

## ARTICLE

### ASPECTS OF PREYING BEHAVIOUR OF SMOOTH-COATED OTTERS *Lutrogale Perspicillata* FROM SOUTHEAST ASIA

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#### ABSTRACT

Some observations on the preying behaviour of *Lutrogale perspicillata* like group hunting, or interactions with other species are presented.

Keywords: otter, *Lutrogale perspicillata*, commensalism, preying behaviour, group hunting

#### MALAYSIA

On 4 November 1993, we (BvH, BO) visited Kuala Selangor Nature Park, Peninsular Malaysia, a 240 ha conservation area in former mangrove forest managed by the Malaysian Nature Society. About 17.30h just before sunset, we observed from the hide at the small lake a group of eight Smooth-coated otters *Lutrogale perspicillata* foraging in the creek. The otter party cooperated very efficiently in chasing their prey. Two egrets, a heron and a kingfisher associated with the otter group. The birds benefited from the smaller fish chased ashore. Once the Great egret attempted to steal prey from an otter.

Kuala Selangor (approx. 3°21' N, 101°17' E) is a system of artificial and natural creeks and lakes created in 1987-1989 in logged-over mangrove forest for conservation, environmental education, recreation and tourism. At low tide strips of mud are exposed along the banks between the water edge and the vegetation. Arriving just after a rainshower, the sky was overcast during the observation, but visibility was excellent. We used 10\*25 binoculars and spent about 12 or 15 minutes observing the animals from a distance of 30-60 m foraging over a distance of about 80 m, until the otters disappeared around a bend in the creek. It was an incidental event while on a recreational excursion.

#### Coordinated Group Feeding

Repeatedly the otter party spread out in a single, slightly V- shaped line, pointing in the direction of movement and nearly as wide as the creek. The largest individuals occupied the middle section. In this formation the otters undulated wildly through the creek, causing panic-stricken fish to jump out of the water a few metres ahead. After two or three minutes, the otter at the point of the pack dived and disappeared, only to surface seconds later with a fish for about one-third in its muzzle. Instantaneously, the whole pack followed that example, a while later surfacing one after the other, many with a fish

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in the snout. The otters then moved ashore and consumed the fish on the muddy part of the bank. The otters tossed the fish up a little and swallowed it head-first in one piece. Prey handling on the creek's bank took no more than 10 seconds. We did not observe defaecation. Soon the otters started with a plunge and spread out again for the next sortie sweeping the width of the creek.

### **Association with Other Species**

Commotion caused by the otter pack attracted a Great egret *Casmerodius albus* and two Intermediate egrets *Egretta intermedia* (both Ardeidae, Aves). When the otters appeared, the birds approached the hunting pack from some 25-40 m away, where they were standing or erect (bird behavioural terminology after HANCOCK and KUSHLAN (1984). The Great egret advanced first and moved almost simultaneously with the otters. The birds then followed the otters along the bank of the creek, running, hopping and charging after defenseless fish that had jumped on the exposed mud. In this manner the Great egret obtained at least two fishes. Once it attempted half-heartedly to steal a prey being handled by an otter, but without success. A Grey heron *Ardea cinerea* (Ardeidae) only reacted once when the otter group passed its position. Also a Stork-billed kingfisher *Pelargopsis capensis* (Alcedinidae) landed repeatedly on the mud to pick up disturbed crabs or possibly smaller stranded fish. All but the Grey heron, which were inattentive to the frenzy caused along the banks, followed the otters.

### **INDONESIA**

Another instance of bird-otter interaction was observed on 26 February 1994 on the north coast of West Java, Indonesia, at about 1,500 m inland from the actual seashore, close to the eastern bank of the Ciasem River (6°14' S, 107°42' E).

