

# THE OTTER AS AN UMBRELLA SPECIES IN CHINA

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## Abstract

*Various systems for evaluating the conservation of biological species stated that otter species in China are at a risk of disappearing. In order to rescue otter populations across China, it is high time to carry out remedial measures in terms of immense field surveys and ex-situ conservation programmes. Therefore this paper provides a brief overview of the current status of otter species in China.*

**Keywords:** *Anthropogenic threats, China, conservation, otter species, vulnerable*

## INTRODUCTION

Otters are one of the most amazing mammal species in the animal kingdom. They appear playful and slide along river banks, bounce items such as stones, spin around themselves, and chase their tails. Because of the adorable appearance of this animal it is also known as a symbol of ‘loyalty and honesty’ by some Native American tribes.

Their long slim bodies, flattened heads, short limbs with webbed feet, muscular tails, thick silky fur, and small eyes are all adaptations to semi-aquatic and aquatic life styles. Fish is the staple food of most otters but they will also take crayfish, birds, ducks, frogs, shellfish, clams and sea urchins etc. and even reptiles and small mammals (Wikipedia, n.d.; Zhang et al., 2014).

Otters can be used as a key indicator of healthy environments and water quality determines where otters inhabit. Foster-Turley (1990) stated that otters can be found in aquatic ecosystems of unpolluted, undisturbed bank sides with a good food supply. Moreover, previous studies have shown a positive correlation between otter signs and the percentage of vegetation cover (Khan et al., 2014). Droppings (spraints) and footprints are common signs of the presence of otters in a particular habitat (Link, 2005; Zhang et al., 2014; de Silva, 1991)

Otters are found in every continent except Australia and Antarctica (Foster-Turley, 1990) and there are five species of otter in Asia. Of the five species, three species can be found in China, i.e. Eurasian otter (*Lutra lutra*), smooth-coated otter (*Lutra perspicillata*) and Asian small-clawed otter (*Aonyx cinereus*) (de Silva, 2011; Zhang et al., 2014; Foster-Turley & Santiapillai, 1990). Recent investigations have unearthed fossils of a giant otter skull found in Yunnan province, China (Cleveland Museum of Natural History, 2017) which imply that otters existed abundantly in China around six million years ago. It is recorded that 1,360,000 otters lived in the Changbaishan mountain nature reserve in north-east China in 1975 but the population began to

decline in 1990 (Zhang et al., 2014). Nevertheless, China still considers them as a class II state key protected species since 1987 (Foster-Turley & Santiapillai, 1990).

### THE OTTER POPULATION POST 1987

Zhang et al. (2014) mention that the otter population in the Changbaishan area declined by 99% from 1975 to 2005, implying that otters are in a very vulnerable state in China and there has been a dramatic decline. Out of 22 provinces and 5 autonomous regions, otters were recorded in 12 provinces and 3 autonomous regions, although recent data shows that they are now recorded in 24 provinces and autonomous regions (Zhang & Daming, 2017)

