Biodiversity Conservation of Birds of Prey

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Abstract. The article discusses the issues of negative anthropogenic impact on the populations of rare birds of prey in Primorsky Krai and the possibility of reducing this impact on the wild avifauna. Injuries were diagnosed in two Steller's sea eagles and the causes of the injuries were analyzed. The authors point out that in the context of decreasing biological diversity, the creation of rehabilitation centers for wild animals and birds can improve the indicators of the viability of populations of representatives of wild avifauna.

1. Introduction

The rescue and rehabilitation of wild animals and birds is the most important task facing society [1]. Threatening factors for birds are poaching, destruction and fragmentation of natural habitats, illegal trade, progressive urbanization of the environment [2-15]. Wildlife rehabilitation centers are scattered across the regions of our country unevenly, the profile of the activities of such organizations is different, as is the legal status. Wild animals, faced with diverse anthropogenic pressure, are in the most difficult conditions and need human support. With the help of these organizations, injured wild animals and birds are able to recover and return to the wild thanks to the qualified assistance of veterinary specialists. Rehabilitation centers receive help not only for injured animals, but also for weakened animals in need of feeding. As many authors point out [2-10], similar national, foreign organizations of narrow and wide orientation through multifaceted support to animals of the wild fauna contribute to the reintroduction of animals and the preservation of biodiversity.

In the Primorsky Territory, which is distinguished by its uniqueness, in 2012 the Interregional Public Organization "Center for the Rehabilitation of Tigers and Other Rare Animals" was established. Initially, the center was created to help large wild cats, but later the center's activities covered all wild animals and birds of the region. The center is equipped with special boxes, cages, aviaries. The complex is located near the village. Alekseevka Nadezhdinsky district. Recently, the proportion of chicks and injured birds admitted to the center has increased. Among the wide species diversity of birds, large birds of prey that have a conservation status also receive help: Steller's sea eagle, white-tailed eagle, goshawk, black vulture, long-tailed owl, gray owl, white-footed buzzard, common buzzard, marsh owl, fish owl, little quail and etc. [7].

2. Materials and methods

Objective of the study: preservation of the species diversity of birds of prey in the Primorsky Territory, listed in the Red Book of the Russian Federation.
The research objectives are:

- Description of the morpho-biological characteristics of birds of prey protected by the state;
- To diagnose existing injuries in Steller's sea eagles admitted to the rehabilitation center with Alekseevka, Nadezhdinsky District, Primorsky Territory;
- Analyze the causes of the injuries received.

The material for the study was a Steller's sea eagle in the number of two individuals with various injuries, delivered to the rehabilitation center of the MPOO with Alekseevka, Nadezhdinsky District, Primorsky Territory. Birds arrived from the Khabarovsk Territory in December 2019 and February 2020. Individuals were registered under individual numbers YaS04 and YaS09. During the veterinary examination, the birds paid attention to the visible injured areas of the wing, head and body, as well as to the state of the visible mucous membranes, skin, fatness, activity, the presence or absence of appetite, etc. To make the diagnosis, fluoroscopy was performed.

3. Results and discussion

The Steller's sea eagle (Haliaeetus pelagicus) is one of the largest birds of prey in the hawk family, endemic to the Russian Far East. Since it is a fish-eating bird, the range is confined to sea and fresh water bodies. The expanding oil and gas fields in its nesting area have led to a decrease in the number of the Steller's sea eagle, which is currently included in the IUCN Red List (vulnerable species), in the Red Book of Russia (category 3 - a rare species), included in the regional Red Data Books of the Khabarovsk and Primorsky Territories, Sakhalin region, Kamchatka and Magadan region. In addition, the species is protected by international agreements (Bonn Convention, International CITES Convention, bilateral agreements under the Convention on the Conservation of Migratory Birds between Russia, USA, Japan and Korea).

The eagle differs not only in such quantitative morphological indicators as size (body length of females - 102 cm, males - 88 cm, average wingspan - 200–245 cm), weight characteristics (weight of females - 6.8–8.9 kg, males - 4.9-7.5 kg), but also of high quality - with a bright, spectacular color. Black-brown back, belly, chest and bright white areas - tail, upper tail, under tail, shin plumage and spots on the fold of the wing “white shoulders”. This color is formed in birds by the age of 6-7 years and has a signaling function. The plumage of young birds is variegated and heterogeneous. The beak and legs are bright yellow. The wings are wide, the tail is wedge-shaped. Sexual dimorphism is expressed only in size, weight characteristics [12].

During the veterinary examination, the YaS04 bird was diagnosed with emaciation, hematoma in the wing region and hematoma in the keel region; bird YaS09 - a fracture of the wing bones, open wounds of the trunk, paws, wings, and beak. Due to the injuries received, the birds were unable to fly and, accordingly, use various hunting strategies.

The main causes of injury include the meeting of a bird with a moving vehicle, with glass panels, plastic transparent windows, etc.

Steller's sea eagles use two main strategies of behavior for foraging - active hunting and watching. Moreover, in different seasons of the year, strategies can change, and be combined with each other. The main food item for eagles is fish; it is combined with various mammals, birds, invertebrates. The corpses of dead animals also supplement the food spectrum. For several weeks, predators are able to do without food.

After providing the necessary assistance and further rehabilitation, the birds were released several months later.

Human economic activity, affecting the habitats of endemic species, leads, as a rule, to quantitative and qualitative changes in the habitats of these species, to a decrease in the number, population density. The anthropogenic impact on the Steller's sea eagle population is manifested in the form of intensive use of natural resources, environmental pollution, fires, unauthorized deforestation, depletion of the main food base, poaching, as well as an increasing number of power lines, air, land transport,
etc., which inevitably transforms habitats, creates additional traumatic zones. As a result of the permanent impact of mankind on the biosphere, the problem of biodiversity conservation has become a priority, requiring an immediate solution.

4. Conclusion
Thus, the interregional public organization "Center for the rehabilitation of tigers and other rare animals" p. Alekseevka, Nadezhinsky District, Primorsky Territory, mature specimens of the Red Book Steller's sea eagle were delivered with numerous injuries, received, in our opinion, as a result of a collision with a moving vehicle or transparent stationary objects. The birds were provided with qualified veterinary care without which these individuals would not have been able to return to their natural population. After recovery, the birds were able to fly independently and were released into the wild.

Such centers for the rehabilitation of wild animals and birds in conditions of diminishing biodiversity play an important role in the conservation of birds of prey in the Primorsky Territory with a high conservation status, as they create favorable conditions for the recovery of injured birds and contribute to the improvement of quantitative and qualitative indicators of populations.

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