

## Observations on *Haliaeetus albicilla* and *Haliaeetus pelagicus* on Lake Udil in the Far East

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Observation and study of the behaviour of White-tailed Sea Eagle and Steller's Sea Eagle on Lake Udil were carried out by me in July-September 1989 and June-July 1990, when I was a member of the ornithological detachment of the Biology Faculty of Moscow State University.

Lake Udil lies East of Khabarovsk region, north of the Sichote-Alin mountains. It is 60km in length from the south-west to the north-east and its width varies from 4 to 12km. The mean depth is about 2.5-3m. Ten rivers flow into the lake. Its northern bank is low and resembles a swampy plain for many kilometres. The south-eastern bank is rocky, precipitous, covered with taiga, which consists of larch and other species (ash, poplar, silver fir, birch, bird-cherry, oak).

The climate in this district is sharply continental. There is a wide diversity of fish in this lake, such as Chum Salmon (*Oncorhynchus keta*), Pink Salmon (*O. gorbuscha*), Pike (*Esox lucius*), Sheat-fish (*Silurus glanis*), Banded Catfish (*Pseudobagrus fulvidraco*), Skygazer (*Erythroculter erythropterus*), Crucian Carp (*Carassius carassius*).

In the 1989 season we observed seven nesting pairs of the White-tailed Sea Eagle and in 1990 six nesting pairs. It is a migrant. The birds arrive in early spring, sometimes even before the rivers and lakes are free of ice, and leave in late autumn, when the lake is covered with ice. All the nests we found were on larches. These trees are convenient for observing the whole countryside: taiga, swamps and lake. The nest is situated as a rule at the top of the tree, on a branch or at the tip of the trunk. The pairs mate for life. Even in years when, due to unfavourable conditions, the birds cannot start to breed, the pair occupies its nest territory and protects it. The same behaviour is observed for Steller's Sea Eagle. Generally, there are many common features in the biology of these two species living on the lake. In the clutches we found, there were two eggs. Judging by the difference in age of the nestlings, incubation begins with the first egg and appears to last little more than one month. The young birds leave the nest (from my observations) between July 23 and August 3. The whole nesting period lasts approximately about 2.5 months.

The exclusive food (from our observations) of the White-tailed Sea Eagle is fish: Pike, Sheat-fish, Banded Catfish, Crucian Carp, Skygazer, only occasionally salmon: Chum Salmon, Pink Salmon. My observations do not confirm that salmon form the main nutrition of the Sea Eagles, although some authors, for example Dementyev, state that in the Far East salmon are their main summer food. The hunting territories of the Sea Eagles are not large, perhaps because of the abundance of fish in the lake. The small size of these territories permits observation of the birds even without the help of field-glasses. The birds search for prey by alternating soaring and active flight. We noted one interesting tactic in the hunting behaviour of both species of Sea Eagle: if the eagle cannot catch a fish in 40-50 minutes of active search, it usually selects some tree, bush, or stump on the bank with a good view over the water, from which perch it continues to look out for prey. When it spies a fish, it launches its attack. There is a clear impression that the bird exactly measures and regulates its forces so that when it feels that it hardly has the strength to return with a heavy prey to the nest, it changes its hunting tactics from active search to passive watching from a perch near the water.

The Steller's Sea Eagle is the common bird of Lake Udil. We found 20 nesting pairs in 1989 and 21 in 1990 on its banks. Juvenile birds were also observed. This population is migratory; in winter the birds fly further south, to the sea coast.

A pair of Steller's Sea Eagle uses the same nest territory every year. The birds appear on the territory at the beginning of March. Copulation takes place on the nest. All the nests we found were on larches. One pair may have about three nests, built in different years within the territory. The average diameter of the nest is 1.8m. The nests were situated about 400m from the edge of the lake. A bird can see the whole countryside while sitting in the nest. It is interesting that the nests of Steller's Sea Eagle are in general made of thinner branches than those of the White-tailed Sea Eagle. There are usually two eggs in the clutch. We observed one nest with three eggs in 1989. All three chicks hatched and safely fledged. The chicks usually hatch at the beginning of June. The young Steller's Sea Eagles leave the nest at the beginning of August.

According to our observations the reproductive cycle of the White-tailed Sea Eagle precedes that of Steller's Sea Eagle by approximately two weeks.

Fish predominate in the nutrition of Steller's Sea Eagle: Pike, Sheat-fish, Banded Catfish, Crucian Carp, Skygazer. In two years of observation we have only once seen an unsuccessful attack by a Steller's Sea Eagle on a flying duck. In two seasons of investigation were found the remains of one Muskrat (*Ondatra zibethicus*), three Jungle Crow (*Corvus macrorhynchos*) and a small mustelid in only four nests out of all those inspected. Some pairs of Sea Eagles show marked preferences, judging from the food remains collected from the nest and its vicinity. Certain pairs prefer Pike, or Sheat-fish, or Banded Catfish, or Crucian Carp, but the number of species in the diet may be determined by the variety of fish inhabiting the hunting territory used

by the pair. The remains of salmon were found in the nests only very rarely, although there is a tremendous amount of salmon in summer, which go to the rivers across the lake. There are numerous dead salmon on the lake surface and banks, which serve as food for the young Sea Eagles, which spend a lot of time on the bank for several days after leaving the nest.

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