramarina* due to the recent arrival of black rats in 2000. It is clear that if no active management of invasive plant and animal species is conducted promptly in the natural protected areas of French Polynesia, these areas will rapidly lose their most vulnerable and ecologically interesting taxa !

ACKNOWLEDGEMENTS

I am grateful Dr. to David Lorence (National Tropical Botanical Garden, Kauai, Hawaii, USA) for revising the English on this paper.

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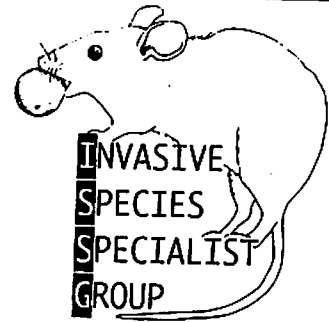
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The "cleaned" understory of a native *Pisonia grandis* (Nyctaginaceae) coastal forest caused by overgrazing by feral sheep on the Nature Reserve of Mohotani. Photo: J.-Y. Meyer, Délégation à la Recherche.

ALIENS

Number 17 2003



SPECIAL ISSUE ON INVASIVE ALIEN SPECIES AND PROTECTED AREAS

INVASIVE ALIEN SPECIES AND BIODIVERSITY CONSERVATION – THE ANOMALY

Kruger National Park (South Africa)

Introduction

Many protected areas worldwide are more known for their management focussed on protecting endangered species and other aspects which attract emotional and sympathetic reaction from supporters. However, invasive alien species (IAS) are regarded as the second greatest threat to global biodiversity by scientists worldwide (IUCN, 1997). This, second to habitat degradation and fragmentation (i.e. deforestation). As conservation areas are often protected and not subjected to any or large scale fragmentation and degradation, it stands to reason that the number one threat facing the core business of biodiversity conservation is that of Invasive Alien Species. These sentiments are exactly those expressed by the Kruger National Park (KNP), which during a workshop on Biodiversity conservation (1997) rated IAS as the greatest threat to the KNP. Surely a turning point from the past where anti-poaching, fire control, water provision and other aspects were considered the most important duties of a ranger or protected area manager. These are still indisputably important and necessary (and I do not attempt to portray it in any other way). However, if the integrity of the natural system is degraded through the introduction of IAS to such an extent that it creates a significant negative impact on native biodiversity, we should become concerned, as the core business of protected area management will certainly be eroded away.

The problem with invasive species is that they are not intrinsically interesting to most people, often including protected area managers and officers. They do not conjure up stories of excitement or the thrill and reward of catching an armed poacher with ivory in his hands. They do not have long flashing fangs that can shred you and sharp claws to rip. The invasion by alien species is often quite slow, unnoticeable and the impacts most frequently irreversible and immense.

The problems in Kruger National Park

Currently, the KNP has recorded approximately 363 alien plant species, Indian myna's have been recorded in the park on occasion, three fish species have been recorded as well as other insect pests etc. All of the major rivers, as well as the larger tributaries have been invaded to some extent. Combined clearing efforts between the *Working for Water* programme and the SANParks funding have totalled approximately R35 million since 1997, in the KNP alone. In spite of the amount of funding and the efforts being put in, we are only just managing to keep the levels of invasive plants down to a minimum level; in

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ISSN: 1173-5988