

Notes on diet, habituation and sociality of Yellow-throated Marten *Martes flavigula*

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Abstract

Artificial provisioning of a wild Asian Black Bear *Ursus thibetanus* with boiled rice at Khao Yai national park, Thailand, resulted in regular visits by a small group of Yellow-throated Martens *Martes flavigula*. These animals ate large quantities of the rice, habituated to high levels of close human noise and motion, and were enjoyed by many visiting members of the general public. Although often described as a voracious predator, the species may in fact eat significant amounts of vegetable matter. Group foraging may be usual across its range although no rigorous study has yet been undertaken. The species could be a valuable tool in the eternal challenge of consolidating environmental awareness among the general public of Southeast Asia, given that most evergreen forest mammals are hard to see.

Keywords: artificial feeding, group size, protected areas, public awareness, Thailand

Introduction

The martens *Martes* are generally considered to be voracious predators of live animals, with Prater (1971) describing Yellow-throated Marten *M. flavigula* as “a real menace to all the small creatures living in their neighbourhood. In the treetops they hunt squirrels and birds, raid nests for eggs and young. On the ground their usual quarry is rats and mice, hares, pheasants, and partridges, but they are bold enough to attack larger defenceless animals such as young deer. When pressed for food, carrion, snakes and lizards, and even insects are eaten. Their diet is varied with fruit and honey from flowers”. Pocock (1941) cited, without cautioning its reliability, the local reports given to J. M. D. Mackenzie (in Wroughton 1916) that “three or four will attack an unarmed man”, and although this now seems extremely fanciful, it indicates the popular image of the genus. Hence, the following observation of Yellow-throated Martens eating rice seems worthy of record, particularly given the high human activity at the feeding site.

Observations

In mid-December 2004, JWKP heard a report of an Asian Black Bear *Ursus thibetanus* readily observable at dusk at the Khao Khieo guard-post, Khao Yai National Park, Thailand (about 14°20'14"N, 101°26'05"E). This site lies amid submontane broad-leaved evergreen forest (Smitinand 1968) at about 1350 m altitude. Asian Black Bear has undergone major declines in most of South-East Asia (e.g., Duckworth *et al.* 1999, MOSTE 2000, Lynam *et al.* 2006, Steinmetz *et al.* 2006), such that few of today's wildlife surveyors and conservationists have ever seen the species in the wild. Hence, JWKP went to investigate the situation on 31 December 2004, arriving at about 17h30. The guards at the post reported that the bear was observed daily, coming in to eat the large quantities of boiled white rice they placed on the turf between the station huts and the forest edge. As well as the bear, which emerged well after it got dark, for much of the 40 minutes of daylight after JWKP's arrival, three Yellow-throated Martens were on view, avidly consuming the rice. The station's staff were used to the animals' presence and between them they continued to shout to each other between the buildings, play an uproarious game of cards, watch a blaring television, clatter pans and stride noisily around the compound; while JWKP's two small daughters exclaimed eagerly, repeatedly and noisily at the sight of the animals. These loud, near-continuous, noises, accompanied by much

movement, gave no concern to the martens, which regularly came within 10–15 metres of the station's large glass window.

Shortly afterwards, when next passing through Bangkok, JWD was equally keen to avail of this unusual opportunity to see a wild bear in South-East Asia, and with JWKP visited the guard station on 14 January 2005. On arrival at 17h50, three martens were eating at the piles of cooked rice (several large pans full, spread over several square metres of short turf; about 15 metres from the forest edge). As well as eating it on the spot, the martens also carried off and ate large clags of rice. Some were taken into adjacent tree crowns, presumably to allow greater safety. The martens were almost continually in view until dusk (18h20), and intermittently visited the rice-piles until at least 18h50, well into darkness. As before, they were unconcerned by the loud, active, presence of over a dozen people. Twice individual martens came within 20 feet (6–7 m) of the glass window, at least once while chasing a rodent. Station staff reported the daily presence of the martens, and that they could be present at any of the daylight hours. Mounted in the station were numerous high-quality photographs of them at the rice, taken by visiting photographers. Station staff confirmed that no baits other than rice were being provided.

