

**Camera-trapping evidence of Large-spotted Civet  
(*Viverra megaspila*) in Xe Piane  
National Biodiversity Conservation Area (NBCA), Southern Lao PDR**

While conducting a rapid biological survey of Xe Piane NBCA during the months of January to April 1997, I obtained five photos of Large-spotted Civets by camera-trapping. These photos represent the first ever of this species in the wild. There continues to be a general lack of information on this species which was cause for SCHREIBER ET AL. (1989) to point out that field surveys to locate wild populations should be considered a priority. All of the photos clearly show the distinguishing dark flank spots and black dorsal stripe (Fig. 1) (Fig. 2) which are criteria DUCKWORTH (1994) cites as being most important in differentiating *V. megaspila* from Large Indian Civets (*Viverra zibetha*).

*V. megaspila* has an extensive range in Southeast Asia, occurring from central Burma through Cambodia, Lao PDR, Vietnam, Thailand and peninsular Malaysia (CORBET & HILL, 1992) (LEKAGUL & MCNEELY, 1977). Previous reports on the status and frequency of *V. megaspila* have been conflicting. LEKAGUL & MCNEELY (1997) considered the species common throughout its range but were unable to give information on ecology and behavior. DUCKWORTH (1994) considered the species “neither critically threatened or particularly localised” in Lao PDR based on 1993 surveys that produced two sightings of *V. megaspila* in Xe Piane NBCA and one in Phou Xang He NBCA. However, DUCKWORTH (1997) states that there have been no new records of the species in Lao PDR since the 1993 sightings. In Thailand, long-term carnivore studies in Huai Kha Khaeng Wildlife Sanctuary (RABINOWITZ, 1990) Khaeng Krachan National Park (GRASSMAN, 1996) and Khao Yai National Park (pers. observ.) have produced no confirmed reports of *V. megaspila*. RABINOWITZ & WALKER (1991) reported *V. megaspila* for Huai Kha Khaeng; however, this was based on previous sanctuary staff records and not direct evidence in 1987–1990 study.

I used Trailmaster 1500 Camera units, consisting of a transmitter and receiver which are placed across promising area in terms of animal traffic (e.g., trail, stream/river bed, water hole). The transmitter sends an infrared beam (invisible to mammals) to the receiver which, when broken, triggers the camera (placed in a third location) to photograph the area between the transmitter and receiver. This is an excellent passive surveying method which provides presence data on species and is particularly effective for nocturnal or reclusive species (GRIFFITHS & van SCHAİK, 1993). This method has been used effectively to census tigers in India (KARANTH, 1995) (KARANTH & HICHOLS, in press) and monitor forest animals in Indonesia (van SCHAİK & GRIFFITHS, 1996).

Previous records of *V. megaspila* indicate that this civet is a habitat generalist, using both good and degraded semi-evergreen forest and dry dipterocarp forest (DUCKWORTH, 1994). My camera trapping results agree with this. In the southern portion of Xe Piane’s “Main Block” which is dominated by mature semi-evergreen forest, 69 trap-nights produced three photos of *V. megaspila*, and 49 trap-nights in the southern “Dong Kalo” portion of



Figure 1. Large spotted Civet *Viverra megaspila* in semi-evergreen forest in southern portion of main forest block, Xe Pian, NBCA.

Xe Pian produced the other two photos. The Dong Kalo area is markedly drier than the main block as it is dominated by open, dry dipterocarp forest. All five *V. megaspila* photos are either in or within 20 m of stream/river beds. Camera-trapping was conducted during the driest months of the year when most streams and rivers were reduced to standing pools. As most animals congregate near these water sources, camera-trap effort was highest in those areas. This explains the greater number of *V. megaspila* photos in these locations.

To increase the attractiveness of some camera-trap locations, natural baits such as raw fish, bananas or a combination of both were used. *V. megaspila* photos were from only those locations which had been baited.

As *V. megaspila* and *V. zibetha* are approximately the same size, both terrestrial, and use the same habitats, it is likely they are direct competitors when sharing the same area. One would expect therefore that an abundance of one species is at the expense of the other. This appears to be what the camera-trapping results indicate. Of a total of 200 camera-trap nights for the entire Xe Pian NBCA survey, five photos of *V. megaspila* were obtained but only one photo of *V. zibetha*. The *V. zibetha* photo came from the southern portion of the Main Block not far from where *V. megaspila* photos were obtained. It appears that in Xe Pian NBCA, *V. megaspila* may occur in greater numbers than *V. zibetha*. This contrasts greatly with other protected areas in the region [e.g., Khao Yai National Park, Thailand (pers. observ.), Khaeng Krachan National Park, Thailand (L.

Grassman, pers. comm.), Huai Kha Khaeng Wildlife Sanctuary, Thailand (RABINOWITZ 1990)] where populations of *V. zibetha* appear to be larger than those of *V. megaspila*.

More ecological information on both species is still needed. This would help to determine if indeed direct competition between these two species is the cause for one species consistently being abundant at the expense of the other.

## REFERENCES

- CORBET, G. B. AND J. E. HILL. 1992. The mammals of the Indomalayan region. Natural History Museum Publications & Oxford University Press, Oxford.
- DUCKWORTH, J. W. 1994. Field observations of Large-spotted civet *Viverra megaspila* in Laos with notes on the identification of the species. *Small Carnivore Conserv.* 11: 1–3.
- DUCKWORTH, J. W. 1997. Small carnivores in Laos: A status review with notes on ecology, behaviour and conservation. *Small Carnivore Conserv.* 16: 1–21.
- GRASSMAN, L. I., Jr. 1996. Ecology and behavior of four sympatric carnivore species (Mammalia: *Carnivora*) in Khaeng Krachan National Park, Thailand. M.S. Thesis. Kasetsart University, Bangkok, Thailand.
- KARANTH, U. K. 1995. Estimating tiger *Panthera tigris* populations from camera-trap data using capture-recapture models. *Biol. Conserv.* 71: 333–338.
- KARANTH, U. K. AND J. D. NICHOLS, in press. Estimation of tiger densities using photographic captures and recaptures. *Ecology*.
- LEKAGUL, B. AND J. A. MCNEELY. 1977. *Mammals of Thailand*. Association for the Conservation of Wildlife, Bangkok.
- SCHREIBER, A., R. WIRTH, M. RIFFEL, AND H. VANROMPAEY. 1989. *Weasels, civets, mongooses and their relatives: an action plan for the conservation of the mustelids and viverrids*. IUCN, Gland.
- RABINOWITZ, A. 1990. Research on the carnivore community in a dry tropical forest mosaic in Huai Kha Khaeng Wildlife Sanctuary, Thailand, 1987–1990. Scientific Report. Wildlife Conservation International, New York Zoological Society, Bronx, New York.
- RABINOWITZ, A. AND S. R. WALKER. 1991. The carnivore community in a dry tropical forest mosaic in Huai Kha Khaeng Wildlife Sanctuary, Thailand. *J. Trop. Ecol.* 7: 27–47.
- van SCHAIK, C. P. AND M. GRIFFITHS. 1996. Activity periods of Indonesian rain forest animals. *Biotropica*, 28(1): 105–112.

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