

DISTRIBUTION AND ABUNDANCE OF SOME RAPTOR SPECIES IN THE LENINGRAD REGION

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The paper presents data on the abundance of five raptor species breeding in the Leningrad region: the White-tailed Sea Eagle (*Haliaeetus albicilla*), Osprey (*Pandion haliaetus*), Golden Eagle (*Aquila chrysaetos*), Spotted Eagle (*Aquila clanga*) and Lesser Spotted Eagle (*Aquila pomarina*). Information on tendencies in the change of the species abundance over the past 15 years is provided. Maps of nest area distribution in the Leningrad region have been plotted for all the species.

Key words: raptors, distribution, abundance, Leningrad region.

РАСПРОСТРАНЕНИЕ И ЧИСЛЕННОСТЬ НЕКОТОРЫХ ВИДОВ ХИЩНЫХ ПТИЦ ЛЕНИНГРАДСКОЙ ОБЛАСТИ.

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В статье приведены сведения о численности гнездящихся в Ленинградской области пяти видов хищных птиц: орлана-белохвоста (*Haliaeetus albicilla*), скопы (*Pandion haliaetus*), беркута (*Aquila chrysaetos*), большого (*Aquila clanga*) и малого подорликов (*Aquila pomarina*). Приводятся сведения о тенденциях изменения численности этих видов за последние 15 лет. Для всех видов созданы картосхемы размещения гнездовых участков на территории Ленинградской области.

Ключевые слова: хищные птицы, распространение, численность, Ленинградская область.

The fauna of the Leningrad region is quite specific. This is due both to the geographic position and the heterogeneity of landscapes in the area. The region comprises various types of middle and southern taiga forests, mires of various kinds, and numerous water-bodies. The most noteworthy among the latter are Europe's largest freshwater lake, Lake Ladoga, and the brackish eastern Gulf of Finland.

As regards its fauna, the Leningrad region is one of the best investigated regions of Russia. In the early 1980s, generalization and analysis of data on the distribution, biology and behaviour of birds in the region resulted in publication of the monograph by A. Malchevskiy and Yu. Pukinskiy, "Birds of the Leningrad Region and adjacent areas. History, biology, conservation" (1983). After more than 20 years gone since then, new and more accurate data on the distribution and abundance of some bird species in the region have been gathered.

A total of 21 species of diurnal raptors (*Falconiformes*) have been registered in the Leningrad region. Of these, 16 species continue nesting in the territory. Nests of two species, the Peregrine Falcon *Falco peregrinus* and the Short-toed Eagle *Circus gallicus*, were not detected in the region in the past decades. The Peregrine is regularly observed during seasonal migrations and even in the breeding period in some parts of the Leningrad region (Noskov et al. 1993, Iovchenko et al. 2001).

Short-toed Eagle records are far fewer. The last breeding registration of the species was from the south of the Leningrad region in 1961. There have been no more than a dozen and half observations of the species since then.

Decline in the abundance of the breeding population of large raptors began several decades ago. The decline for some species has been so heavy over this period that they are now at the verge of extinction in the region.

The Red Data Book of the Leningrad region (having, alas, no official status) comprises 13 raptor species. The number includes all eagles (genus *Aquila*) occurring in the region, the White-tailed Sea Eagle *Haliaeetus albicilla* and Osprey *Pandion haliaetus*. It is for these five species that abundance data are provided in the present paper.

The Osprey *Pandion haliaetus* in the Leningrad region settles on raised bogs within reach of waters rich in fish (fig. 1). The bird builds its large nests on tops of pine trees rising slightly over the rest of the trees in its part of the mire. Although an overwhelming majority of nests are situated in Lake Ladoga and Gulf of Finland shore areas, the Osprey nests also around relatively small but fish-rich lake systems in forests in the eastern part of the region. Researchers have noted a few times that the Osprey tends to settle in colonies. Yu. Pukinskiy (1983) reported of 2–3 pairs of the species nesting in a

