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Recent sightings of fishing cats in Thailand

Formerly occurring widely over most of Southeast Asia, fishing cats *Prionailurus viverrinus* now appear to have the second most restricted range of wild felids in the region. We conducted surveys for fishing cats in four locations in peninsular Thailand between 2003 and 2009. Survey methods consisted of interviews, searches for signs and the use of automated camera traps. We documented fishing cats at Thale Noi Non-hunting Area and Khao Sam Roi Yot National Park and found no evidence of the species at Klong Saeng and Maenam Pachi Wildlife Sanctuaries. Priority actions for conserving fishing cats include surveying additional areas of potential occurrence and working with communities to disrupt direct persecution of the species.

In late 2008 the status of fishing cats was raised from 'Vulnerable' to 'Endangered' on the IUCN Red List. International trade is controlled and the species is included in Appendix II of CITES. Frequent development, land conversion and over-fishing of the cats' wetland habitats have resulted in extensive habitat loss and population fragmentation throughout their range.

A recent comprehensive review of small felids in Southeast Asia (Povey et al. 2009) concluded that fishing cats have the second smallest range among the region's nine species of small cats. Range maps show that fishing cats are distributed from northern Thailand to the Isthmus of Kra; fishing cats may occur in southernmost Thailand and peninsular Malaysia (Nowell & Jackson 1996). Prior to this study, we could only find three credible records of fishing cats reported from Thailand in the last 15 years: from Khao Yai National Park (T. Redford, pers. comm.), Thale Noi Non-hunting Area (J. Murray, pers. comm.), and Kaeng Krachan National Park (D. Ngoprasert, pers. comm.).

The purpose of this paper is to report on the results of recent surveys for fishing cats in Thailand.

Methods

We attempted to determine the presence or absence of fishing cats at several sites by conducting semi-structured interviews with local residents and protected area staff, searching for signs (i.e., scats and tracks) and using camera traps. Interview surveys targeted local farmers, fishermen, cattle herders and hunters in order to gather general information about the occurrence of fishing cats, their prey species and other wildlife.

Sign surveys focused on stream and lake edges, mangrove forest areas, rice paddies and other sites where fishing cat occurrence was reported by local residents. Where detected, tracks thought to be those of fishing cats were measured and permanently recorded either by photograph or plaster cast. A representative number of scats from surveyed areas were collected and washed, with any discernable remains being retained for future analysis.

Camera-trap surveys focused on sites where we found likely signs of fishing cats, where locals had reported seeing fishing cats, and on those consistent with published descriptions of fishing cat habitat. Cameras were set in groups of 1-3, usually directed toward a staked chicken carcass used as bait. Camera traps were active from 1700-0800.

Surveys for Fishing Cats: 2003-2005

In 2003 we began a series of surveys with the objective of documenting fishing cats in areas where they were likely to occur based on habitat composition, historical records and expert opinion (Fig. 1). We started with surveys in Klong Saeng Wildlife Sanctuary (9.2°N, 98.7°E) where fishing cats had previously been recorded on the basis of the occurrence of tracks (Kanchanasaka 2001). From December 2003 through April 2004 we logged 528 camera trap-nights at 24 locations near the Ratchaprapa reservoir in the sanctuary. Neither camera traps nor our sign surveys provided evidence of fishing cats at Klong Saeng.

From May through September 2005 we carried out another series of surveys in Maenam Pachi Wildlife Sanctuary where local people reported fishing cat occurrence. In addition to extensive interviews and sign surveys, we walked 60 km of trails and streams searching for signs and logged 540 camera trap-nights at four locations. We did not find any evidence of fishing cats in Maenam Pachi.

Recent Records of Fishing Cat Occurrence in Thailand

Starting in May 2006, we conducted a series of interviews, sign surveys and camera-trap surveys at the Thale Noi Non-Hunting Area in peninsular Thailand. Thale Noi (7.71-8.02°N, 100.03-100.25°E) is part of a large inland estuarine system in Pattalung Province, Southern Thailand. The area is approximately 457 km^2 and includes Thailand's first RAMSAR site, Kuan Khi Sian, chartered in 1997. Extensive freshwater swamp forests surround the area's most recognizable feature, a large open-water lake. 'Kuans', small islands that occur in the swamp forest, provide habitat for a wide range of wetland species including fishing cats.

After documenting tracks consistent with those of fishing cats at several locations in the southern part of Thale Noi, we recorded a single male fishing cat on our camera traps (7.76°N, 100.16°E; Fig. 2) on 15 February 2007. The animal had swum about 10 m from shore to a 'shoal' of mud where we had placed the camera trap.