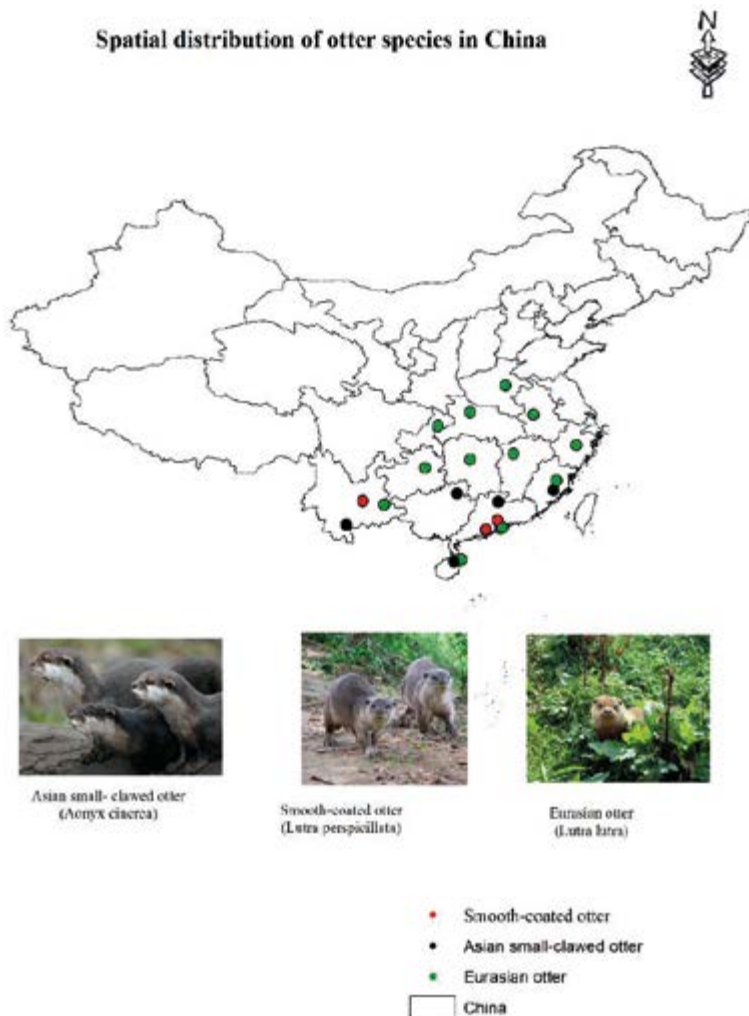


Figure 1: Spatial distribution of otter species in China

The map in Figure 1 depicts the spatial distribution of otter species in China based on previous studies (Zhang et al., 2014; Foster-Turley & Santiapillai, 1990; Hussain, Gupta & de Silva, 2011), but this does not take into account the data from the Second

National Wetland Inventory as quoted by **Zhang and Daming (2017)**. However, review of previous studies showed that otters had completely disappeared from some of their habitats, particularly in Xinjiang, Uygur region, and Lhalu wetland range (**Zhang et al., 2014; de Silva, 2011**). In Hong Kong the Asian small-clawed otter is believed to be extinct although there are populations of Eurasian otter still present.

**Zhang et al. (2016)** mention that there were a substantial number of Eurasian otters in north-east China, particularly in the basins of Songhua River and Ussuli River. They further mentioned that by 2004, the number of otters had been significantly reduced by 92%. **Shek et al. (2007)** also indicated that the Eurasian otter should be a protected species in Hong Kong as they were on the brink of extinction in China. Otter populations are even more vulnerable due to the continuing influence of anthropogenic threats. Habitat destruction as a result of urbanisation and infrastructural developments and the pelt trade are primary threats to otters (**Khan et al., 2014; de Silva, 2011; Lau et al., 2010; Hussain et al., 2011**).

**The IUCN Red List (2015)** classified 12 of the 13 otter species under categories of 'Vulnerable', 'Near Threatened' and 'Endangered'. Only the North American river otter (*Lontra canadensis*) is classified as 'Least Concern'. Moreover, the China Red Data Book listed otters as 'Vulnerable Species' while in the Wild Animals Protection Ordinance (Cap. 170) they are listed as being under statutory protection in Hong Kong. Furthermore, trade in otter is controlled under the animals and plants ordinance (Cap. 187) in Hong Kong (**Foster-Turley & Santiapillai, 1990**). Further, Taiwan listed the otter as an endangered species in 1990 (**Zhang et al., 2014**). Despite the fact that the otter is an umbrella species, it appears to be extremely vulnerable in China. Therefore, it is very important to identify the significant factors which contribute to the present spatial distribution of otters across China and carry out remedial measures to conserve the species. In this respect, otter species identification, surveys, and programmes on education and awareness of otters throughout the country have become very important aspects in otter conservation.

The International Otter Survival Fund (IOSF), Scotland, conducted a training workshop on Asian otters in China in 2016 with a view to forming a Chinese otter conservation network in order to gather data from various areas of China. Also, education and public awareness were given high priority during the workshop. This initiative provided a great opportunity to bring together the diverse institutions and organisations that work towards otter conservation in China. Furthermore, knowledge and strength acquired during the workshop encouraged otter specialists in China to become engaged in otter surveys in various regions. Most importantly, gathering information on otters' current status, identifying knowledge gaps of otter populations and hence future conservation of otters at regional and national levels would be the key roles of this otter network in China. Since otters are charismatic animals and also an umbrella species of healthy ecosystems, protecting and preserving them would simply lead to more protection and preservation of the aquatic ecosystems of China.

## CONCLUSIONS

The three otter species are at risk of disappearing from the Chinese territory due to continuing influence of anthropogenic threats. So it is necessary to implement appropriate conservative strategies to protect the remaining otter population in China.

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