

Tentative List

Name of country: Russian Federation

List drawn up by: Ministry of Natural Recourses of the RF

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NAME OF PROPERTY GEOGRAPHICAL LOCATION

The Commander Islands (Comandorsky State Nature Reserve)

The Commander Islands are situated in the north-western part of Pacific Ocean bounding the Bering Sea from the south and being the western extremity of the Aleutian Arc.

Archipelago: 55°25' - 54°31' N; 165°45' - 168°06' E

Water area: 55°55' - 54°01' N; 164°52' - 168°58' E.

The territory of Comandorsky Reserve proposed for inscription on the World Heritage List equals to 3,648,679 ha.

DESCRIPTION

The Commander Islands archipelago consists of 15 islands of different size from 1667 km² to less than 0.5 km² which are crowns of a huge submarine volcanic ridge extending from Alaska to Kamchatka. The most ancient Commander structures are dated as the beginning of Paleogene (60-70 million years ago). Now low hills and coniform mountains occupy the most part of the Islands' territory. The highest point of the largest Bering Island is the Steller peak (755 m). The most part of river valleys (except the greatest ones – as a rule formed along fractures) is cut short by a coastal scarp forming picturesque waterfalls 10-100 meters high.

Climate is characterized by mild winter (- 4°C in February) and cool summer (+ 10.5°C in August) with short intermediate seasons; low precipitation, constantly high relative humidity of air and strong winds.

The Commander elevation shelf and continental slope are characterized with very abrupt depth: in the limits of 30 miles from the shores all the depth diapason can be observed – from littoral to ultraabysal. It could be mentioned that about 1,000 macrobenthic species inhabit the most studied shallow shelf zone (up to the depth of 40 m) only.

As for inland waters the two large islands have well-developed drainage network with one navigable river, and Toporkov and Ariy Kamen' are absolutely devoid of fresh water.

According to the last data 389 species of vascular plants have been registered in the Commander Islands' flora, relating to 183 genera and 63 families. In the system of floristic zoning the Commander Islands are related to the Commander-Aleut region of Kamchatka province of Boreal floristic area.

There are 203 bird species registered on the Commanders according to the last data, including 58 nesting ones. There is a number of endemic forms and it is the only place in Russia where a number of American birds are regularly reproducing.

Fauna of the marine mammals is extraordinary diverse. 32 species of 13 families and 4 orders has been registered there. About 50% of marine mammal fauna representatives are regarded as rare and needing special protection: 12 species are enlisted into the IUCN Red List and another 2 species – into the Red Book of Russia.

Arctic fox is the only aboriginal species of terrestrial mammals inhabiting the Commander Islands. There are two relict endemic Arctic fox sub-species: Bering Arctic fox - *Alopex lagopus beringensis* and Medny one - *A. l. semenovi*, differing not only by their outward appearance, but also by some ecological and morphological features.

According to preliminary data, the fish fauna of the Commander underwater plateau includes 216 species and subspecies, representing 148 genera, 56 families and 20 orders.

JUSTIFICATION OF “OUTSTANDING UNIVERSAL VALUE”

The Commanders can be considered as the connecting link between Asia and North America - a bridge along which plants and animals were settling apart. One of the unique features of the archipelago is the specific combination of Asian and American species co-existing here on the Islands. Besides a number of endemic species, subspecies and forms of mammals, birds, fishes, invertebrates and plants have been found on the Commanders (Medny Arctic fox *Alopex lagopus semenovi*, Bering Arctic fox *A. l. beringensis*, rock ptarmigan *Lagopus mutus ridgwayi*, rock sandpiper *Calidris ptilocnemis quarta*, ancient murrelet *Synthliboramphus antiquus microrhynchos*, winter wren *Troglodytes troglodytes pallescens*, gray-crowned rosy finch *Leucosticte tephrocotis maxima* etc).

Terrestrial vegetation is extremely peculiar. Evolution of the mountain tundra ecosystems, covering nowadays most part of the islands, took place in the absence of permafrost and influence of phytophagous animals what is untypical for such communities on the continent.

Places of fattening and spawning migrations of salmon are located within the archipelago water area. Salmon inhabiting the Commander Islands make up a variety of morpho-ecological forms: typical anadromous, freshwater and dwarf ones. Some of ecological adaptations acquired by them are unique as a result of specific and unstable living conditions.

Unique significance of the Commander underwater plateau is in conservation of original living conditions of fish communities and other marine organisms, practically untouched by fishery for many decades. Coastal zone and water area of the Commander Islands are known for the remarkable biodiversity of marine mammals (there are representatives of almost all the families) and seabirds; many of them form large rookeries or colonies with the total number of about 1,000,000. In Russia there are no other examples of such dense concentrations of mammals and birds of different species on a really small area. The coastal zone is of great importance for migrating, transition and wintering birds. It is also a place of fattening, wintering or migration paths of not less than 14 species of toothed and 7 species of baleen whales.

In the Commander Islands coastal zone peculiarities of the bottom relief and hydrological regime as well as diversity of different types of habitats and insignificant square of shallow waters are setting conditions for specific vertical distribution of species (their transition to higher horizons), specific horizontal spatial location of the communities (mosaic structure) and formation of extremely peculiar biocenotic structure which results in concentration of fauna within a limited space. Almost all the vertical oceanic zones - from littoral to ultraabissal - can be observed here within the distance of only 30 miles away from the coast.