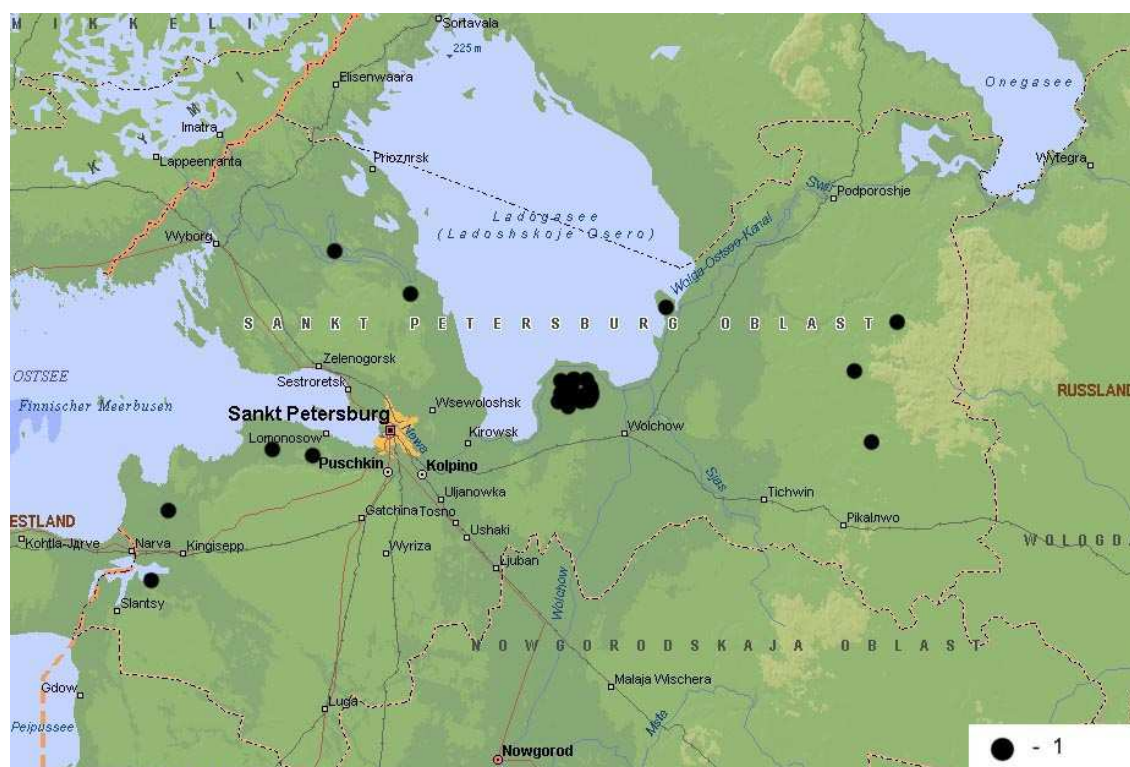


Figure 1. Breeding grounds of the Osprey (*Pandion haliaetus*) in 2000-2005. 1 – occupied nest registrations.

swampy peatmoss larch forest at the Volkhov Bay shore and in the upper reaches of River Svir. A group settlement of ca. 25–27 breeding pairs is known from a mire in southern Lake Ladoga area (Vysotskiy 2000). There are now at least 35–37 pairs of the Osprey breeding in the Leningrad region. The species abundance has shown an upward tendency in the past several decades.

The White-tailed Sea Eagle *Haliaeetus albicilla* settles in a variety of biotopes, but the distribution is always connected to sea coasts and shores of large lakes. Nests are built in the upper part of tree crowns and used repeatedly. Because of annual patching and building up, the nests sometimes reach quite an impressive size. Sea Eagles nest close to the shore of large bodies of water. The nests are 100–3500 m away from the shoreline, the average being 1100 m ($n=26$). An exception is the distribution of nests around Verkhne-Svirsky (Upper Svir) reservoir, where the White-tailed Sea Eagle places its nests as it does around Rybinsk reservoir (Kuznetsov & Reif 1998) – along the primary shore edge with a temporarily flooded zone. Several nests have been detected on dead trees standing within the flooded area. Apparently, one of the main criteria for the choice of the nest tree is the possibility of free access to the nest. Some territories may contain up to three nests. Birds usually use the same nest for breeding year after year. Only emergencies can make them change it (destruction of the nest, regular disturbance). Sea Eagles are capable of

building a new nest within a month. Average breeding success per a breeding pair was 0.72 young (0.46–0.89). One successfully breeding pair produced an average of 1.36 fledglings (1.1–1.9). In 1994, we started an inventory of breeding pairs of the species in Northwest Russia in general and in the Leningrad region in particular. These activities were implemented within the European programme for colour marking of juvenile White-tailed Sea Eagles. Over twenty years of surveys in the territory, breeding grounds of 18 White-tailed Sea Eagle pairs were detected. The main breeding grounds are SW Gulf of Finland coast, southern Lake Ladoga region and the impoundment reservoir on River Svir, in the NE part of the region (fig. 2). The number of breeding pairs has lately remained stable.

