JYM

CENTRE FOR BIODIVERSITY AND BIOSECURITY

Island Invasives: Eradication and Management

PROGRAMME

ABSTRACTS AND

LIST OF PARTICIPANTS

ISSG
Invasive Species
Specialist Group

Eradication of feral stoats (*Mustela erminea*) from Secretary Island, New Zealand.

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Stoats (*Mustelia erminea*) are known to be good swimmers. Following their liberation into New Zealand it took a mere six years for stoats to invade many of the remote coastal islands of Fiordland. Stoats probably reached Secretary Island (8140 ha) in the late 1800s. Red deer (*cervus elaphus*) are the only other animal pest present on Secretary Island; surprisingly rodents have never established. The significant ecological values of Secretary Island have made it an ideal target for restoration. The eradication of stoats from Secretary Island commenced in 2005. Nine-hundred-and-forty-five stoat trap tunnels, each containing two Mark IV Fenn™ traps, were laid out across newly cut tracks at a density of one tunnel per 8.6 ha. Traps were also put in place on the adjacent mainland and stepping stone-islands to reduce immigration. Pre-baiting was undertaken twice in June and July 2005. In late July the traps were baited, set and cleared twice over a 10 day period. Ninety-five stoats were captured: 34 males, 56 females, and 5 unknown. Subsequent trap checks have taken place in November, February and between May-July each year. Forty-four stoats were caught in February 2006, predominantly juveniles. Stoat captures have decreased to between 0 and 8 each trapping period with the majority being caught in summer. Genetic analysis of stoats captured to June 2008 indicates that these stoats were probably a mixture of residents and a few immigrants. A significant stoat plague event during summer 2006-2007 may have increased the likelihood of new stoats arriving on Secretary Island at that time. Island and coastal traps have since been replaced with stainless steel DOC 150™ traps as single-sets. Trap checks will continue at the present level until there are two consecutive checks with zero captures after which time they will be checked twice annually.

Strategy to control the invasive alien tree *Miconia calvescens* in Pacific Islands: eradication or containment?

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Miconia calvescens (Melastomataceae) is considered the most aggressive invasive plant in the tropical islands of French Polynesia and Hawaii, and a serious threat to the native rainforests of New Caledonia. A small tree native to Central and South America, it was introduced as an ornamental in private botanic gardens in Tahiti (1937), Honolulu (1961), Nouméa (1970s) where it escaped, became naturalized, and formed dense monospecific stands. More than 80,000 ha are currently invaded in French Polynesia where the species is found from near sea-level to 1400 m elevation, about 10,000 ha in the Hawaiian Islands, and 120 hectares in New Caledonia. Control programs (manual uprooting of seedlings and saplings, chemical treatments of reproductive trees on cut-stumps and/or carefully targeted spraying from helicopter) have been initiated in the Hawaiian Is. (Oahu, Maui, Hawaii, Kauai) and French Polynesia (Raiatea, Tahaa, Nuku Hiva, Fatu Hiva) since the early 1990s, and in New Caledonia (Province Sud) since 2006. Despite more than 15 years of intense control efforts and millions of plants destroyed, complete eradication was not achieved in any of these islands, mainly because of the species invasiveness (e.g. prolific seed production, active dispersal by alien and native frugivorous birds, large and persistent soil seed bank) associated with the difficulty to detect and destroy plants on rough terrain and steep slopes, as well as insufficient control frequency, and limited financial and human capacities. However, because the plant life cycle requires at least four years for growth from seedling to fruiting, eradication in the sense of "no fruiting tree" may be an effective control strategy for populations which size is small enough to be managed over a long-term with sustainable resources. This "juvenilization" process is not a substitute for but a means toward possible eradication of small populations when carefully conducted over a quarter century.