

Changing Environment of the Steller's Sea-Eagle

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The Steller's Sea-Eagle (*Haliaeetus pelagicus*) is one of the largest birds in the world with its wing-span up to 2.4m (8 ft), but its surviving number is said to be only 5,000 in the whole planet and threatened to be extinct.

In Japan, it is a designated species of Natural Monument (Law for Protection of Cultural Asset) and of the 'Law for Conservations of Species'. It is also listed in Japan's Red Data Book. The international laws also assure its conservation as the species is listed in each treaty of Conventions and Agreements on Protections of Migratory Birds between Russia, US and also between China. Especially, in 2005, Japan's Ministry of Environment launched its 'Conservation/Multiplication Project for Steller's and White-tailed Sea-Eagles', and Japan reinforced its national efforts to protect the species.

The Steller's Sea-Eagle breeds along Okhotsk Sea in Russia's Far-East, and about 2,000 birds come to Japan every winter mainly to Eastern part of Hokkaido. They start coming to Northern-most tip of Hokkaido (Cape Soya) around October via Sakhalin Island. After that, they continue their migration along the coast of Okhotsk Sea to the Eastern Hokkaido, but some birds take a western route along Japan Sea coast to the Southern part of the island to winter there. Their departure from Japan starts around February mostly among adult birds first through the Cape Soya to Southern tip of Sakhalin. But some young birds may remain in Hokkaido as late as May.

In the past, especially when the Cod fishing was still prospering, there used to be tremendous concentration of Steller's and White-tailed Sea-eagles in Rausu area of Shiretoko Peninsula which is located in eastern Hokkaido.

In recent years, in Rausu, they throw pieces of wasted fish on the ice (to call eagles in) as part of tourist attractions, and that keeps the concentration of many eagles there. In addition, as same as in the past, there are disposed fish and waste from fish industries easily available to the eagles, and many birds assumed to be using this area as the wintering ground for extended period of time because of that. Furthermore, it started to be known that these eagles go back and forth between Kuanshir Island on Northern Territory where their feeding environment remains more natural. In Rausu, Notuske Peninsula and Lake Furen areas, the eagles are highly dependent on artificial food source, and their behaviors are influenced by the local fishing and bating activities, and the population of eagles in surrounding areas are thought to be affected in great deal by these man-made factors.

Lake Furen, Lake Akkeshi and Notsuke Peninsula areas offer good 'Under-Ice Net-Fishing' ground, and large nestling points of eagles are formed adjacent to these areas. This fishing is a

traditional fishing practiced in eastern Hokkaido and its method is, by opening holes on the ice, to insert the fish-net under water. For the eagles feed on the fish discarded on the ice during the fishing, their feeding ground condition; the period, areas and the size may vary widely depending on the ice condition and so on of each year.

Lead Poisoning still threatens the eagles

In Hokkaido, many Steller's and White-tailed Eagles are killed by lead poisoning when they feed on discarded Sika-Deer shot by lead bullets. There have been over 100 cases of lead poisoning mortality, and for many adult birds who are in reproductive ages are victims, a steep drop of the eagle population can very well happen. Most of killed eagles are found in mountains in deep winter where few people tread in, it is thought that the actual mortality may be a few times more. And we also assume that there are many eagles chronically poisoned by lead but still surviving.

Hokkaido laid a restriction on the usage of lead rifle bullets in year 2000 as the way of 'Notice'. And following year, they also banned lead shot gun bullets used for deer hunting. But these regulations only bans 'usage' and there is no restrictions on selling, purchasing and carrying. And as it is extremely difficult to control offenders except catching them at the spot, we assume that there are still many hunters using lead bullets. Last winter, 4 years after the usage of lead bullets had been banned, 5 eagles have been killed by lead poisoning, and that proved once again the regulation was not respected. In year 2003, the regulation against abandoning the hunted animals was enforced. And in following year, all the usage of lead bullets for large animals including the Brown Bear has been banned in Hokkaido.

This, however, is just a 'symptomatic treatment', and without a ban on the traffic of lead bullets nation wide, it is unlikely that we can eliminate the cases of raptors being lead poisoned soon. And it is also important to carry out elaborate researches nation wide, to get a precise picture of what kind of affect lead has done (or is doing) to them. Besides enforcing laws, it is essential that we should put priority in eliminating lead bullets entirely from the country which is the simplest way of solving the whole problem.

Oil & Gas Development in Sakhalin also clouds their Future

The Steller's Sea Eagle winters in Hokkaido and breeds along Okhotsk Sea of Russian Far East. In North-Eastern Sakhalin which is the nearest breeding habitat from Japan, there are major oil & gas developments going on and their negative impact (on the eagle) is very much concerned.

Besides various efforts to solve the lead poisoning problem in their wintering ground, we have been visiting Sakhalin every summer since year 2000, carrying out researches on the Steller's Sea-Eagles' breeding status and behaviors in collaboration with Moscow University. We have

discovered that there are at least 80 pairs breeding around the coastal lakes and lagoons of North-eastern Sakhalin, and we also counted more than 200 nests.

