
Feral cat population on large and inhabited island: efficiency of small scale control

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Abstract

Invasive populations of feral cats strongly threatened wildlife on worldwide islands and particularly native species. Feral cats have invaded New Caledonia archipelago from seashore habitats to the highest altitude forest (1628m), most of these habitats harboring unique species assemblages. Here, we aim at mitigating cat impact on Pinda'i peninsula (10 km²), located in the North of the New Caledonian mainland. We studied cat recolonization process by estimating cat population size before and after a feral cat control. We used camera traps as "capture" method and calculated 3 indicators: i) abundance index; ii) minimum number of individuals and, iii) individual capture histories using the spatially explicit capture-recapture (SECR) model to calculate density. Before feral cat control, we obtained 54.5 detections/100 camera trap-days from a total effort of 889 camera-trap days over 1 month. We individualized 25 feral cats from these pictures and the density calculated was 2.02 individual/km². Then, 35 feral cats were live-trapped for 1240 trap-days over 2 months. 3 months after the end of feral cat control we obtained 43.32 detections/100 camera trap-days from a total effort of 1228 camera-trap days over 1.5 month. We individualized 28 cats and the preliminary density calculated was between 1.8 and 1.9 individual/km². Our study confirms camera-trapping as a useful tool to calculate the minimum size and density of a targeted cat population. This cat population has recovered, in only 3 months after the end of cat control and mainly by colonization of new individuals.

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