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Otter Records and Otter Conservation Perspectives in Andhra Pradesh, India

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Abstract: The distribution and status of smooth-coated otter (*Lutra perspicillata*) in Andhra Pradesh, India was assessed. A total of 74 sites in mangrove and estuarine habitats, estuarine habitats, riverine habitats, and along tanks and reservoirs were surveyed for the presence of otters. Thirty-five (47.3%) sites were otter positive, of which maximum sites were along tanks and in riverine habitats. Broad based conservation measures are proposed for long term sustenance of smooth coated-otters in the state.

Keywords: otter, *Lutra perspicillata*, status, India

INTRODUCTION

The smooth-coated otter (*Lutra perspicillata*) is one of the most endangered and threatened mammals of India (Tikader, 1983) and faces a great threat due to ever increasing human disturbance in preferred habitats. The smooth-coated otter is distributed throughout India from Himalayas southwards and has been reported from the states of Karnataka, Kerala, Andhra Pradesh, Madhya Pradesh, Maharashtra, Gujarat, Punjab, Himachal Pradesh, Uttar Pradesh, Bihar, West Bengal and Mizoram (Prater, 1971; Hussain and Choudhary, 1988; Hussain, 1993; Foster-Turley and Santiapillai, 1990). It is seen to inhabit large rivers and their associated tributaries, estuaries and coastal mangrove swamps, and requires undisturbed forest or scrub adjacent to the water (Mason, 1990).

Hussain (1993) reported the lack of information on the status of otter populations in India. According to Foster-Turley and Santiapillai (1990), all three species of otter present in India are more or less restricted to National Parks and Wildlife Sanctuaries and are threatened in many areas due to reduction in their prey biomass, poaching and habitat degradation. Little information exists on otter populations outside protected areas in India, and with this in mind a study was carried out to assess the distribution of smooth-coated otters in both protected and unprotected areas in Andhra Pradesh, India.

STUDY AREA AND METHODS

To ascertain the present status and distribution of smooth-coated otter in Andhra Pradesh, India, a survey was conducted covering coastal areas, wetlands, riverine habitats, perennial and non-perennial water tanks and other potential otter habitats. Surveys were conducted in selected tracts of the state after considering the distribution trends of the otter in the past. Otter presence or absence was recorded through direct and indirect evidence. During the surveys, care was taken to ascertain that all the study sites were of comparable size. In each habitat, group structure composition and habitat conditions were recorded. The relative status of otter populations at positive sites was estimated by a combination of visual records and indirect evidence. Depending on the relative density of the estimated otter population and occurrence of positive otter signs, the status of otter populations at these sites were categorised as abundant, normal or sparse. Interviews with local people and fishermen were also conducted to evaluate the distribution of the species.

RESULTS AND DISCUSSION

In Andhra Pradesh, the smooth-coated otter has a more or less patchy distribution, with the strongest population in the mangrove and estuarine habitat of East Godavari District within the limits and adjacent areas



Figure 1. Study area Andhra Pradesh, India. (click for larger version)

Of the 23 districts in the state, 10 had positive signs of otters, recorded at 35 sites (Table 1). All the other sites surveyed ($n=39$, 52.7%) remained negative with no evidence of otter occurrence. Regarding habitat, signs were registered most frequently around water tanks (14.9%), followed by riverine habitats (13.5%), mangrove and estuarine habitats (9.4%), reservoirs (6.8%) and estuaries (2.7%) (Table 2).

Table 1: Status of the smooth-coated otter (*Lutra perspicillata*) in Andhra Pradesh, India

S. No	District	Site	Habitat	No. of Groups	Group Size	Total Population	Status
1	East Godavari	Thallarevu	M & E	8	3 - 7	>125	Abundant
		Plantation	M & E	15	2 - 8	>135	Abundant
		Metlapalem	M & E	11	3 - 12	>150	Abundant
		Sarihaddu Kaluva	M & E	14	2 - 10	>200	Abundant
		Dindodivari Canal	M & E	13	2 - 12	>250	Abundant
		Kandikuppam	M & E	22	4 - 16	>450	Abundant
		Biccavole	T	3	2 - 4	>20	Sparse
		Ravulapalem	RB	4	3 - 12	>45	Sparse
		Narsapuram	T	8	2 - 8	>60	Normal
2	West Godavari	Adavi Kalanu	T	3	2 - 4	>20	Sparse
3	Krishna	Intheru	E	8 - 10	2 - 9	>70	Normal



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4	Guntur	Nizampatnam	M & E	10 - 15	5 - 10	>100	Normal
		Amaravathi	RB	5 - 10	3 - 5	>50	Normal
5	Kurnool	Manthralayam	RB	10 - 12	5 - 8	>150	Abundant
6	Adilabad	Kadam	R	10	5 - 10	>90	Normal
		Bajpeta	RB	4 - 6	3 - 10	>50	Sparse
		Tulasipeta	RB	4 - 6	3 - 10	>50	Sparse
		Adalithimmapuram	RB	4 - 7	3 - 15	>70	Normal
		Lanja Madugu	RB	4	4 - 6	>60	Normal
7	Karimnagar	Chennur	RB	5	3 - 6	>40	Sparse
		Upper Manair	R	7	5 - 8	>40	Sparse
		Lower Manair	R	5	4 - 6	>30	Sparse
		Shanigaram	T	3	3 - 6	>20	Sparse
		Dharmapuri	T	3	3 - 6	>20	Sparse
8	Khammam	Gaderu	T	5	2 - 4	>15	Sparse
		Madevpur	RB	4	2 - 6	>15	Sparse
9	Warangal	Kinnerasani	RB	5	6 - 10	>15	Sparse
		Rammapa	T	5	2 - 8	>50	Normal
		Lakhnaram	T	7	4 - 10	>60	Normal
		Pakhal	T	5	2 - 8	>50	Normal
10	Medak	Eturnagaram	T	8	6 - 10	>80	Normal
		Manjira	R	5	5 - 12	>70	Normal
		Singoor	R	5	2 - 8	>50	Sparse