Currently there is a large-scale oil & gas project called 'Sakhalin Project' undergoing in the entire Sakhalin Island and its off shore areas, and among the Project, Sakhalin I – IX have been already materialized. As part of it, there are Sakhalin I and II projects going on in North-Eastern Sakhalin which have been criticized by many specialists and scientists for their insufficient environmental precautions.

The bays and lagoons around the Steller's Sea-Eagle's breeding ground are exceptionally shallow, and during low tide, water becomes only several inches deep in many places. This enables the eagle to easily catch flounders, spawning salmon and trout, and it is an essential factor to sustain the existence of the Steller's Sea-eagle. If a pipe-line laid along the shoreline or in the bays and lagoons bursts, the leaked oil would pollute to the bottom of the lagoons and thoroughly wipe-out the indispensable food source of the eagle. The bays and lagoons, like Lake Saroma, are connected with outer sea by only narrow channels, and the exchange of water is very much limited. Once semi-closed water is polluted, it is very unlikely that it cleans up itself and turns back to the original condition by itself.

In Sakhalin II Project, the pipe-line is going to span the whole length of the Island, crossing about 1,000 salmon-spawning rivers and streams. In addition, Sakhalin is known for its frequent earthquakes with number of active faults, and the risks of pipe-line accidents are more than likely. In the case that the oil spilled into river system, it is obvious that the water carries the oil into adjacent bays, lagoons, lakes and marshes, polluting the vast areas, and it would be beyond our capability to recover the original ecosystem ever.

Among all the eagles on which we attached transmitters during our researches since year 2000, 80 % of them have been recorded in Hokkaido in winter period. Last winter, we also confirmed an eagle with a transmitter along salmon spawning rivers on Okhotsk coast of Shiretoko Peninsula.

The Steller's Sea-Eagle that spends more than 6 months in Japan from fall to spring, is protected dearly by domestic laws, but the same bird is now being threatened to lose its summer habitat in Sakhalin. As a stake-holder of the oil & gas development, we first think of the (Japanese) fish industries and local residents, but considering our commitment as a nation to protect all the migratory birds including the Steller's Sea-eagle that travel between Sakhalin and Japan, it is not too much to say that all the Japanese citizens should be regarded as stake-holders.

New threats on their Migration Routes

One of the human pressures from which the Steller's Sea-Eagle is suffering lately is wind mill power plant facilities. There are high numbers of wind mills in Northern Hokkaido and it is concerned to influence the eagles as they are standing right on their migration routes. The influence of wind mills on large birds of prey has been problematic since long time ago in US and Europe.

Besides accidents with high-speed turning blades, it is said that changing of air flows or low frequency may affect the birds in a great degree. Unfortunately, in Japan, the investigations and studies on these factors are only just beginning. Currently there is a large scale plan to build wind power plant facility around Cape Soya where the Steller's Sea-Eagle uses as the gateway to come into Japan. The number of mills planned to be built is over fifty!

Our research has confirmed that eagles on which we attached transmitters in Sakhalin use the area frequently. They do not just pass the area during the migration, but we are discovering that some eagles stay there for longer period of time attracted by the plenty of salmon carcasses (Hocchare) in rivers when they arrive. Around Cape Soya, it is advisable, since such many eagles are using the area, that we should avoid building wind mills which would be a new threat to this species. And it is essential, before building the wind mill power plant facilities, to carry out sufficient environmental studies and to have inspection and estimation of the impact together with scientists and specialists included.

The Steller's Sea-eagle's habitat ranges mostly along Okhotsk Sea. It extends over the border of two countries - Russia and Japan, and it is the area of complexity with a lot of human activities i.e. the territorial disputes, international energy race, etc. For the conservation of the Steller's Sea-eagle, it is necessary to look at it with so-to-speak 'Pan-Okhotsk vision' that encompasses their whole range.

The Steller's Sea-Eagle comes to Japan as a winter bird. The domestic laws such as 'Law for Conservations of Species' and Natural Monument status protect the species, but since its breeding range is in Russia, the cooperation of two countries is indispensable, thus it is listed in Russia-Japan Migratory Bird Treaty Act. However, there are cases such as large scale developments in Russia or lead-poisoning in Japan which, in reality, can be regarded as violations of the Treaty by both sides.

During the last year's international conferences concerning the Russia-Japan Migratory Bird Treaty Act, Japan proposed to include Steller's Sea-Eagle, Spotted Greenshank and Dunlin of Sakhalin into the subjects of the joint research. Furthermore, Japan's Ministry of Environment has pledged to start the Conservation and Multiplication Project for Steller's Sea-Eagle and White-tailed Eagle. Important thing is to take pride in this species living in Hokkaido, and to make sure that they can spend winter there peacefully and go back to their breeding ground in healthy conditions. And we also need to think well of the fact that the Steller's Sea-Eagle's precious breeding habitat is being disintegrated in exchange with the economic growth from Sakhalin's development.

We must not sacrifice the wild species which is on the verge of extinction in return for the wealth of our own life.