FINAL REPORT

SURVEY FOR SMALL FELID SPECIES IN THAILAND RESERVES &
EVIDENCE FOR COMPETITIVE EXCLUSION BY LARGER FELIDS

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ABSTRACT

Many species of carnivores occur within Thailand including representatives of the families Felidae, Canidae, Ursidae, Mustelidae, Viverridae and Herpestidae, but there is limited understanding of their natural history, ecology and distribution. Unfortunately many of these species are now threatened or endangered making conservation efforts an important focus in this region. Ecosystem conservation places importance on interactions within a community. Exploitation interactions (predator-prey) have been the focus of many studies within the past decades; however, little attention has been focused on interspecific competition among predators. The aim of this research is to understand interspecific competition among carnivore species that are found within Thailand’s protected area system through in situ data collection and analysis. Data collection involved placing camera traps in four protected areas within Thailand. Presence-absence data were collected for all carnivore species detected and used in the program PRESENCE using a 2-species co-occurrence model to investigate interactions. Dyads when species do not overlap in weight were found to co-occur when prey for both species were detected (\( \phi >1 \)). When prey species were not detected there was evidence of avoidance by one or both species (\( \phi <1 \)). In dyads when the species overlapped in weight the species acted independently of each other when prey were not detected (\( \phi =1 \)) or co-occurred when prey were detected. Evidence for species interspecific competition was seen in our research efforts. This
Asia brings us a step closer to providing better input into management decisions. These results can be built on and aid in the conservation and preservation of carnivore species in Southeast Asia.

Introduction

In 2009 the Smithsonian Conservation Biology Institute and Kasetsart University partnered together to investigate Southeast Asian carnivore interactions. Our team collaborated with the National Research Council of Thailand (NRCT), Zoological Park Organization and National Park, Wildlife and Plant Conservation Department (DNP) to survey, with camera traps, four reserves within Thailand, to answer our questions about carnivore interactions. The four study areas selected for this research span across the central latitudes of Thailand, including: Ta Phraya National Park, Don Yai Wildlife Sanctuary, Khao Ang Rue Nai Wildlife Sanctuary (KARN), Don Yai Wildlife Sanctuary and Huai Kha Khaeng Wildlife Sanctuary (HKK). In October 2009 we began our survey efforts in Ta Phraya National Park and Khao Ang Rue Nai Wildlife Sanctuary. This effort resulted in 62 camera deployments in Ta Phraya National Park and 38 deployments in KARN totaling 970 camera nights with 0.241 detections per camera night in KARN. We continued our efforts in November 2010 in Huai Kha Khaeng Wildlife Sanctuary resulting in 130 camera deployments totaling 3,231 camera nights with 6.19 detections per camera night. Finally, in December 2011, we returned to Ta Phraya National Park to finish our survey efforts, as well as survey Don Yai Wildlife Sanctuary. The final year of surveying resulted in 42 additional camera deployments in Ta Phraya National Park totaling 104 deployments throughout the study with 2,514 camera nights with 0.380 detections per camera night. In February 2012, 21 camera locations were surveyed in Don Yai Wildlife Sanctuary totaling 629 camera trap nights with 0.616 detections per camera night. One to two day trainings were held at each reserve to teach the use of GPSs, techniques of camera trapping and the