



# **Status of Otters in Nepal**

**Submitted to**

**IUCN/SSC Asian Secretariat, Sri Lanka**

**Submitted by**

**Paras Acharya & Sunil L. Rajbhandari  
Tribhuvan University, Nepal**

**25 March 2011**

Status of Otters in Nepal: A Country Report submitted to IUCN/SSC Asian Secretariat, 2011

Otters are members of the mammalian family Mustelidae which lead a semi-aquatic life. They form the key indicator species of river basins and help in maintaining the environmental integrity of the river basins. Altogether 13 species of otter are found in the world of which 3 species are found in Nepal:

Eurasian otter *Lutra lutra*

Smooth-coated otter *Lutrogale perscipillata*

Oriental small-clawed otter *Aonyx cinerea*

## **Legal status**

Internationally *Lutra* is included in the IUCN NE category and in the Appendix I of CITES, *Lutrogale perscipillata* in the IUCN VU category and in the Appendix II of CITES and *Aonyx cinerea* in the IUCN LR category and in the Appendix II of CITES. Nepal is also a contracting member of CITES, Ramsar convention and Biodiversity convention, thus the provisions of these conventions will be helpful in strengthening the conservation efforts in protecting these mustelids. Although these species are not included in the protected list under the National Parks and Wildlife Conservation Act 1973, the act restricts to killing, hunting and capturing as well as imposition of rules and regulations to curb illegal trade. The amendment (2002) of the Aquatic Life Protection Act 1961 has given legal protection to 2 species of otter which gave an ample opportunity for the protection of common otter and the smooth-coated otter.

## **Distribution of otters**

Eurasian otter *Lutra*

It is distributed in mountain streams, rivers and lakes. There has been very little work available on its distribution in Nepal. The hill otter is essentially an otter of cold montane conditions and lives near streams and lakes (Prater, 1980). It is recorded from West Seti river and lake Rara of Rara National Park in the far western Nepal, Rupa and Begnas lakes of Pokhara valley in Central Nepal. They live in burrows and many are found near the banks of lakes which are covered with ferns (Acharya and Gurung, 1991).

Smooth-coated otter *Lutrogale perscipillata*

The smooth-coated otter has been reported as present in the major river basins of Nepal: Koshi, Narayani, Karnali and Mahakali (Shrestha, 2003). The distribution of the smooth-coated otter is poorly known. On the river Narayani, the status of the smooth-coated otter had been investigated by Evans et al (1985) in relation to fish distribution and otter predation upon them. These authors estimated that 8-10 family groups were present. More recently, otter signs have been also recorded on the river Rapti near its confluence with the river Narayani (Acharya, 1998). In Narayani river, the smooth-coated otters have been found to prefer along braided channels characterized by low current and depth separated from the main river course by high sandy bank. During the monsoon season,

Status of Otters in Nepal: A Country Report submitted to IUCN/SSC Asian Secretariat, 2011

the otters move to adjacent shallow channels and swamps as evident from lower number of otter signs due to higher river discharge and consequent submersion of riparian areas.

Oriental small-clawed otter *Aonyx cinerea*

Hodgson in 1839 has identified small-clawed otter from Nepal, China, Sikkim and Assam India. The distribution of this species is still unknown in Nepal.

## **Threats**

The population of otters is declining and fragmented into isolated population as a result of number of threats such as:

- i) Habitat loss and destruction due to grazing, sand and boulder extraction, illegal exploitation of natural resources, industrial pollution and barrage construction along Indo-Nepal border and large hydroelectric projects.
- ii) Overfishing in the major rivers with the use of large gill nets. The use of dynamite, electro-fishing and poisoning in wetlands have also posed a significant threat to its existence.

Eurasian otter *Lutra*

The common otter is the only species of concern for local conservation as significant number of otters are killed by traditional hunters from Humla and Jumla, who would sell their pelts in India. Yonzon, 1998 reports that about 5 otters were killed in Dhung Gad in West Seti river and pelt prices were as much as US\$ 150.00. The management of the proposed hydroelectric reservoir in the Seti river basin may lessen the impact of hunting due to more optimal habitat and better feeding ground that will be created for *Lutra*.