Discussion

Diet

Yellow-throated Marten's diet remains little-studied, and indeed Grassman *et al.* (2005) traced no previous ecological study of the species. Its diet has been characterised as “rats, mice, hares, snakes, lizards, eggs and ground birds...a pest to keepers of poultry,...fawns of...muntjac...reported to kill native house-cats...said to feed upon human corpses...probably...feeds on fruits as well [and has a] fondness for nectar” (Pocock 1941); “squirrels, birds, snakes and lizards, though insects, eggs, frogs, fruit, nectar and berries are also taken. They seem to particularly favor honey” (Lekagul & McNeely 1977); “will kill and eat any small bird or mammal which they can overcome”, also partly frugivorous and insectivorous, specifically cicadas, apricots, *Viburnum*, honey and larvae of wild bees (Roberts 1977); “a wide range of small vertebrates and invertebrates, bees' nests and nectar” (Payne *et al.* 1985); Himalayan Tahr *Hemitragus jemlahicus*, flying squirrels *Petaurista* spp., reptiles and insects, based on faecal analysis, with observations of chases of Tahr, Brown Musk Deer *Moschus chrysogaster*, Indian Goral *Naemorhedus goral* and a pheasant *Lophura*

leucomelana (Sathyakumar 1999). Allen (1938) conceded that “evidently its predaceous habits of diet are modified by a liking for sweets”, referring to nectar and honey. Parr (2003) boiled this down to “diverse, omnivorous, diet”. We have not traced reference to Yellow-throated Marten coming to food provisioning sites, but the allied Pine Marten *M. martes* is well known to visit bird-tables (where householders put out food for wild birds) in Scotland, UK (Velander 1991). Indeed, some internet tourism advertisements list, as a tourist attraction for Scotland, the opportunity to observe Pine Martens at bird tables, where they are reputedly particularly fond of jam sandwiches and peanut butter (Internet search in May 2005).

Social structure

Grassman *et al.* (2005) called for research into the social structure of Yellow-throated Martens, believing that their several records of animals in groups of two contravene the general pattern for solitary living in mustelids, including *Martes*, proposed by Powell (1979). However, Powell’s conclusion considered information about *Martes* only from Holarctic species. By contrast, the tropical *M. flavigula* does not seem particularly solitary; as well as references in Grassman *et al.* (2005) to groups of two, Duckworth (1997) found duos to be regular in Laos, Pocock (1941) considered that the species hunted “usually in couples” in India and adjacent countries, and JWKP has observed duos as follows: crossing a road in mid-afternoon in Khlong Phraya Wildlife Sanctuary, peninsular Thailand, in 1988; chasing squirrels through the mid-storey in Phu Khieo Wildlife Sanctuary, north-east Thailand, in February 1992; and crossing a road in mid-morning in Kaeng Krachan National Park, west Thailand, in January 2006. Even groups of three, as here, are not unusual; JWD watched such a group in the Hukaung Valley, Myanmar, at 26°35'13"N, 96°17'39"E, foraging on a river sand-bar and in adjacent elephant-grass over 12h50–13h05 on 25 Dec 2005; Sathyakumar (1999) referred to four sightings (of 16 contacts with the species) of trios (and only five singles), while Pocock (1941), Tun Yin (1967), Medway (1969), Prater (1971), Lekagul & McNeely (1977) and Payne *et al.* (1985) all referred to groups of more than two as not unusual; J. M. D. Mackenzie (in Wroughton 1916) personally observed a group of five hunting together. By contrast, Roberts (1977) assessed the species as “generally...solitary”, although it is unclear upon how many direct observations this was based.

