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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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論 文 要 旨

Abstract

論文題目

Title

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

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

The Iriomote cat (*Prionailurus bengalensis iriomotensis*) is a critically endangered wild cat endemic to Iriomote-jima Island in the Ryukyu Archipelago, Japan. It is mainly threatened by habitat destruction and vehicle collisions. Non-invasive methods are essential to study the ecological traits of this cryptic felid while minimizing human disturbance to help improve its management and conservation. Therefore, in 2009, scat and prey surveys were conducted to assess road use by the Iriomote cat. To analyze the importance of factors related to road use by the Iriomote cat, the influences of prey density along road types, habitat types, presence or absence of road construction activities, and survey regions on number of scats were examined using nested generalized linear models (GLM), assuming Poisson error and a log-link function. Diurnal lizard density was strongly correlated with scat along roads, and the density of road-killed *Fejervarya sakishimensis* was positively correlated with scat presence along roads. Between 2009 and 2010, scat samples were collected along roads on Iriomote-jima Island. DNA was extracted from these samples. Scat samples were classified according to degree of freshness and stored with different methods to compare DNA success rates. Reproducible species and sex DNA amplification methods were obtained from 16S mtDNA using a multiplex nested polymerase chain reaction (PCR) and from an SNP marker in a zinc-finger protein gene using PCR-restriction fragment length polymorphisms (PCR-RFLP), respectively. Sex-specific ecological traits were examined by nested GLM, assuming binomial error and log link function with the response variable as binary data. Conservational measures and further research topics were also proposed.

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