Information Sheet on Ramsar Wetlands (RIS) – 2006-2008 version

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

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1. Name and address of the compiler of this form:

V.V. Bianki (The Kandalakshsky State Nature *Zapovednik*, 184040 Murmansk Oblast, Kandalaksha, Lineinaya street 35); I.E. Kamennova

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DD MM YY

Designation date | Site Reference Number

2. Date this sheet was completed/updated:

July 2008

3. Country:

Russian Federation

4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Kandalaksha Bay (No. 110)

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5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only)**:**

a) Designation of a new Ramsar site ❑; or

b) Updated information on an existing Ramsar site ☒

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6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged: ☒

or

If the site boundary has changed:

i) the boundary has been delineated more accurately ❑; or

ii) the boundary has been extended ❑; or
iii) the boundary has been restricted** ❑

and/or

If the site area has changed:
i) the area has been measured more accurately ❑; or
ii) the area has been extended ❑; or
iii) the area has been reduced** ❑

** **Important note**: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

Human impact is mainly indirect.

7. Map of site:
Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:
i**) a hard copy** (required for inclusion of site in the Ramsar List): ☒;

ii**) an electronic format** (e.g. a JPEG or ArcView image) ☒;

iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** ☒.

b) Describe briefly the type of boundary delineation applied:
e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The border follows physical boundaries of natural objects.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):
Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.
66°46’ N, 33°08’ E

9. General location:
Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.
Northwestern part of the White Sea, apex of the Kandalaksha Bay. Northwestern part of the site is close to the town of Kandalaksha.

10. Elevation: (in metres: average and/or maximum & minimum)
at the sea level, with some summits on islands rising to 80 m a.s.l.

11. Area: (in hectares)
208,000 ha

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The apex of the Kandalaksha Bay of the White Sea, with indented shoreline, hundreds of small rocky skerry-like islands, extensive shallows and littoral. Mass breeding grounds of the White Sea Common Eider *Somateria mollissima*, other waterbirds and shorebirds; moulting grounds of diving ducks and sawbills; and stopover sites of passage migrants.

13. Ramsar Criteria:

Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1	2	3	4	5	6	7	8	9
☒	☐	☐	☐	☒	☒	☐	☐	☐

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1. The site is a representative example of marine and shoreline wetlands that are typical of the region: marine waters ranging in depths between over 100 m in a deep trench to shallows that border roughly indented Karelian shore; stony, sandy, and sandy-silty littoral with rich benthic communities that is exposed to 100 m in low tide; rocky and flat islands, with largest of them comprising lakes; coastal salt meadows and marshes. Large islands (Veliky, Ryazhkov, Oleniy, Lodeiny, Vlasov etc.) are covered with north taiga pine and spruce forest with birches and aspens.

Criterion 5. The site regularly supports at least 20,000 waterbirds. 24,800-25,400 ducks were counted on August 1 in 2005-2006 in a duck moulting area near Torosikha Island; of them 13,100 were Common Divers, 9,000 Velvet Scoters *Melanitta fusca*, 3,700 Goldeneyes *Bucephala clangula*, 1,100 Goosanders *Mergus merganser*, and other duck species.

Criterion 6. The site supports over 1% of the individuals of the White Sea population of the Common Eider *Somateria mollissima*. According to long-term data, the site supports up to 9,500 breeding birds, 10,000 to 12,000 summer visitors (Ключевые орнитологические территории… 2000). During the last 15 years, as well as before, natural dynamics of Eider numbers could be recorded in the Kandalaksha Bay. Currently, according to monthly counts performed in summer months, the number of adult male Common Eiders on the sea stretch of the northern inspection of the Kandalakshsky State Nature *Zapovednik* (i.e. from the northwestern border of Kandalaksha Bay and the Ramsar site to the Kibrinsky Islands and Sedlovataya Luda, which is about 3,000 ha of shallows) decreased from 7,900 ind. on 1 June, 2001, to 4,200 ind. in 2007. Up to 13,100 common eiders were registered in early August 2005-2006 in the duck moulting area near Torisikha Island.

