



Protected Areas



Map by M. Dubinin



Kandalakshsky Zapovednik: Protecting Russia's Northern Maritime Wonders

by *Alexander S. Koryakin* and
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As one of Russia's maritime reserves, Kandalakshsky Zapovednik unites small clusters of archipelagoes and coastal territories scattered throughout the Barents and White Seas. Here in the far north of Russia's Kola Peninsula, nature's rhythm is set by the midnight sun in June and the polar nights of December. Its marine and coastal ecosystems come to life each year for a short but intense summer of light and activity.



The bearded seal (*Erignatus barbatus*) is one of the marine mammals inhabiting Kandalakshsky Zapovednik. Photo by Yu. Krasnov

Kandalakshsky Zapovednik was officially designated in 1939. Originally created on an area of 116.4 km²/11,650 ha, the Zapovednik has since grown and is now comprised of 13 units that are administered by two separate branches (the White Sea and Barents Sea Branch). Today the total area of the reserve is 705.3 km². (Please refer to accompanying map). While Kandalakshsky Zapovednik harbors old-growth spruce and pine forests, it is especially known for its role in conserving marine mammals and birds. In fact, 70 percent of its territory is marine and coastal habitat. Its importance in coastal wetland conservation was recognized in 1976, when the Zapovednik's White Sea territories were designated as a Wetland of International Significance, as defined by the Ramsar Convention.

Indeed the Zapovednik is critical for protecting habitat for a diversity of bird species, particularly seabirds. One sea duck, the common eider (*Somateria mollissima*), is at the heart of Kandalakshsky's history.



A view of Kandalakshsky Zapovednik. Photo by N. Maleshin

Renowned for the extraordinary insulating qualities of its down feathers, the eider has long been a target of commercial use in Russia. Already in the seventeenth century, Russia was a major exporter of down to the West. Exploitation of this species was ruthless: hunters collected down during the eider's mass nesting period, with little concern for

managing the resource over a long-term period. Often the careless hunters, having reached these nesting areas, would take the eider eggs and chicks as well, as though for sport. As a result of this gluttony, by the middle of the eighteenth century, the eider had nearly vanished from the Kola Peninsula and its numbers had visibly declined throughout

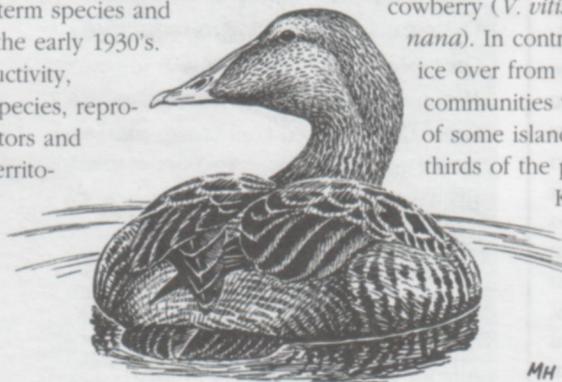
Kandalakshsky Zapovednik: Biodiversity Conservation in the High North

In addition to the eider, the Zapovednik serves as a vital breeding ground for the great cormorant (*Phalacrocorax carbo carbo*). In the Murmansk Oblast, the northern gannet (*Sula bassana*), greylag goose (*Anser anser*), common shelduck (*Tadorna tadorna*), and great skua (*Stercorarius skua*) nest in the Zapovednik only. The protected waters of the Barents Sea are also an important region for the migration and wintering of Steller's eider (*Polysticta stelleri*).

Although seabirds are the primary focus for conservation and research at Kandalakshsky, the Zapovednik also considers as priority the continuation of the long-term species and ecosystem monitoring that began in the early 1930's. Data on phenology, vegetation productivity, temporal and spatial distribution of species, reproductive success as well as abiotic factors and human influences on the protected territories are collected annually for the *Letopis' Prirody* (*Chronicles of Nature*) volumes. The yearly reports contain information on 200 to 250 species, including: 120 plants; 30 marine invertebrates; 60 insects; 5

amphibians and reptiles; 80 birds; and approximately 30 mammal species.

As is evident in the *Letopis' Prirody*, Kandalakshsky is home to many plant species. The warm Gulf Stream current moderates the climate of the Zapovednik's Barents Sea Islands, preventing the formation of ice around them during the winter months. The islands are vegetated by plants characteristic of the stony-lichen, shrub-lichen, and shrub tundras. These plants include crowberry (*Empetrum nigrum*), billberry (*Vaccinium myrtillus*), northern billberry (*V. uliginosum*), cowberry (*V. vitis-idaea*), and dwarf birch (*Betula nana*). In contrast, the waters in Kandalakshsky Bay ice over from late November to May. Tundra communities with crowberries are characteristic of some islands in this Bay. An amazing two-thirds of the pine and spruce forests that cover Kandalakshsky are old-growth.