Illegal hunting for pelts is also a serious problem (NEF,1991) in Rupa and Begnas lakes. Otters are killed by i) trapping the animal using several nets ii) chasing the animal to exhaustion and iii) guns. The Gurungs from Simal Danda hunt otters for the pelt. The pelt of cub's costs about US\$ 1.00. At present, the pelt of an adult otter costs about US\$ 60.00 in Begans and Rupa lakes area.

Occasionally, hunters from Terai with dogs come. They walk along the banks of the lakes. The dogs keenly search the burrows. Once the burrow is located, dogs would chase the otters until it is cornered. The hunters would then kill the otter with a three-pronged spear (Agenda survival, 1991).

Yonzon, 2006 reports that there has been steady increase in wildlife crime in Nepal. At any given time, the traders have at least 10-15 otter skins with them. More than 2500 skins were seized in China, Nepal and India between 2000-2005 and indicates that it is only a tip of the iceberg on otter's sale.

### Smooth-coated otter *Lutrogale perscipillata*

The primary threats to the smooth-coated otters are increasing human disturbances through grazing, sand and boulder extraction, illegal exploitation of natural resources, industrial pollution and barrage construction along Indo-Nepal border.

ii) Overfishing in the major rivers with the use of large gill nets. The use of dynamite, electro-fishing and poisoning in wetlands have also posed a significant threat to its existence.

## Survey results

Very few surveys have been conducted to assess the status and distribution of otters in Nepal. A preliminary survey by Acharya in 1991 and 1996 in Rupa and Begnas lakes and a survey in Rapti river by the same author were conducted. The study on Rapti river indicated that the population of otters are confined within the small range near the confluence of Rapti and Narayani rivers due to high human pressures. Thapa, T. 2002 and Bhandari, J. 2008 conducted a preliminary survey in Karnali river. Recent study includes the status and distribution of smooth-coated otters in Narayani river by Acharya and Rajbhandari in 2008. The authors intend to conduct further detailed research on population status and habitats of *Lutrogale perscipillata* in Narayani river. The study on Narayani river showed that the population of *Lutrogale perscipillata* have been reduced within a range of 15 km along Gidda-Bhosarghat. This is attributed due to increasing human disturbances along most parts of the river and the construction of Gandak barrage.

## Recommendations for future research

### 1. Determination of status

There are very few studies on status of otters in different physiographic zones of Nepal. Identification of otter species and their co-existence with other otter species should be determined. Therefore, detailed surveys should be conducted in the river basins and lakes in order to determine the current distribution, status and factors affecting survival of 3 otter species, i.e. Eurasian otter *Lutra lutra*, smooth-coated otter *Lutrogale perscipillata* and oriental small-clawed otter *Aonyx cinerea*.

### 2. Investigation of habitats and population status

Information on habitats and population status is poorly known which is very crucial to ensure long-term conservation of otters. Thus, protected areas of Terai and mountain regions should initiate studies on ecology of otters focusing on habitats and populations. The activities of otters such as foraging, feeding, seasonal movement of its prey species, reproduction and genetic configuration in Narayani and Karnali rivers which are considered as prime habitats should be investigated.

### 3. Impacts of hydro-electric dams and barrages

The construction of major hydro-electric dams and barrages such as West Seti, Karnali and Narayani and Katarniya Ghat barrage in India have affected the otter populations.

The extent of impact by these dams should be investigated. In some cases, the creation of optimal habitats by construction of reservoir in West Seti is seen. This should also be looked upon by the concerned developmental agencies to maintain its population.

#### **4. Effects of industrial pollution**

The effluents of industries are being directly discharged into the Narayani river which is causing bioaccumulation of pollutants in prey-base and also causing loss of habitats of otters. The protected area needs to initiate research on the level of water pollution and its effects on the aquatic life including the otters.