While we (RM, IRL) were surveying abandoned brackish water fishponds (tambak) for otter signs within a young mangrove plantation managed by the state-owned enterprise Perum Perhutani, four Smooth-coated otters were observed playing in a canal-shaped fishpond. As there was evidence of fresh spraints on the surrounding dike, we presume preceding hunting though we did not directly witness foraging. A single Collared kingfisher *Halcyon chloris* (Alcedinidae) perched on a branch about 1.5 m above the otter group. While the otters were playing in the fishpond (width 4 m, depth 0.5 m), the kingfisher always kept its head turned to the group, seemingly attentive. From a first observation distance of approximately 80 m the four otters approached to a final distance of about four metres, with the kingfisher following for half the stretch. Alternately hovering and perching, the Collared kingfisher was always attentive and oriented towards the otters, never more than two metres behind the group. The observation of the Smooth-coated otters lasted 20 minutes. After some ten minutes of interaction with the otters, the kingfisher lost interest, probably because of lack of further otter hunting, and flew away without any vocalization.

## DISCUSSION

Group feeding by otters has been reported (Bartels, 1934; 1937; Sody, 1940; Procter, 1963; Furuya, 1976; Chitampalli, 1978; Duplaix, 1980) and the ability of group hunting of *L. perspicillata* is used by Indian fishermen since centuries to drive fish into their nets (Gudger, 1927). But we do not know of any example of coordinated group feeding behaviour within otters, and only few cases of association between otters and other species have been published.

Interaction between kingfishers and otters was reported from South Africa (Boshoff, 1978), Surinam (Duplaix, 1980) and Thailand (Kruuk et al., 1993). In two cases kingfishers were reportedly in constant attendance with the otters (Boshoff, 1978; Kruuk et al., 1993), and once a kingfisher scavenged on fish scales left over from an otter's meal (Duplaix, 1980). Footprints, latrines with new and old spraints, and a holt proved the frequent use of the Javan site by *L. perspicillata*. Local forest rangers confirmed observations of the otter throughout the year. Hence a certain familiarity of *H. chloris* and possibly other bird species may be assumed, which may lead, possibly through learning, to a commensalism-like bird-otter interaction.

Although associations between egrets and other species, notably grazing cattle, are well known (e.g. Hancock and Kushlan, 1984), none are reported for the Great or Intermediate egret. We assume that the Intermediate egrets are attracted when seeing the flapping fish on the banks. The immediate reaction of the Great egret suggests the bird was familiar with the situation, directly associated the otter movements with potential food, and recognize the subsequent feeding opportunity.

In general, (smaller) animals that live (or are actively cooperating) in groups may benefit from group vigilance and collective defense (against predators). Grouping may help minimizing a predator's effect on the group, e.g., through compact clustering or confusing the attacker (Hamilton, 1971; selfish herd). However, such defences are unlikely explanations for the otters' behaviour: hardly any predators can harm otters in Malaysia and Indonesia (Melisch, 1995). Benefits in improved food source exploitation seem more likely explanations. Gittleman (1989), discussing advantages in food exploitation of carnivore group living, mentions improved chances of finding and catching prey, increasing diversity and size of prey and the successful competing for food (e.g., with scavengers). Furthermore, he refers to possible information exchange, teaching and learning, and more generally, to reproductive access to members of the other sex.

We assume that by spreading out nearly as wide as the creek, the otters may have swept the water body and concentrated prey in front of them. Wildly undulating through the water may have served to confuse and exhaust the prey. Together, these effects increase the otters' chances to locate and catch prey. Note that prey exploits grouping as a method to confuse predators, particularly in open habitat (Hamilton, 1971; Terborgh, 1990). Ironically, in this case a predator has used group hunting to confuse prey.

Advantage to the associating egrets and kingfishers is obvious: increased access to food. Besides, according to Lubis (1995) and Melisch (*in prep.*) there is no evidence of bird remains in otters' spraints from West Java, and South-east Asia, respectively. It is tempting to see a form of commensalism in these and other reported feeding associations

between otters and birds for shallow waters, but that judgement should wait for more field observations to confirm present anecdotal indications.

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