Common eider (*Somateria mollissima*). Drawing reprinted from the *The EBCC Atlas of European Breeding Birds, 1997*

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Kandalakshsky's Red Data Book Species

Plants

Lady's slipper

(*Cypripedium calceolus*)

Calypso (*Calypso bulbosa*)

Ghost Orchid (*Epipogium aphyllum*)

Narrow-leaved Marsh Orchid

(*Dactylorhiza traunsteineri*)

Cotoneaster cinnabarinus

Carex livida

**Whitlow-grass (*Draba insularis*)

**Rock-rose

(*Helianthemum arcticum*)

**Dandelion

(*Taraxacum leucoglossum*)

Lichens

Bryoria fremontii

Lobaria pulmonaria

Birds

European Shag

(*Phalacrocorax aristotelis*)

Osprey (*Pandion haliaetus*)

White-tailed eagle

(*Haliaeetus albicilla*)

Gyr Falcon (*Falco rusticolus*)

Peregrine falcon (*Falco peregrinus*)

White-billed Diver (*Gavia adamsii*)

Lesser White-fronted Goose

(*Anser erythropus*)

Great Gray Shrike (*Lanius excubitor*)

Mammals

Atlantic gray seal (*Halichoerus grypus*), a species included in the Red Data Book of Russia.

**species endemic to the region of the Zapovednik



Kandalakshsky's founding mission is to protect and restore seabird colonies.

Photo by Yu. Krasnov

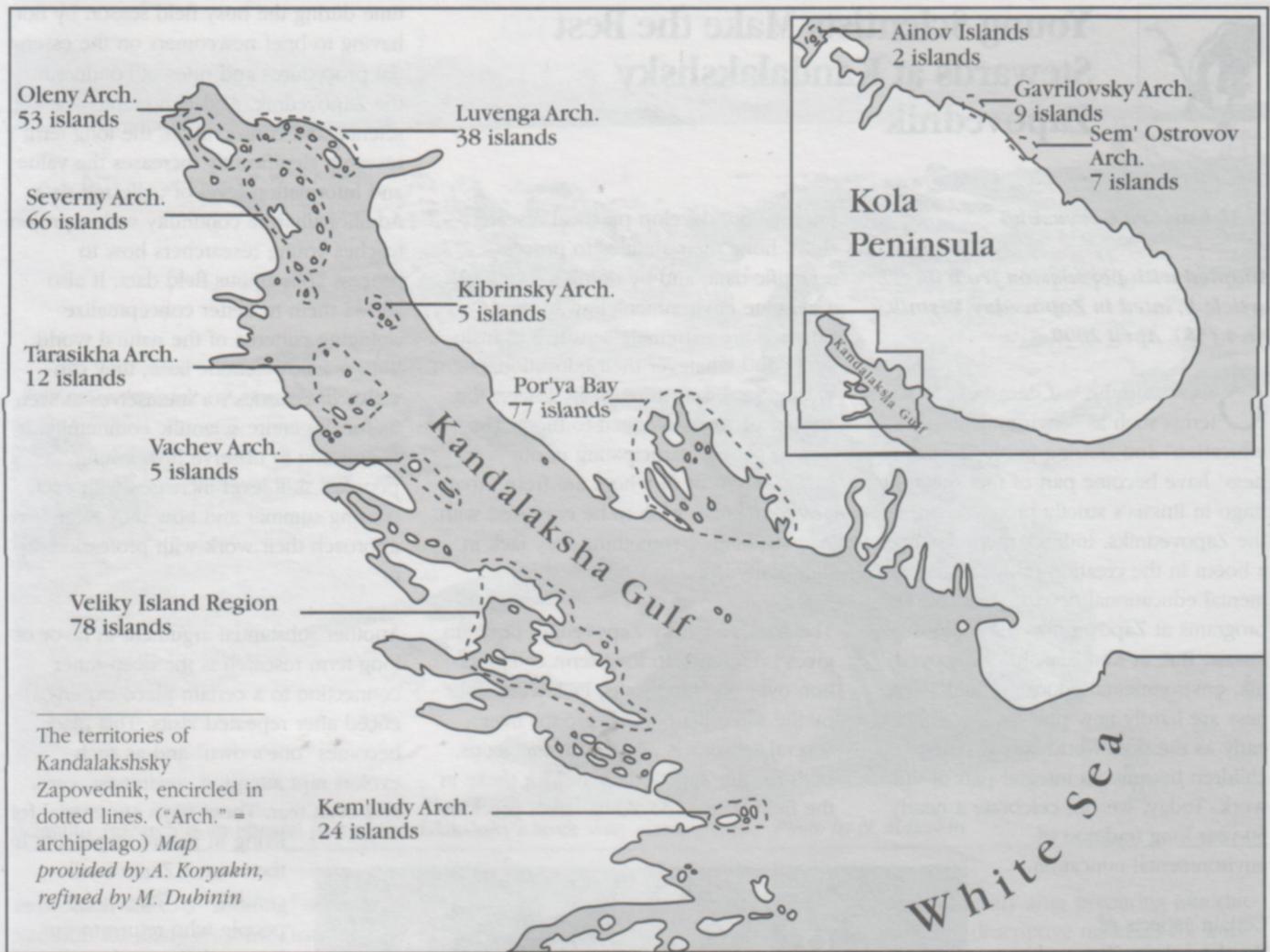
the White Sea. The severe depletion of this species forcibly brought the commercial collection of down to a standstill in the nineteenth century.