### **Conservation initiatives**

The government of Nepal has established protected areas covering over 18% of the total area of the country under National Parks and Wildlife Conservation Act 1973. The act provides protection to the otters within the protected areas. The amendment to this act has approved the Buffer Zone Guidelines and Rules and Regulations which provides for the inclusion of buffer zones around the protected areas. Under this, the protected area also provides 30-50% of its earned revenue to the buffer zone to implement appropriate habitat and conservation activities to the protection of otters.

The amendments of Aquatic Animals Protection Act 1961 in 2002 by the government give provisions for protecting 2 species of otter *Lutra lutra* and *Lutrogale perscipillata* and emphasizes on the wetland conservation. This act plays an important role in protecting the otter population outside the protected area. Other relevant acts such as Soil and Water Conservation Act 1982, Water Resources Act 1992 and Electricity Act 1992 are also effective legal provisions to the conservation of otters.

The National Biodiversity Strategy 2002 of the government of Nepal prioritized the wetland ecosystem as an important habitat for the conservation of biodiversity and in maintaining environmental integrity. This can pave way to formulate the otter action plan of Nepal. The wetland conservation programs outline by the National Biodiversity Strategy 2002 will lead to the long-term protection of the otter population and its habitats.

The wetland policy 2003 of the government of Nepal emphasizes on the involvement of local people in the management of wetlands for its wide use and conservation of biodiversity that prevail in the wetland ecosystem. The major programs for the improvement of wetland habitats and awareness enhancement programs could play a significant role in strengthening the otter conservation in Nepal.

### **Proposed conservation actions**

#### **1. Public awareness programs**

A consistent and active conservation education program is required. It is strongly agreed that conservation education plays an important role in enhancing awareness and appreciation of the natural resources and must be implemented at all levels (primary to secondary schools). National school curricula on conservation should be developed by

teachers' associations, other non-governmental organizations and national education and environment ministry. But it must be supplemented by locally developed curricula that bring conservation issues close to home (WRI, 1992). In addition, it is necessary to improve the quality of the personnel who work directly with conservation education programs. Mass public awareness campaign should be undertaken to educate people, specifically fishermen inhabiting close to wetland habitats about the ecological role of otters and their habitats. Training programs are required for local park authorities such as rangers, game scouts etc. to train well on otter identification, field survey and their conservation. The trainings should be implemented once a year in all terai and mountain parks with the active support of WWF and IUCN.

## **2. Conserve adequate prey-base to otters**

At present, the wetlands and rivers are under tremendous pressure due to overfishing which is leading to scarcity of food to otters. The use of small mesh-sized nets is widespread in Nepal and these are used on a variety of net types such as gill nets, cast nets, drag nets and variety of local types. These nets are indiscriminate in their catches resulting in the removal of both adult breeding stock and young fingerlings from the population, thereby reducing the possibilities of future breeding and recruitment from the areas. Such activities need to be discouraged by the concerned authorities for the sake of providing large biomass to support otters.

## **3. Conserve otters outside protected areas**

Some of the wetlands and river basins outside the protected areas such as flood plains of Narayani, Rapti, Babai, Karnali and Bahahune Nala are also prime habitats for the otters which are under continuous threat from human disturbances. Such suitable habitats should be given priority for the protection of the otters by the parks and buffer zone institutions.

## **4. Monitoring of otter habitats**

The main otter habitats (hotspots) in all the river basins of the country should be identified followed by monitoring of otter bearing major habitats and its population.

## **5. Environmental Impact Assessment of major development projects**

The barrages which were built along international border with India have caused the loss of prime otter habitats and led to fragmentation of small isolated population as well as reducing of food availability. Therefore, all development projects including dam constructions while undergoing environmental impact assessment should also focus on likely effects on otters and other species. On the other hand, studies should also be conducted to see whether reservoirs constructed by hydroelectric projects can support otters and its prey base.