Key : M & E - Mangrove and Estuarine Habitat, T - Tank, RB - River Bank, E - Estuarine Habitat, R - Reservoir

Table 2: Comparison of otter positive and negative sites in different habitats (n = 74 sites)

S.No.	Habitat Type	No. of Positive sites	%*	No. of Negative Sites	%*	Total % of Positive Sites
1	Mangroves and Estuaries	7	63.6	4	36.3	9.4
2	Tanks	11	57.8	8	42.1	14.9
3	River Banks	10	42.1	4	58.3	3.5
4	Estuarine	2	33.3	4	66.6	2.7
5	Reservoirs	5	35.7	9	64.2	6.7

* the percent value within each habitat

The number of groups sighted varied between 3 and 22. Groups varied between 2 and 16 individuals at the study sites, with total estimated populations ranging between 15 -450 animals. Regarding population status, 8 (22.9%) sites showed abundant distribution, 13 (37.1%) sites showed normal distribution, and 14 (40.0%) sites showed sparse distribution of otters.

The smooth-coated otter is abundantly distributed along the mangrove and estuarine habitats of East Godavari district with healthy population recorded from 6 sites. This can probably be attributed to increased prey availability during the tidal influxes. Similar observations elsewhere in the world ([Foster-Turley, 1992](#); [Chakraborti, 1993](#)) point out that prey availability is the main requirement for good populations in these types of habitats. Similar habitat is to be found in Nizampatanam, in Guntur district. Here, a rather large population of about 100 otters was also recorded ([Prasad, 1992](#)).

At estuarine habitats, where mangrove vegetation was sparse as a result of large scale clearance for development of aquaculture farms, such as Intheru, Pedapatnam and Kona in Krishna district, the otters were considered as normally distributed.

In the case of riverine habitats, distribution was abundant, with about 150 otters, only at Manthralayam, in the Kurnool district, downstream of the river Tungabhadra. At other sites (along the rivers Godavari and Krishna) populations ranged from normal to sparse. It was noted that the frequency of sightings of otters at these sites was higher with respect to their population density. This can be attributed to the availability of preferred prey along the river course and the adjacent paddy fields, as recorded at Ravulapalem in East Godavari District.

tanks are perennial and are connected to major rivers, or their tributaries, and are utilised by the State Fisheries Department for piscicultural activities. Availability of food and escape routes, in the form of numerous canals originating from these tanks and reservoirs make them good potential otter habitats. At Pakhal tank, though otters were seen, sightings were sporadic when compared to the sightings in the canal system associated with the tank.

Habitat suitability, as well as human disturbance factors, cannot be overlooked as factors affecting the utilisation patterns of these water tanks and their associated canals. Otters have been reported as completely missing from areas where a good population previously existed. This is mainly attributed to the increase in pollution levels and acidity in the waters of these regions. [Mason and Macdonald \(1989\)](#) described a direct correlation between water pH levels and otter usage and indicated that the Eurasian otter (*Lutra lutra*) avoided waters with low pH.

However, it is important to note that smooth-coated otters have tolerated a little alteration in their habitats (in the form of aquaculture and pisciculture farms) as shown by the populations existing at the mangrove and estuarine habitats in Andhra Pradesh, where they remain in high numbers compared to other habitats. This is mainly due to the availability of alternative food in the surrounding areas and the relative safety due to inaccessibility of habitat. Studies conducted by [Macdonald and Mason \(1983\)](#) and [Chehébar et al. \(1986\)](#) indicate that the otters have disappeared from areas where no suitable habitat remains, and when habitat destruction goes on the otters are compelled to make use of small reservoirs and canals with less disturbance, ample food and good vegetation cover, as found in the cases discussed by [Macdonald et al. \(1986\)](#) and [Melquist \(1984\)](#).

CONSERVATION PERSPECTIVE

Based on the survey, the following conservation measures will enhance the survivability of otters, both within and outside various protected areas in Andhra Pradesh:

- a. Control of habitat destruction by means of checking deforestation, promoting afforestation at highly degraded otter habitats and checking the removal of fallen trees near potential otter sites as these can serve as hiding sites;
- b. Checking overexploitation of resources by man, biotic interference and excessive piscicultural and aquacultural practices;
- c. Improvement of natural prey biomass in potential otter areas by implementing stringent management strategies;
- d. Control of poaching activities in potential otter sites by employing an additional task force;
- e. Creating awareness among the locals about the importance of otters as apex carnivores in the aquatic ecosystem through eco-development programmes in otter habitats.

In the aquatic ecosystem where it abounds, the otter represents an apex animal of the ecological pyramid. There is increasing realisation that small mammal conservation has taken a back seat to general conservation measures that emphasise large predator mammals. Keeping in view the Fishery/Wildlife and Wildlife/Man interface, such status surveys should be regularly taken up. The information reported herein should serve as base-line data for the future management and conservation needs of this endangered species.

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