

Spotted Seals Protections in Liaodong Bay of Bohai Sea

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Spotted seal (*Phoca largha*), is a coldwater marine mammal widely distributed in the North-Western Pacific Ocean, one of the second-class protected endangered animals in China and the only pinniped animal which naturally breed in Chinese waters. Liaodong Bay of Bohai Sea is the southernmost one of the eight breeding concentrations of spotted seals around the world. For better understanding and protecting spotted seals, the habitats, population dynamics and molecular genetic characteristics of spotted seals are investigated in this study in the period from 2002 to 2008. The results are as follows.

The haul out sites in the habitats of seals in the Bohai Sea include muddy beaches in Shuangtaizi River estuary region of Liaoning Province, shallow reefs around the Miaodao Islands of Shandong Province and tideland rocky beaches near Huping Island of Dalian City. The periods of seals appearing in habitats are from March to May in each year and the numbers of seals in these habitats fluctuate slightly.

Partial mtDNA sequence analysis shows that the genetic distance, haplotype and nucleotide diversities in control region of spotted seals from Liaodong Bay are relatively lower than those of spotted seals from Sea of Japan, indicating that the genetic diversity of spotted seals in Liaodong Bay is low.

The results of genetic diversity analysis by using microsatellite markers show that the average number of effective alleles and expected heterozygosity of spotted seals from Liaodong Bay population are at a low level, indicating that the population of Liaodong Bay spotted seal have



23-27 November • Manila, Philippines

suffered a decrease in genetic variability and the population probably suffers a degree of bottleneck effect in the past.

The present studies would provide useful data for the conservation and management of Liaodong Bay spotted seal colony.