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Region 6a – Northern taiga

b) biogeographic regionalisation scheme (include reference citation):

A.A. Tishkov. Biosphere functions of natural ecosystems in Russia. 2005. 309 p.p. in Russian

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Geology and geomorphology Kandalaksha Bay lies along the axis of the White-Sea meganticlinorium of the Baltic shield. The region is built with two complexes of Precambrian basement of the Russian platform: Riphean rocks including conglomerates, sandstones, argillites, dolomites and clayey schists on the northeast, and Saamen rocks including gneiss, granites, amphibolites, pyroxene crystalline schists, migmatites. The remains of primary volcanic rocks are found at the site. Kandalaksha Bay is located in the Salmovo-Kolvitsky synclinorium. Its shores were smoothed and marked with striae by the glacier. Fjords have relatively gently sloping shores and minor depths. The bay is not older than 10,000 years. The land keeps rising here, while the sea retreats.

Climate The site is situated within the Atlantic-Arctic climatic zone. The Gulf Stream has some influence on the area, but the climate is more continental than that on the Murman coast. The winter in the Kandalaksha Bay lasts from the second half of October to the end of April; the summer begins in the first half of June and ends till the end of August. Thaws are frequent during the winter, while in spring the weather is very changeable. Snow spells can occur in June and frosts in August. The summer is cool, with air temperatures between 15 to 12 °C. The sum of mean daily air temperatures above 10 °C reaches 1000 to 1200 °C (Агроклиматический справочник…1961).

Hydrology Kandalaksha Bay has regular tidal variations in water level that on average reach 2 meters and create currents of changeable directions and speed. A counter-clockwise outward current persists in the White Sea. Wind-induced waves are mitigated by numerous islands and indented shoreline.

In winter, the bay is covered by fast ice. The location of the boundary of drift ice, the existence of seasonal open waters, and the size of permanent open water patches are changeable and depend upon yearly climatic conditions. Desalinated waters freeze by early October and the ice cover last till late in May (Бианки 1996).

Soils Soils on the islands are the same as on the shore. They are very diverse in composition. The gravelly-sandy alluvium and diluvium of main metamorphically altered rocks mixed with moraine deposits play a fundamental role in soil formation. They contain dark, iron-rich minerals, much quartz, mica, and stable fieldspar. Widespread are primitive soils on loose worn-away rocks covered with mosses and lichens. A sod layer 2 to 15 cm deep contains up to 75% of organic matter (Бызова и др. 1986).

Waters In addition to the shallows, islands, and bays, the site formally comprises the northwest extremity of the White Sea trench with depth up to 300 m. Water exchange between the site and the White Sea is unobstructed at all depths.

According to long-term data, temperatures in the top layer of water measure about 0 °C in winter, +6 °C by in late spring, and rise to 13-14 °C in early August, while they remain fairly constant (around 0 °C) at depths of over 50 m. Water salinity in Kandalaksha Bay is very variable. It measures 13–17 ‰ in the apex of the bay and about 24‰ at the southwest border of the site (Океанографические условия…1991). Changes in the salinity also occur as a result of ice formation in autumn (higher salinity) and ice thaw in spring (lower salinity), as well as storms, currents, wind-induced waves and other factors. For example, in Chupa Bay the salinity fluctuates between 15 and 26 ‰ in the course of the year. Deep waters (below 50 m) have a permanent salt load of about 28‰ (Бабков, Голиков 1984).

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

Data is not available.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Data is not available.

19. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp Ts • U • Va • Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

A, B, G, D, H.

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

Main habitat types at the site are: open sea waters and bays (60%); islands and shallows (30%); and coastal marshes on islands (10%).