The Golden Eagle *Aquila chrysaetos* can be encountered in the Leningrad region throughout the year. This eagle species both occurs during seasonal migrations and overwinters in the region. As indicated by ringed bird recoveries, winter residents are younger individuals breeding in regions further north. At the moment, the status of the Golden Eagle in the Leningrad region is nearly critical, the species being very rare in the region in the breeding period. All Golden Eagle nests found in recent years are located on dry ridges in vast raised bogs. According to some optimistic estimates there now breed no more than 5 pairs of the species in the Leningrad region. At present, we only know of three nests where breeding takes place (fig. 3).

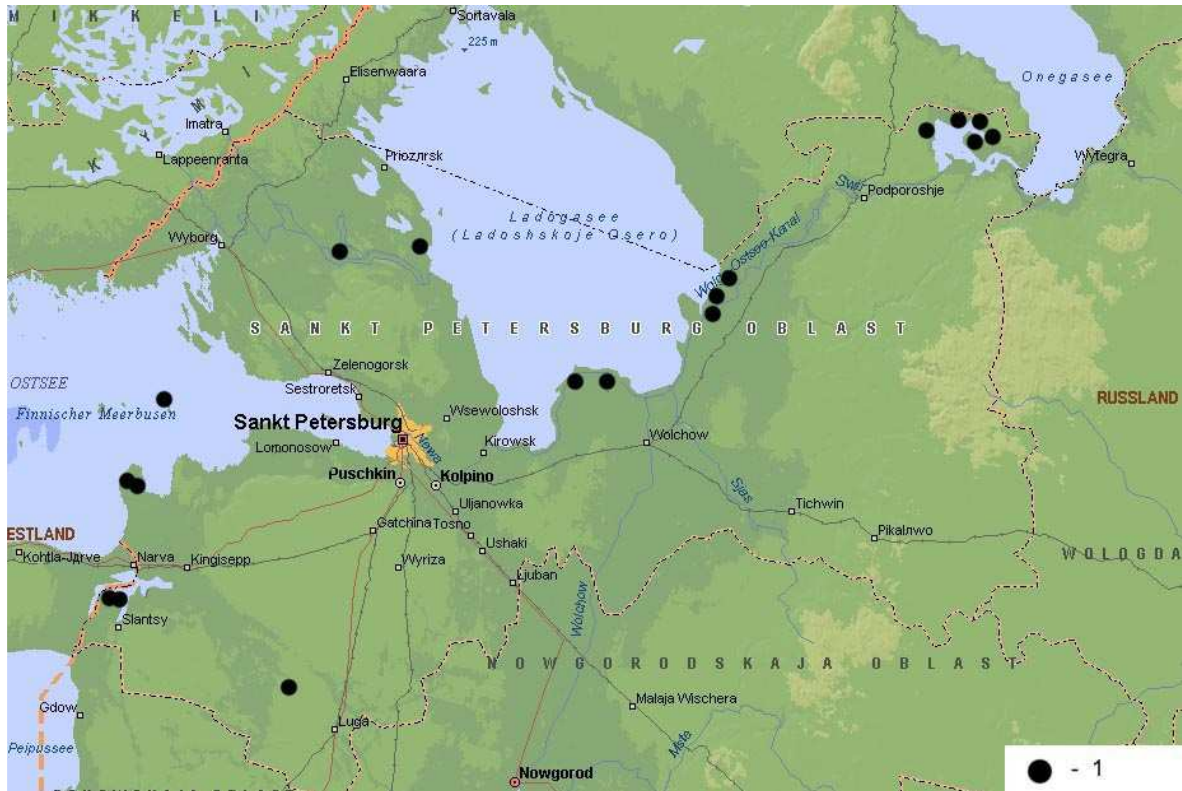


Figure 2. Breeding grounds of the White-tailed Sea Eagle *Haliaeetus albicilla* in 2000–2005.
 1 – occupied nest registrations.