## **6. Otter conservation plan**

All the interested parties such as conservationists and concerned organizations must convince high protected area officials of the necessity of designing an efficient otter conservation plan in collaboration with a social development plan. The goal of conservation plan will not be sustained without the active support and cooperation of the

Status of Otters in Nepal: A Country Report submitted to IUCN/SSC Asian Secretariat, 2011

local people. Strong and active partnership with local communities is important in the habitat conservation of otters. Collaboration between government authorities and local communities in the process of long-term conservation of otters in protected areas and outside protected areas to develop priority actions in otter conservation is equally important.

### **7. Effects of fish migration to otters**

Studies should be carried out during the seasonal fish migration and its effects in the dispersal of the otters within the home range.

### **8. Effects of climate change to otters**

A study focusing on the effects of the climate change in the river basins and its likely threats to the otters should be initiated timely to address the otter conservation issues.

## **References**

1. Acharya P.M. 1997. Study of Otters in Begnas and Rupa lakes of Pokhara Valley in West. A first phase report to Nagao Environment Foundation (NEF), Japan. 7 pp.
2. Acharya, P.M. 1998. Survey of status and distribution of otters in Rapti river, Chitwan National Park, A report submitted to Otter Research Group, Japan, 10 pp.
3. Acharya P. 2006. Otter and wetland conservation in Nepal. In: Rimal N.N. (ed.) Water Resources, Security and Sustainability, SEEP Water, Kathmandu, Nepal. 144-149
4. Acharya P. M. and Gurung, J.B. 1994. A report on the status of common otter (*Lutra lutra*) in Rupa and Begnas lake Pokhara valley, Tiger Paper Regional Quarterly Bulletin on Wildlife and National Parks Management, V. XXI: No.2: 21-22.
5. Acharya P.M. and Rimal N. 2007. Sustainability: human well being and conservation of otters. Abstracts of the 11th Otter Colloquium, Hwacheon, South Korea, 25 pp.
6. Acharya P.M. 2000. otter Action plan Country report. A report submitted to IUCN. SSC otter Specialist Group, 11 pp.
7. Agenda Survival 1991. A Nepal Zoological Society Newsletter. Vol.1 (2,3,4).
8. Bhandari J. 2008, Status, Distribution and major threats to otter in Karnali National Park. Nepal. A Bachelo research report submitted to IOF. Pokhara, Tribhuvan university. 20 pp.
9. Conry J. Melisch R. and Chanin P. 1998. The distribution and status of common otter *Lutra lutra* in Asia- A preliminary review. IUCN Otter Species Group Bulletin. 15(1). 15-30.
10. Evans M. Heardman C., Houghton S. and Tiler C. 1985. An ecological study of the fish distribution and their predators particular the smooth coated otter *Lutrogale perspicillata*. A report submitted to the King Mahendar trust for Nature Conservation, Nepal. Edinburgh University Expedition to Nepal, 28 pp.
11. Foster- Turley P., Macdonald S. and Mason C. 1990. An action plan for their conservation. IUCN/SSC Otter Specialist Group. 126 pp.
12. Hussain S.A. 1999. Status of otter conservation in India. In: Envis Bulletin: Wildlife and Protected Areas, Vol. 2 (2). 92-97.

13. HMG Nepal 1997. National Parks and Wildlife Conservation Act 1973, Ministry of Law and Justice. Kathmandu.
14. NEF 1996. A Nagao Natural Environment Foundation (NEF) Newsletter, Issue No. 2. 12 pp.
15. Shrestha T.K. Wildlife of Nepal. Ms Bimala Shrestha, Kathmandu, Nepal, 720 pp. Thapa, T.B. 2002. Survey of smooth coated otter *Lutrogale perspicillata* in Karnali river of Royal Barsia National Park Nepal.
16. Yonzon P. 2006. Wildlife trade with focus to otters in Nepal. In training Workshop on Survey techniques and Monitoring otter Populations. Royal Chitwan national park. Nepal.
17. Yonzon.B. 1998. Baseline information on Wildlife of the West Seti river valley with emphasis on Birds and Mammals. A report submitted to West Seti hydroelectric project, SMEC Ltd. 17 pp.