Kandalaksha Bay in its southeast, marine part of the site is over 100 m deep and about 15 km wide. Northwest of the Kochinny Headland, a trench 50 to 60 meters deep and about half of the bay wide extends along the Kandakaksha coast nearly to the Kolvitskaya Guba bay. The total area of this part of the site is about 120,000 ha. There are few islands and shallows there, though they can occur both near the land and far away of it. Examples of these are the Sredniye Ludy Islands, and the shallows of Srednyaya Korga, Tsar, and others. This part of the site is used by breeding Great Cormorants *Phalacrocorax carbo*, moulting Goosanders *Mergus merganser*, Common Eiders can be observed near the Kandalaksha shore. Bird density does not exceed 1 ind./km^2.

The portion with islands is 30% smaller than the marine one, with a total area of about 80,000 ha. It comprises hundreds of small islands (less than 100 ha) that form Kandalaksha skerries in the apex of the bay, as well as archipelagos and small groups of islands along the Karelian shore of the bay. Most of them are non-forested. The local name of these islands is *ludy*.

The islands are bordered by expansive shallows with depth not exceeding 10 m. The muddy-sandy littorals covered with scattered boulders of various sizes are several tens of meters (sometimes over 100 m) wide. In some places, steep rocky littorals occur that are a few meters wide. Muddy littorals are rare.

The littoral and shallows of Kandalaksha Bay are inhabited by various mollusks, copepods, polychaetes, and other invertebrates that birds feed upon. The commonest and most abundant of them are mussels, with a biomass ob 50 km/m^2 (Наумов, Скарлато, Федяков 1987). Schooling pelagic fishes are scarce in the White Sea and cannot provide feeding for breeding seabirds. The only fish-eating birds that breed at the site are the Red-throated Diver *Gavia stellata* (breeding on lakes and feeding at sea), Great Cormorant, Red-breasted Merganser *Mergus serrator*, Razorbill *Alca torda*, and Black Guillemot *Cepphus grylle*; Goosanders moult at the site.

Common Eiders and other diving ducks, waders, gulls, Arctic terns *Sterna paradisaea*, razorbills and Atlantic auks breed mostly on islands. Most Goldeneyes *Bucephala clangula*, Velvet Scoters *Melanitta fusca*, and Goosanders mount in the same portion of the site. Coastal meadows and fields of black crowberry *Empetrum nigrum* are used as stopover sites by passage migrants, such as the Barn Geese *Anser fabalis*, Golden Plovers *Pluvialis apricaria*, Whimbrels *Numenius phaeopus*, and other species. Bird density reaches 50 to 100 ind./km^2.

The Karelian mainland shore is indented by numerous fjord-like bays. The opposite, Kandalaksha shore is less indented. Though food is abundant and available here, visibility is

restricted by the coastal forest inhabited by taiga predators. Fjord-like bays are habitats of shorebirds and gulls, while seabirds are rare visitors there. In some places, large amounts of mud is accumulated on the littoral and sublittora. These are habitats of the species that feed on mudflat invertebrates.
Kandalaksha Bay has few stationary pools of open water that might be used by wintering ducks. In spring, new pools appear in the second half of April, whereupon first migratory waterbirds and shorebirds arrive at the site. The migration lasts through May and gradually turns into the summer migration, and then to the autumn one. The earliest birds to leave the site (end July) are Turnstones *Arenaria interpres* and Arctic Terns *Sterna paradisaea*.

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21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS*.

One lichen species and four species of vascular plants listed in the Red Data Book of the Russian Federation are found along the shore and on the islands at the site: *Bryoria friemontii*, *Cypripedium calceolus*, *Calypso bulbosa*, *Epipogium aphyllum*, *Cotoneaster cinnabarinus*.
In addition to these, four lichen species, one moss species, four species of ferns and 28 species of flowering plants found at the site on islands and coasts of Kandalaksha Bay are listed as rare and threatened in the book Rare and Threatened Plants and Animals in the Murmansk Region (Редкие и нуждающиеся в охране растения и животные Мурманской области 1990).