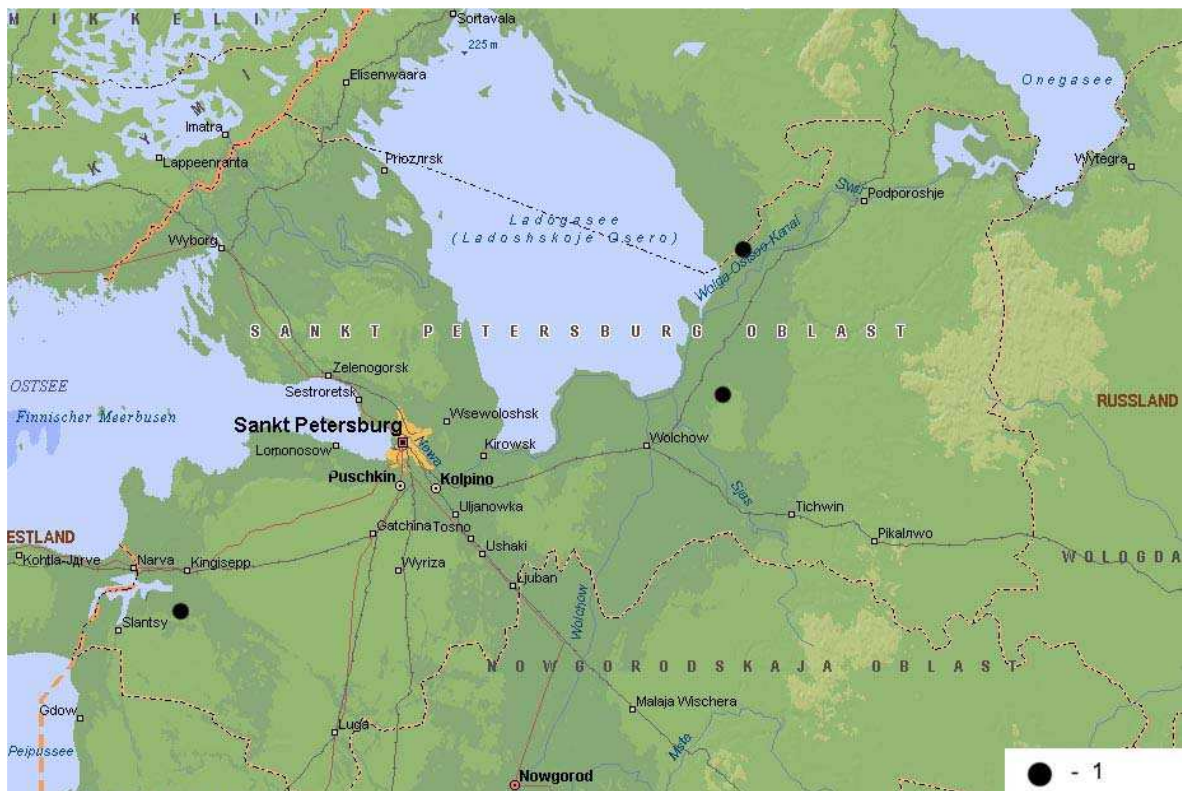


Figure 3. Breeding grounds of the Golden Eagle *Aquila chrysaetos* in 2000–2005. 1 – occupied nest registrations.

One should admit that the main limiting factor for the Golden Eagle is disturbance and intentional persecution of the species. These birds now quite often get shot by poacher taxidermists.

Early in the 1980s, the Spotted Eagle *Aquila clanga* was regarded as the most common species among large raptors in the Leningrad region (Malchevskiy & Pukinskiy 1983). In those years, specialists estimated the population to be 18–20 pairs. The distribution of territories of the Spotted Eagle over the territory was uneven. The species tended to settle in water-logged river valleys, extensive wet cutovers, mires and lake shores becoming overgrown by vegetation. The birds were most frequently sighted in the Lake Ladoga region and around lakes of the Karelian Isthmus. In many locations, Spotted Eagle pairs were known to have bred for decades. Galushin (1980) estimated the Spotted Eagle breeding density in European Russia in those years to be 5 pairs per 1000 km².

