

# 琉球大学学術リポジトリ

## 痕跡調査と糞の遺伝学的解析による絶滅危惧種イリオモテヤマネコ(*Prionailurus bengalensis iriomotensis*) の生態学的研究

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**The conservation ecology of the endangered Iriomote cat  
(*Prionailurus bengalensis iriomotensis*) using field sign survey and  
molecular scatology**

**DIAZ SACCO, JUAN JOSE**

**Abstract**

The Iriomote cat (*Prionailurus bengalensis iriomotensis*) is a Critically Endangered cat endemic to Iriomote-jima Island in the Ryukyu Archipelago, Japan. It is mainly threatened by habitat destruction and vehicle collisions. Field sign survey and molecular scatology are essential to study the ecological traits of this cryptic felid to minimise human disturbance in order to help improve its conservation. Therefore, scat and prey surveys were conducted to assess road use by the Iriomote cat. The influences of prey density along several environmental factors on number of scats were examined using nested generalized linear models (GLMs), assuming Poisson error and a log-link function. Diurnal lizards were strongly correlated with scat along roads passing through natural forest and coastal vegetation, and road-killed *Fejervarya sakishimensis* were positively correlated with scat along roads. Afterwards, scat samples were collected along roads mainly passing through degraded areas for faecal DNA extraction. Reproducible species and sex DNA amplification methods were obtained from 16S rRNA gene using a multiplex nested PCR and from an SNP marker in a zinc-finger protein gene using PCR-RFLP, respectively. Sex-specific habitat use was examined by nested GLM, assuming binomial error with the response and main categorical variables as binary data. Males were correlated to croplands and pastures mostly likely because of a large number of transients. Females were found in all areas with degraded habitats most likely due to shrinkage of suitable habitat leading to population saturation of this cat. Both sexes could have also been found along degraded habitats because it represents the edge habitat of their home ranges. Conservational measures and further research topics were also proposed.