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22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS*.

Most part of the White Sea population of the Common Eider breeds on the islands in Kandalaksha Bay (see Section 14); thousands of male Goldeneyes, Velvet Scoters, Goosanders, and other species of diving and dabbling (Anas) ducks moult there; the wetland is used as a stopover site by passage migrants, such as Whooper Swans *Cygnus Cygnus*, Bean Geese *Anser fabalis*, various species of ducks, Knots *Calidris canutis*, Dunlins *Calidris alpina*, Bar-tailed Godwits *Limosa lapponica*, Whimbrels *Numenius phaeopus*, and other shorebirds as well as raptors.

In recent years, according to monthly counts performed in summer months, the number of moulting benthos-eating Goldeneyes and fish-eating Goosanders increased considerably on the sea stretch of the northern inspection of the Kandalakshsky Reserve (i.e. from the northwest border of Kandalaksha Bay and the Ramsar site to the Kibrinsky Islands and Sedlovataya Luda, which is about 3,000 ha of shallows). Whereas 2,410-6,460 goldeneyes were counted in that area in 1996-1998 and 2,260 (on average) in 1999-2004, their numbers grew to 14,360 birds in 2006-2007. This number seems to be close to the limit. Numbers of fish-eating Goosanders depend on how much small fish come to the apex of Kandalaksha Bay. On average, there were 370 Goosanders counted there in 1996-2000, 2000 birds in 2003-2005, and 3450 birds in 2006-2007.

Numbers of breeding diving ducks, Red-breasted Mergansers *Mergus serrator*, and Common Gulls *Larus canus* decreased in the 1990s and have oscillated around the low level ever since. It seems to have resulted from an increase in numbers of Herring Gulls *Larus argentatus* that have somewhat decreased over the last 15 years, but still remain high. Herring and Great Black-backed Gulls kill most of their chicks that keep in the water near islands, on the littoral, and in open areas of the islands (Бианки1991, 2001).

Species of animals listed in the Red Data Book of the Russian Federation and observed at the site are as follows: Yellow-billed Diver *Gavia adamsii* (occasional visitor), European Shag *Phalacrocorax aristotelis* (occasional visitor), Lesser White-fronted Goose *Anser erythropus* (passage migrant), Osprey Pandion haliaetus (*breeder*), Golden Eagle Aquila chrysaetos (*local resident*), White-tailed Eagle *Haliaeetus albicilla* (breeder), Peregrine *Falco peregrinus* (breeder); and the Freshwater Pearl Mussel *Margaritifera margaritifera* (breeder).

The Red Data Book of the Murmansk Oblast also includes the Whooper Swan *Cygnus cygnus* (passage migrant), Mute Swan *Cygnus olor* (occasional visitor), Eurasian Hobby *Falco subbuteo* (breeder), Kestrel *Cercheneis tinnunculus* (breeder), Merlin *Aesalon columbarius* (breeder), Crane (breeder), Eagle Owl *Bubo bubo* (short-distance migrant), Snowy Owl *Nyctea scandiaca* (short-distance migrant), Great Grey Owl *Strix nebulosa* (breeder), Ural Owl *Strix uralensis* (short-distance migrant), Eurasian Pygmy Owl *Glaucidium passerinum* (possible breeder), Ring Ousel *Turdus torquatus* (passage migrant), and Adder *Vipera berus* (breeder).
In addition to these, the following bird species have been observed in Kandalaksha Bay and its shore zone: the Greylag Goose *Anser anser*, Brent Goose *Branta bernicla*, Steller's Eider *Polysticta stelleri*, Eurasian Dotterel *Eudromias morinellus* (breeding in mountain tundra), Arctic Squa *Stercorarius parasiticus*, Wood Pigeon *Columba palumbus*, and White-throated Dipper *Cinclus cinclus* (breeding).
The site supports wintering grounds of the Cod Gadus morhua; spawning grounds of the Herring Clupea harengus and other valuable fish species; migration routes of salmon *Salmo salar* and whitefish *Coregonus lavaretus* to their spawning grounds.