Judging by our studies, the main requirement to the breeding biotope for the species is availability of open foraging habitats in the vicinity: overgrowing waters, mires, and floodplain meadows. Being a flexible species, the Spotted Eagle easily shifts from one food object to another. However, as meadows and floodplains get overgrown with scrub, foraging opportunities deteriorate. In the past two decades, fewer Spotted Eagle nests have been reported. Experts estimate current Spotted Eagle population in the Leningrad region to be no more than 10 pairs. In addition to the above-

mentioned degradation of foraging and breeding habitats, a limiting factor for the species is illegal killing. We are only aware of the nests and breeding grounds of 6 pairs of the species (fig. 4).

It is believed that the northeastern boundary of the distribution range of the Lesser Spotted Eagle *Aquila pomorina* runs across the Leningrad region. The species is quite common in western and south-western parts of the region, but not observed east of River Volkhov. It settles in small forest patches adjoining barren land or drained fields and avoids extensive forest areas and large raised bogs. The most favourable habitat for the Lesser Spotted Eagle is farmland with low human presence. A very strong limiting factor for the species is the lack of agricultural activities in the farmland. After grasslands have been mown down, members of all pairs nesting in the vicinity come to hunt there. Lesser Spotted Eagles were noted to be unevenly distributed over the territory in the breeding period. They settle in small groups. In such areas, nests may be within 1.5 km apart. We know breeding territories of five pairs of the Lesser Spotted Eagle (fig. 5). There appears to be a total of no more than 10–12 pairs of the species breeding in the Leningrad region.

A heavy impact on raptors in the Leningrad region today is produced by illegal hunting. Birds are taken for taxidermy. The bigger the bird, the more attractive it is to poachers. Overgrowing of fields and cessation of agricultural activities are becoming a weighty limiting factor for raptors hunting in farmland.

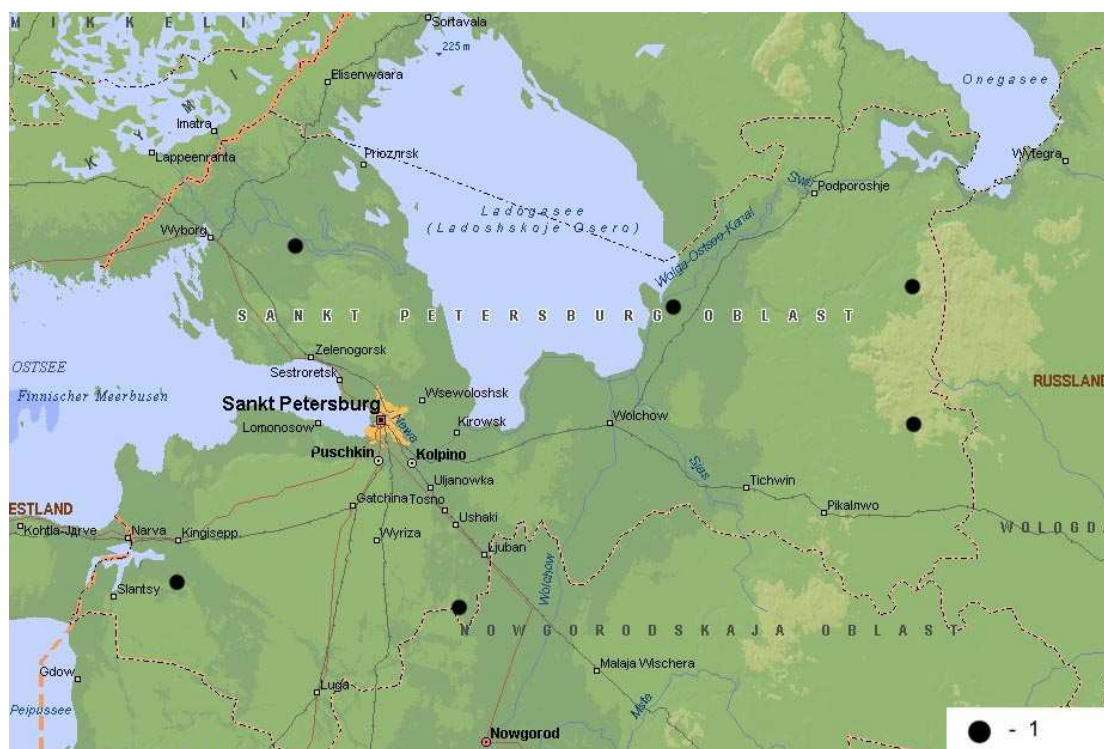


Figure 4. Breeding grounds of the Spotted Eagle *Aquila clanga* in 2000–2005. 1 – occupied nest registrations.

