

Potential habitats and potential source populations for otter reintroduction to Hokkaido, Japan

Takahiro MURAKAMI, Ryuichi MASUDA, Yasuto FURUKAWA, Alexey Y. OLEYNIKOV, and Sergey S. MAKEEV

The otter (*Lutra lutra*) in Hokkaido, Japan, was extinct in the late 20th century. Intensive trapping and habitat deterioration are two major causes of the extinction. The Shari Town Office in eastern Hokkaido is currently trying to recover the forest ecosystem including local extinct species, such as the otter. In order to evaluate the feasibility of the otter reintroduction, it is important to further understand the habitat potential and biological characteristics. Firstly, we conducted field surveys in Sakhalin, Primorsky region, and Khabarovsk region, and recorded locations of detected otter feces and footprints. Secondly, we calculated the river slope, distance from the coast, and river shapes around the otter track locations by GIS analysis based on Shuttle Radar Topography Mission (SRTM-3) data. Thirdly, we estimated potential otter habitats in Hokkaido by GIS analysis based on the SRTM-3 data and geographical conditions of the otter track locations in Russia. The result showed that the otter used various habitat types, including small stream, large rivers and coasts. It suggests the otter's adaptation to wide range of environments. In addition, based on records of archaeological remains and fur trades in Hokkaido, it was revealed that the otter was distributed through entire Hokkaido before the extinction. To more characterize this animal, ancient DNA on otter remains from Hokkaido was analyzed, and compared with those of the continental otters.