Potential in environmental education

Yellow-throated Marten is often credited with fearlessness (“two specimens feeding in a rhododendron bush paid no heed to a stream of [people] passing along a track only 40 yards below them”; Pocock 1941), and in many modern sightings animals appear neither particularly vigilant nor quick to flush when they do detect people (pers. obs.). It has a reputation for being readily tamed (Pocock 1941), doubtless because it is “inquisitive and bold” (Roberts 1977). Hence, this habituation at Khao Yai to continuous human presence accompanied with loud noise is perhaps not surprising. Despite this, baiting wild individuals of the species into areas of high human activity does not seem to have been placed on record. Doing so could help meet one of the key conservation challenges in forested South-East Asia: the general rarity of sightings of mammals (other than bats, squirrels and primates, and in some areas, deer) by non-specialist visitors to forest protected areas. With rapidly urbanising populations and increasing disposable income, protected areas in South-East Asia host a large

number of visitors every year; Khao Yai received about 944,940 visitors in 1992 (Srikosamatara & Suteethorn 1994) and more recently over 1.2 million visitors were estimated per year by Srikosamatara & Brockelman (2002). These protected areas already play a valuable role in sparking and consolidating environmental consciousness among the countries’ citizens, an essential process if large areas of natural habitat are to survive. It is likely that with more sightings of ‘wild animals’, protected areas could provide considerably greater pleasure to visitors, especially among children and youths.

Baiting for animals, using species-appropriate food, could help address the fundamental challenge that even in South-East Asian closed forests with natural animal densities, day-time sightings of most mammals will always be rare. However, any baiting should be preceded by careful feasibility assessment: for example, it is questionable whether luring bears into human-use areas using human foods is wise, particularly considering the conflicts between wild bears and people in North America that result from bears scavenging human food (e.g., Wilson *et al.* 2005). Also, it is presumably unhealthy for martens to eat large quantities of cooked rice. Even in heavily-hunted parts of South-East Asia such as Laos and Vietnam, Yellow-throated Marten remains common and under no particular threat (Duckworth 1997, Long & Minh Hoang 2006, Robertson *et al.* in prep.). It is also widespread and/or readily observed in Cambodia (J. Walston *in litt.* 2006), Thailand (where known from Khao Yai already; Lynam *et al.* 2006, Steinmetz *et al.* 2006), Myanmar (Than Zaw *et al.* in prep.) and Sumatra (Holden 2006), and is widespread and evidently relatively common in the Himalayas (Choudhury 1999, Datta 1999, Sathyakumar 1999). Hence, many protected areas host this species, and, as with Pine Martens in Scotland (see above) it could be an ideal animal to show the public: beautiful, highly active, charismatic, and exotic-looking.

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References

- Allen, G. M. 1938. *Mammals of China and Mongolia*, vol. 1. American Museum of Natural History, New York, USA.
- Choudhury, A. 1999. Mustelids, viverrids and herpestids of northeastern India. Pp. 39–42 in Hussain, S. A. (ed.) *ENVIS Bulletin: wildlife and protected areas. Mustelids, viverrids and herpestids of India*. Wildlife Institute of India, Dehra Dun, India.
- Datta, A. 1999. Small carnivores in two protected areas of Arunachal Pradesh. *Journal of Bombay Natural History Society* 96: 399–404.
- Duckworth, J. W. 1997. Small carnivores in Laos: a status review with notes on ecology, behaviour and conservation. *Small Carnivore Conservation* 16: 1–21.
- Duckworth, J. W., Timmins, R. J., Khounboline, K., Salter, R. E. & Davidson, P. 1999. Large mammals. Pp. 161–220 in Duckworth, J. W., Salter, R. E. & Khounboline, K. (compilers), *Wildlife in Lao PDR: 1999 Status Report*. IUCN–The World Conservation Union / Wildlife Conservation Society / Centre for Protected Areas and Watershed Management, Vientiane.
- Grassman, L. I., Jr, Tewes, M. E. & Silvy, N. J. 2005. Ranging, habitat use and activity patterns of Binturong *Arctictis binturong* and Yellow-throated Marten *Martes flavigula* in north-central Thailand. *Wildlife Biology* 11: 49–57.