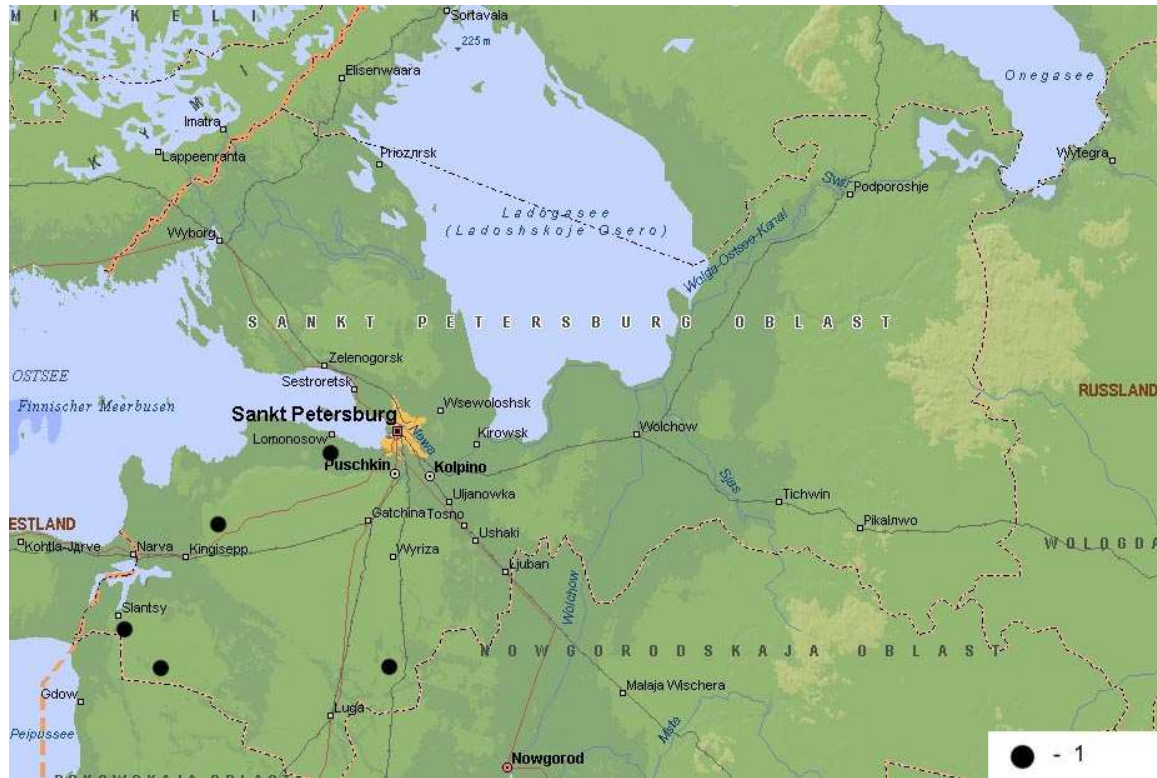


Figure 5. Breeding grounds of the Lesser Spotted Eagle *Aquila pomarina* in 2000–2005. 1 – occupied nest registrations.

The abundance of the White-tailed Sea Eagle and Lesser Spotted Eagle in the past several decades has remained stable (tab. 1). A reduction in the number of breeding pairs in the Leningrad region has been demonstrated by the Golden Eagle and Spotted Eagle. The number of Golden Eagle nests has lately decreased notably. There is only one area where these eagles breed annually.

Regular breeding of the pair is due to the location of the nest within the Nizhne-Svirskiy strict nature reserve. Breeding in all other areas is not annual. The number of breeding Osprey pairs has increased lately. In some localities with plentiful food supply and limited human access Osprey pairs group close to each other.

Table 1. The number of raptor pairs and their trends in the Leningrad region over several decades.

Species	1980s (after Malchevskiy & Pukinskiy 1983)	2004–2005, own data	Trend
Osprey	12–15	35–37	Increase
White-tailed Sea Eagle	12–14	16–18	Stable
Golden Eagle	3–4	1–3	Decrease
Spotted Eagle	18–20	8–10	Decrease
Lesser Spotted Eagle	10–12	10–12	Stable

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