In December 2008 we began surveys near the southern end of Khao Sam Roi Yot National Park (12.08-12.31°N, 99.87-100.04°E), in Prachuap Khiri Khan Province. Khao Sam Roi Yot is a coastal protected area of 98 km^2 with marine and terrestrial components. The park's vegetation consists of scrubby mixed deciduous forest on karst formations, limited areas of mangrove and swamp forest, and active and fallow agricultural areas. Throughout the

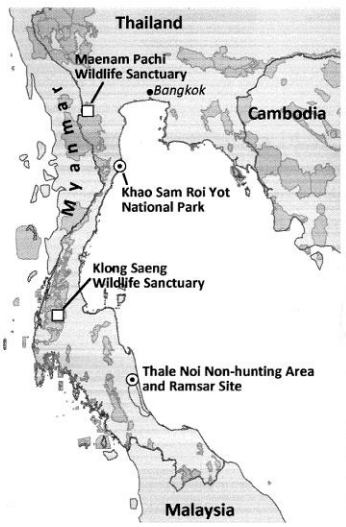

Fig. 1. Areas surveyed for fishing cats in Thailand. Sqaures = no fishing cats detected; circles = fishing cats detected. Grey shapes are protected areas.

Fig. 2. Male fishing cat captured in Thale Noi Non-Hunting Area on 15 February 2007 (Photo P. Cutter).

Fig. 3. Female fishing cat with a cub captured south of Khao Sam Roi Yot National Park on 6 January 2009 (Photo P. Cutter).

extensive agricultural areas, more structurally developed patches of palms, tamarinds and various other tree species appear to serve as patches of 'refuge' habitat for species such as fishing cats during the day.

On our first visit local residents reported encountering fishing cat tracks frequently at several locations inside and outside the park. We visited two residences at Kung Tanode village where two male fishing cats (reportedly siblings collected from a local rice field) were being kept in enclosures. Sign surveys at the location where the kittens were reportedly collected revealed copious tracks and scats of fishing cats left by at least two individuals (apparently an adult female and her kitten). After just two nights of camera trapping in this area, on 6 January 2009 we recorded a female fishing cat with her kitten (12.11°N, 99.94°E; Fig. 3). Subsequent camera-trap surveys and live captures (carried out as part of a concurrent study of fishing cat ecology) have documented at least 16 individuals using this area and numerous signs of reproduction, including the occurrence of young with adults and signs of current and previous lactation in females examined during captures.

Threats to Fishing Cats

Local attitudes towards fishing cats in the two areas with confirmed presence range from ambivalence to hostility. Fishing cats have been known to take chickens, which may be the chief motivation for direct threats such as hunting and poisoning that target this species. Hunting is mainly carried out through the use of snares along travel routes whereas poisoning is either intentional (carried out by poisoning chicken carcasses that cats are likely to eat around households) or the result of ingesting pesticides used to control invasive snails in local rice fields. Our interviews and field observations have revealed that fishing cats, otters *Lutra* spp., leopard cats *Prionailurus bengalensis*, large Indian civets *Viverra zibetha*, and common palm civets *Paradoxurus hermaphroditus* are all hunted for food or captured for the pet trade.

Indirect threats to fishing cats and other carnivores in the areas surveyed include habitat loss and its impact on prey populations. Habitat loss is primarily driven by the extensive conversion of natural habitat for plantations, paddies and shrimp-farming ponds. Where shrimp farming takes place, effluent waste water from these operations is routinely pumped into neighboring waterways or open fields, further disrupting natural systems. Prey populations are subject to overfishing, depletion of birds through the extensive use of mist nets, and indiscriminate snaring of a wide variety of species. Nylon fishing nets and mist nets discarded in lakes, waterways, and agricultural areas pose an additional threat to the area's wildlife.

Conservation Implications

The apparent absence of fishing cats from the two inland areas surveyed is consistent with a growing body of anecdotal evidence of local extinctions in areas where the species once occurrred. It is alarming that a great amount of general carnivore survey effort over the last 15 years has yielded only a handful of confirmed records of fishing cats. However, the occurrences reported here are encouraging in that they demonstrate that fishing cats appear to be capable of persisting in areas of high human activity and impact. We are hopeful that surveys in the near future will confirm the occurrence of fishing cats in similar coastal landscapes.

While resources for suppressing threats to fishing cats are limited, the fact that fishing cat home ranges can be relatively small (2-4 km^2 in this area; Passanan Cutter, unpubl. data) means that targeted efforts over relatively small areas may result in measurable benefits for local subpopulations.

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