- Holden, J. 2006. Small carnivores in Central Sumatra. *Small Carnivore Conservation* 34&35: 35–38.
- Lekagul, B. & McNeely, J. A. 1977. *Mammals of Thailand*. Association for the Conservation of Wildlife, Bangkok.
- Long, B. & Minh Hoang 2006. Recent records of and notes on the conservation of small carnivores in Quang Nam province, central Vietnam. *Small Carnivore Conservation* 34&35: 39–46.
- Lynam, A. J., Round, P. D. & Brockelman, W. Y. 2006. *Status of birds and large mammals in Thailand's Dong Phrayayen–Khao Yai Forest Complex*. Wildlife Conservation Society and Biodiversity Research and Training (BRT) Programme, Bangkok.
- Medway, Lord 1969. *The wild mammals of Malaya and offshore islands including Singapore*. Oxford University Press, Kuala Lumpur.
- [MOSTE] Ministry of Science, Technology and Environment 2000. *Red Book of Vietnam*, vol. 1: Animals. Science and Technology Publishing House, Hanoi.
- Parr, J. W. K. 2003. *A guide to the large mammals of Thailand*. WWF and World Bank, [Bangkok].
- Payne, J., Francis, C. M. & Phillipps, K. 1985. *A field guide to the mammals of Borneo*. The Sabah Society with World Wildlife Fund Malaysia, Kota Kinabalu, Sabah, Malaysia, and Kuala Lumpur.
- Pocock, R. I. 1941. *The Fauna of British India, Including Ceylon and Burma. Mammalia*, 2nd edition, vol. 2. Taylor & Francis, London.
- Powell, R. A. 1979. Mustelid spacing patterns: variations on a theme by *Mustela*. *Zeitschrift für Tierpsychologie* 50: 153–165.
- Prater, S. H. 1971. *The book of Indian animals*, 3rd edition (as updated 1993). Bombay Natural History Society and Oxford University Press, Mumbai, India.
- Robertson, S. *et al.* in prep. The distribution and status of small carnivores in Vietnam.
- Roberts, T. J. 1997. *The mammals of Pakistan*. Oxford University Press, Oxford, UK.
- Sathyakumar, S. 1999. Mustelids and viverrids of the northwestern and western Himalayas. Pp. 39–42 in Hussain, S. A. (ed.) *ENVIS Bulletin: wildlife and protected areas. Mustelids, viverrids and herpestids of India*. Wildlife Institute of India, Dehra Dun, India.
- Smitinand, T. 1968. Vegetation of Khao Yai national park. *Natural History Bulletin of the Siam Society* 22: 289–305.
- Srikosamatara, S. & Brockelman, W. Y. 2002. Conservation of protected areas in Thailand: a diversity of problems, a diversity of solutions. Pp. 218–231 in Terborgh, J., van Schaik, C., Davenport, L. & Rao, M. (eds) *Making parks work: strategies for preserving tropical nature*. Island Press, Washington, DC.
- Srikosamatara, S. & Suteethorn, V. 1994. Wildlife conservation along the Thai–Lao border. *Natural History Bulletin of the Siam Society* 42: 3–21.
- Steinmetz, R., Chutipong, W. & Seuaturien, N. 2006. Collaborating to conserve large mammals in Southeast Asia. *Conservation Biology* 20: 1391–1401.
- Than Zaw *et al.* in prep. Status and distribution of small carnivores in Myanmar.
- Tun Yin 1967. *Wild animals of Burma*. Rangoon Gazette, Rangoon.
- Velander, K. A. 1991. Pine Marten *Martes martes*. Pp. 368–376 in Corbet, G. B. & Harris, S. (eds), *The handbook of British Mammals*, 3rd edition. Blackwell Scientific Publications, Oxford, UK.
- Wilson, S. M., Madel, M. J., Mattson, D. J., Graham, J. M., Burchfield, J. A. & Belsky, J. M. 2005. Natural landscape features, human-related attractants, and conflict hotspots: a spatial analysis of human-Grizzly Bear conflicts. *Ursus* 16: 117–129.
- Wroughton, R. C. 1916. Bombay Natural History Society's Mammal Survey of India, Burma and Ceylon. N° 25. Chin Hills. *Journal of the Bombay Natural History Society* 24: 758–773.

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