23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

On the coastal and marine parts of the site, the local population practices traditional forms of biological resource management; there are sacred places, such as *seida* megalithic forms and mazes there. The local population catch fish (cod, herring, salmon, and other fish species), collects berries and mushrooms; uses driftwood and other materials brought by the sea in their households. The bay has been used for boat traffic.

Coasts of the mainland and islands keep unique geological monuments of nature – outcrops of very old granitoids with xenoliths of even older formations; massifs of gabbro and metagabbro-labradorites of various structure, metamorphism intensity, and deformation; massifs of folded gabbro-norites in contact with gneisses, migmatites, and pegmatites; carbonatite dikes with xenoliths (debris) of older rocks (Карпович 1984).

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box ❑ and describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

a) within the Ramsar site:

The waters of the Kandalaksha Bay and most of its coast is owned by the state. Small areas of the coast are municipally owned.

b) in the surrounding area:

Data is not available

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25. Current land (including water) use:

a) within the Ramsar site:

In 1932 the Kandalakshsky State Nature Z*apovednik* was established in the southern part of the Kandalaksha skerries aimed at the research, conservation, and restoration of the Common Eider. Later, its area was expanded several times. Presently, the Kandalakshsky State Nature Z*apovednik* covers an area of 70,500 ha. Territory of the Kandalakshsky State Nature Z*apovednik* is excluded from economic activities.

In the settlements on the coastal part of the Ramsar site aluminum plants, maintenance workshops for the fishing fleet and railroad, fish and timber processing plants, and fish farms are located. Agriculture is poorly developed.

Kandalaksha Bay is used for navigation in all seasons of the year as a seaway to the towns of Kandalaksha and Vitino.

b) in the surroundings/catchment:

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26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

a) within the Ramsar site:

At present, the pollution of the site is highly local in the Kandalaksha seaport and settlements at the border of the site; it neither spreads out nor affects marine biocenoses.

Regular counts of breeding birds on protected islands and sea stretches indicated that, presently, bird numbers have been changing, mainly, for natural reasons. Human impact is mainly indirect. The most crucial impact is that Herring Gulls feed on kitchen wastes in coastal settlements, primarily in the town of Kandalaksha. Prior to the 1990s this feeding base supported growing numbers of Herring Gulls that breed on the protected islands. At the breeding grounds, they adversely affected broods of diving ducks, Oystercatchers, and Common Gulls, as they killed most of their chicks. As a result, numbers of these species decreased. During the last 10 years, Herring Gulls have become somewhat less numerous, but the impact on their neighbors has not mitigated.

A local negative impact on ducks was once put by muskrats that bred for several years in lakes of islands; large numbers of American minks and red foxes are still a threat.

Potential affecting factors are growth of the all season sea traffic and associated development of the seaports in Kandalaksha and Vitino. Transportation of oil products and gas condensate by tankers implies a certain risk for the Ramsar site.

b) in the surrounding area:

Data is not available

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27. Conservation measures taken:

The area was designated as a wetland of international importance by the Government of the USSR on 25 December 1975 (Decree No. 1049) and confirmed by the Government of the Russian Federation on 13 September 1994 (Resolution No. 1050). The Kandalakshsky State Nature *Zapovednik* was established in 1932.

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

About 31% (67,965 ha) of the Ramsar site's area is protected in the boundaries of the Kandalakshsky State Nature *Zapovednik* (70,500 ha, IUCN category Ia).

Four monuments of nature are located on the islands and coast of the site (a hydrological, two geological, and a botanical forest), (IUCN category: III).

The borders of the Ramsar site coincide with the Important Bird Area of international importance "Kandalaksha Bay" (Ключевые орнитологические территории…2000).

