

琉球大学学術リポジトリ

島嶼環境に適応したイリオモテヤマネコの生態的可塑性：多様な食性と柔軟な環境利用様式

メタデータ	言語: 出版者: 琉球大学21世紀COEプログラム 公開日: 2007-10-28 キーワード (Ja): キーワード (En): 作成者: 渡辺, 伸一 メールアドレス: 所属:
URL	http://hdl.handle.net/20.500.12000/2191

**Ecological plasticity of the Iriomote cat *Prionailurus bengalensis iriomotensis*
as an adaptation to the insular environment-variety of food habit and flexible habitat use**

Shinichi Watanabe (Faculty of Science, University of the Ryukyus, Japan)

The leopard cat, *Prionailurus bengalensis*, is one of the most widespread felids and is distributed almost throughout temperate to tropical Asia. The Iriomote cat, *P. b. iriomotensis*, is one of its subspecies and occurs only on Iriomote Island (284 km²) of the southern Ryukyus, Japan. The range of distribution of the leopard cat includes a number of islands, of which Iriomote Island is by far the smallest in area. Another unique feature of Iriomote Island as an island inhabited by the wildcat lies in the absence of native non-volant small mammals, such as rodents, that generally constitute principal prey of small felids. In this presentation, I will highlight a few ecological characteristics of the Iriomote cat that have presumably been enabling this subspecies to persist on such an island with severe environmental constraints for wildcats in general as Iriomote Island. Then, I will also discuss potential ecological plasticity of the leopard cat.

The dietary habit of the Iriomote cat was examined in detail by analyzing 947 contents of scats collected from throughout the island. I also investigated potential prey availability for the cat by carrying out censuses along transects, 242 km in total length. From the scats, 76 prey items were found, representing the highest diversity of prey animals for a single field species. Seasonal variations in frequency of occurrence of 19 principal prey items found in scats were examined and compared with those of their availability. Results indicated that for each prey species the two parameters illustrated similar seasonal patterns, suggesting that the cat shifts principal prey items seasonally in response to changes in their availabilities. To evaluate environmental correlates of availability and frequency of actual intake of each prey species, I analyzed nine topographic and vegetative factors in surrounding environments of locations where each of the principal preys was sighted during censuses or scats containing it were found. The result indicated that both availability and actual predation of each prey item were under the similar influences of some environmental factors. This suggests that the cat most frequently preys on the most abundant prey item in each habitat, and flexibly changes the principal prey items depending on their abundances there.

To analyze habitat use of the cat, I conducted radio-tracking surveys on 15 individuals in seven different areas within Iriomote Island. I examined environmental characteristics of locations used by the cats in regard with nine topographic and vegetative factors. Then, its seasonal and local variations were examined in each study area. The results showed that all studied cats selectively used their habitats but the habitat types preferred varied both seasonally and geographically. It is supposed that the cat flexibly change the habitat use probably in response to seasonal and local variations in availability of their food.

In conclusion, the Iriomote cat seems to have adapted to the islandwide environment by acquiring flexibility needed to change principal prey items and habitat use in response to spatial and temporal variations of food availability. Moreover, I believe that leopard cat may potentially have such flexible and versatile properties in various ecological aspects, but this is only revealed under such varying environmental conditions as those on Iriomote Island.