The Commander Islands are famous for outstanding abundance of various paleontological fossils. The entire archipelago coast is a giant burial ground of Steller's sea cow *Hydrodamalis gigas* - the Commander endemic - destroyed by man in the second part of XVIII-th century.

- Criteria met:

N (iv)

Many of the Commander's species are listed in the IUCN Red List and in the Red Book of Russia.

Terrestrial regions of the Islands is home for many rare and endangered species like *Alopex lagopus semenovi*, *Falco peregrinus pealei*, *Falco rusticolus*, *Cypripedium yatabeanum*, *Artemisia insulana* and many others. Some of them (*Alopex lagopus semenovi*, *A. l. beringensis* - endemics of the Commanders) are of great scientific interest.

Extremely rare island population of king salmon *Oncorhynchus tshawytscha* is registered on the Bering Island - only one more such population is known within the species' range.

About 50% of marine mammal fauna representatives are regarded as rare ones and needing special protection: 12 species are enlisted into the IUCN Red List and another 2 species – into the Red Book of Russia. In the coastal zone rookeries of many marine mammals as well as multi-thousand colonies of seabirds are located. There are rookeries of the northern fur seal *Callorhinus ursinus* (one of the 3 populations known in the world) and Steller's sea lion. The Commander fulmar *Fulmarus glacialis* population is among the greatest ones in the Northern Pacific; red-legged kittiwake population (an endemic of the Bering Sea) is one of the 4-th still existing in the world.

Non-freezing coastal waters around the Commanders are the only place in Russia where emperor goose *Philacte canagica* is regularly wintering. Coastal waters are also a place of fattening, wintering or migration paths of many whale species, including *Physeter catodon*, *Orcinus orca*, seiwhale, fin-whale, humpbacke whale, etc.

Being a natural polygon without any fishery, water area around the Commander Islands can become a sanctuary for species threatened and diminishing in the other regions as well as it can become an object of ecosystem researches and can help in studying adjacent regions' biocenosis, which have undergone human impact.

N (ii)

Processes of evolution of unique mountain tundra ecosystems and processes of formation and sustainable functioning of extremely concentrated multi-species' communities of marine and terrestrial mammals and birds present extraordinary scientific and environmental interest.

The Commander Arctic fox subspecies (*Alopex lagopus semenovi*, *A. l. beringensis*) are probably the most ancient absolutely isolated canids' populations. They are interesting as for evolution study of this mammals' group as for investigation of speciation process features taking place under the conditions of prolonged island isolation. The Medny Arctic fox (*Alopex lagopus semenovi*) population can be regarded as a natural model of "minimum viable population" and so be used for analyses of actual problems of conservation biology.

The unique coastal zone of the islands with it's diverse communities is highly isolated from both Kamchatka and Aleutian and it is possible to consider that micro-evolutional processes are still taking place there.

N (i)

Commanders are located at the edge of the Aleutian Islands' arc and are separated from Kamchatka by the wide deep strait. So it is the only place in the world where the wide range of questions dealing with the structure and dynamics of the island arcs' lithosphere basement can be studied by means of geophysical methods. It is the only place in the world where the unique geological material – beringit – has been found.

Burial of remains of Steller's sea cow *Hydrodamalis gigas* is unique for its scientific value and can be compared with the famous dinosaur "cemeteries" in Central Asian and North American deserts. Here is also a great accumulation of marine mammals bone remains, including rare ones: Cuvier's beaked whale *Ziphius cavirostris*, Bering Sea beaked whale *Mesoplodon stejnegeri*, Baird's whale *Berardius bairdi*, blue whale *Balaenoptera musculus* and right whale *Eubalaena glacialis*.

N (iii)

Commander's landscapes are unusually beautiful. Quaint sea cliffs, bluffs and rock exposures, expanses of the plain tundra, low-mountain massifs with abrupt slopes and narrow valleys of numerous rivers and streams, forming dozens of picturesque waterfalls, changeable marine sceneries and even frequent fogs - all these features create the wonderful attractive image of the Commanders. Ceaseless rumpus of numerous birds' colonies on the sea-shores, animals trustfulness, rookeries of marine mammals and salmon spawning grounds supplement the scene.

- Assurances of authenticity or integrity:

The Commanders due to their late populating, absence of background pollution (the Commanders are located far away from intensive transport routes and industrial centers), rich history of nature conservation (since 1958 all kinds of commercial activities including commercial harvesting of fish and other marine organisms were prohibited within the 30-mile protection zone around the Commander Islands) and difficult access are characterized by a high level of ecosystems' conservation in whole.

The Commander Islands and surrounding water area present the single marine-terrestrial natural macro-complex. Its main components are closely interconnected by common origin, history of development and evolution dynamics, and the ecological peculiarities as well. Its integrity and good conservation is stipulated by the Russian legislation and the State Biosphere Reserve established in 1993 within all the territory and water area of the nominating site.

-Comparison with other similar properties:

Peculiarities of their natural complexes make it possible to consider the Commander Islands as unique ones that have no analogues.

The Commander Islands are a part of the Aleutian Arc and at the same time they are situated not far from the Kamchatka eastern coast. Having some common features with the named territories, the Commanders differ from both of them fundamentally: from Kamchatka – by climate, plant cover and faunistic composition; from the Aleutian Islands – by faunistic composition, great multispecies accumulations of marine mammals and seabirds, coastal hydrological regime, history of settlement and development.

The Commander Archipelago has no analogues in possibilities of organization of complex investigations on structure and dynamics of the islands' arcs basement lithosphere.