Up until the twentieth century, the only known attempts to protect the eider had been made by monasteries. Both the Solovetsky Monastery on Onega Bay (White Sea) and the Trifonovo-Pechersky Monastery on the Aĭnov Archipelago (West of Murmansk, Barents Sea) tended eider farms for the sustainable collection of down. This duck was nearly domesticated on these farms. Unfortunately, during the Soviet period, these monasteries, and the refuge they offered for the eider, were soon abolished.

As eider populations began to slightly recover in the early twentieth century, the extermination of this species for down once again resumed. This period, however, also marked the beginning of a significant and purposeful protection effort for the eider. The leader of this conservation attempt was the famous Russian zoologist, A. N. Formozov. After observing the rampant destruction of eider nests during an expedition along the Bering Sea Coast in 1929, Formozov launched a campaign to protect the species. His efforts were fruitful: as a result of this campaign, the collection of down, eggs, and skin by private individuals was completely prohibited by the federal Soviet government. This prohibition,

Table 1. Kandalakshsky Zapovednik's significance for seabird communities is illustrated in the figures below. (KZ = number of pairs in Kandalakshsky Zapovednik; KZ% = percent of the region's breeding pairs found in the Zapovednik)

Species	Pairs of Breeding Seabirds in Kola Peninsula Region		
	Total for Region	KZ	KZ (%)
Northern Gannet (<i>Sula bassana</i>)	15	15	100
Great Cormorant (<i>Phalacrocorax carbo</i>)	1750	330	20
Common Shag (<i>Phalacrocorax aristotelis</i>)	500	450	90
Common Eider (<i>Somateria mollissima</i>)	10500	9000	90
Oystercatcher (<i>Haematopus ostralegus</i>)	1350	1010	80
Great Skua (<i>Stercorarius skua</i>)	6	Max 10	-
Herring Gull (<i>Larus argentatus</i>)	9600	8000	80
Great Black-backed Gull (<i>Larus marinus</i>)	3650	3130	90
Mew Gull (<i>Larus canus</i>)	>2700	>2100	80
Black-legged Kittiwake (<i>Rissa tridactyla</i>)	130000	30000	20
Arctic Tern (<i>Sterna paradisaea</i>)	>2200	>1400	60
Murres (<i>Uria sp.</i>)	11000	6000	60
Razorbill (<i>Alca torda</i>)	490	410	80
Black Guillemot (<i>Cepphus grylle</i>)	2260	2000	90
Atlantic Puffin (<i>Fratercula arctica</i>)	7500	5000	70



though, did not apply to government agencies.

Another highly progressive step toward preserving the eider was taken in 1931 when a decree was signed on the protection and sustainable use of the eider in Kandalakshsky Gulf. And, in 1932, plans for Kandalakshsky Zapovednik were made. Although it was several years before the reserve was officially established, the attention by scientists and planners began to have an effect, and the eider population began to increase steadily. Whereas about 300 eider nests were recorded in 1933, 417 were counted in 1934, 550 in 1935; and finally, 682 in 1936.

Since the post-war period, scientists have conducted regular inventories of the Zapovednik's bird populations. Since 1967 these studies have covered the majority of the Zapovednik's islands

(approximately 350). Their research now shows that the eider population at the Zapovednik has stabilized and is one of the largest in Russia.

With all of the challenges in maintaining Russia's nature reserve system today, this success story is a refreshing reminder of important role Zapovedniks play in conserving and restoring the world's biological diversity.

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New Protected Area Appears in the Russian Far East

Reprinted from "Forest News" an electronic bulletin published by the Russian NGO Forest Club and the Socio-Ecological Union, N 4(51) April, 2000

A new Zakaznik (special purpose preserve), Urochishche Urkun, was recently created on an area of approximately 7,000 ha in the southeastern corner of the Amur Oblast. This territory was created in close proximity to a reservoir that will be formed upon completion of the Bureisky Hydroelectric Station. This Zakaznik is characterized by steppe vegetation typical of Mongolia and northern China, including 30 rare plant species that are listed in the Russian Red Data Book.