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ☒;Ib ❑; II ❑; III ☒; IV ❑; V ❑; VI ❑

c) Does an officially approved management plan exist; and is it being implemented?: No.

d) Describe any other current management practices:

Under development.

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28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

To prevent accumulation of pollution and emergency spills, should be considered a possibility to develop a system of management measures aimed to strengthen of the wetland conservation regime.

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29. Current scientific research and facilities:

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The first scientific research in Kandalaksha Bay dates back to the 18th century, the period of 'great academic expeditions' (Ozeretskovsky 1773). In the 19th century, A.F. Middendorff made a brief visit to the area (Middendorff 1843). More detailed surveys were conducted during the 1867 expedition of M.N. Bogdanov (Pleske 1887) and, later, G.F. Goebel (1902).

Regular research into the Kandalaksha avifauna began in 1932, when the nature reserve was established there. However, they were rather fragmentary till late in the 1940s. Detailed faunal and ecological monitoring studies began in 1948 and continued to the present day. In recent years, they have been carried out by eight researchers of the Kandalakshsky State Nature *Zapovednik*. The research results have been published in the transactions and reports of the Kandalakshsky State Nature *Zapovednik,* other symposia; they were included in monographies on birds of the USSR, migrations of East European and North Asian birds; and reported at numerous conferences and workshops.

In addition to ornithological research, other zoological and botanical studies have been carried out by the staff of the reserve and biological stations of the Zoological Institute RAS and universities of Moscow and St. Petersburg located at the coast of Kandalaksha Bay, as well as by experts of other institutions.

In 2003-2007 scientific investigations in the Kandalakshsky State Nature *Zapovednik* were mainly carried out in the framework of the *Records of Nature (Летописи природы)* programme.

In addition to that, detailed studies of breeding Goldeneyes and moulting Common Teals *Anas crecca* have been carried out, as well as those of the ecology of mice, shrews, and some groups of insects.

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30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

In addition to popular books about the nature of the Kola Peninsula written by local authors in recent decades, ecological information has been published by the research staff of the reserve and

institutes of the Kola affiliation of the Russian Academy of Sciences, Murmansk Oblast Hydrometeorological Department, and other experts.

Local and provincial newspapers of the Murmansk Oblast and the town of Murmansk regularly publish materials of experts from local research institutions. Local radio and television and (periodically) national published and broadcasting media are used as well. The staff of the Kandalakshsky State Nature *Zapovednik* give public lectures in Kandalaksha and other towns and villages.

Students of various universities and high schools, young naturalists of the Laboratory of Marine Benthos Ecology (St. Petersburg Municipal Children's Creative Workshops, headed by V.M. Khaitov, A.V. Poloskin), School No. 2 of Kandalaksha (headed by E.G. Vorobieva), School No. 20 of Luvenga (headed by T.Yu. Zhulai), and School No. 45 of Murmansk (headed by E.N. Nabokova) work on the islands of the northern inspection of the Kandalakshsky State Nature *Zapovednik* (field stations on Island Ryashkov and off the village of Luvenga). There are no other visitors to the Kandalakshsky State Nature *Zapovednik*, except on islands bordering the town of Kandalaksha and the village of Luvenga that also have a special protection regime. The Kandalakshsky State Nature *Zapovednik* regularly publishes booklets and calendars with descriptions of the site and numerous photos.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Annually from 2000 to 2500 local people and tourists from other areas visit the Nature Museum of the Kandalakshsky State Nature *Zapovednik*.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Government of the Murmansk Oblast, Ministry of Natural Resources and Environment of the Russian Federation

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

The Kandalakshsky State Nature *Zapovednik*, 184040 Murmansk Oblast, Kandalaksha, ul. Lineinaya 35). Phone: (815-33) 92319 Fax: (815-33) 932-50 E-mail: kand_reserve@com.mels/ru), Government of the Murmansk Oblast.

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

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Please return to: **Ramsar Convention Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • e-mail: **ramsar@ramsar.org**