IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 13 January 2015

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# Natural System of Wrangel Island Reserve

## SITE INFORMATION

Country:
Russian Federation
Inscribed in: 2004
Criteria:
(ix) (x)

Site description:

Located well above the Arctic Circle, the site includes the mountainous Wrangel Island (7,608 km2), Herald Island (11 km2) and surrounding waters. Wrangel was not glaciated during the Quaternary Ice Age, resulting in exceptionally high levels of biodiversity for this region. The island boasts the world's largest population of Pacific walrus and the highest density of ancestral polar bear dens. It is a major feeding ground for the grey whale migrating from Mexico and the northernmost nesting ground for 100 migratory bird species, many endangered. Currently, 417 species and subspecies of vascular plants have been identified on the island, double that of any other Arctic tundra territory of comparable size and more than any other Arctic island. Some species are derivative of widespread continental forms, others are the result of recent hybridization, and 23 are endemic. © UNESCO

# SUMMARY

## 2014 Conservation Outlook

**Significant concern**

While the existing management regime has been effectively maintaining the values of the remote and nearly uninhabited Wrangel Island Reserve since its inscription as a World Heritage site in 2004, and while these values appear intact, the long-term conservation outlook of the property mainly depends on the impact of emerging threats – construction of a military base on the island, geophysical prospecting for oil in the immediate site vicinity, as well as climate change.

## Current state and trend of VALUES

**Low Concern**
**Trend: Data Deficient**

The current state of the World Heritage values appears to be of low concern as no major deterioration has been reported since inscription. The overall trend of most of the values appears stable although a systematic monitoring system for climate change impacts is not operational yet and some trends may thus have escaped detection. In the light of evidence of negative impacts of climate change on some of the values of the property, the lack of an effective monitoring system for this major potential threat leads to an assessment of the trend of the World Heritage values as Data Deficient.

## Overall THREATS

**High Threat**

The property has enjoyed a period of very limited anthropogenic impact since the designation of Wrangel Island Reserve in 1975, and its values are in a satisfactory state as a result. However, emerging threats including climate change, and potentially unsustainable tourism and potential oil/gas exploration/exploitation, might soon compromise some of these values and

require close surveillance and possibly a targeted management response.

## Overall PROTECTION and MANAGEMENT

**Some Concern**

The property has enjoyed a period of limited anthropogenic pressure since the establishment of Wrangel Island Nature Reserve in 1975, which allowed it to maintain the integrity of its values in spite of a relatively poorly resourced management regime. However, a number of emerging threats from climate change, tourism development and potentially oil exploration/exploitation may increasingly challenge this regime and require its strengthening in key areas.

# FULL ASSESSMENT

## Description of values

### Values

### World Heritage values

- **Exceptional example of an Arctic island ecosystem with exceptionally long-lasting succession**
  **Criterion:(ix)**

  Ecological succession at Wrangel Island has been uninterrupted by glaciation (Gualtieri et al. 2005), which has lead to a unique diversity of ecosystems, communities and habitats on the island (Sekretareva, 1994, 1998; UNEP-WCMC, 2011). As a result, Wrangel Island has the highest biodiversity of any high Arctic Island (UNEP-WCMC, 2011).

- **Exceptional example of past and ongoing speciation**
  **Criterion:(ix)**

  Wrangel Island holds an unparalleled 21 species and 4 subspecies of endemic flora (Petrovsky, 1997), numerous endemic invertebrate species and several endemic vertebrate subspecies or isolated populations considered to be in the process of speciation, such as the Wrangel Lemming (UNEP-WCMC, 2011; WHC, 2004).

- **Exceptionally rich Arctic plant diversity and endemism**
  **Criterion:(x)**

  417 plant species and sub-species of vascular plants, including 21 endemic species and 4 endemic subspecies (UNEP-WCMC, 2011), 331 moss and 310 lichen species (MoNRE of the RF, 2012), and northernmost occurrence of several plant communities (Sekretareva 1994, 1998). Highest plant diversity

in the high Arctic (MoNRE of the RF 2012).

▶ **Exceptionally diverse Arctic invertebrate fauna**
**Criterion:(x)**

Invertebrate fauna very rich for Arctic standards, includes 31 species of spider, 58 species of beetles, and 42 species of butterflies, including many species that are usually only found much further South (UNEP-WCMC, 2011).

▶ **Exceptionally diverse Arctic avifauna**
**Criterion:(x)**

170 bird species recorded, 62 of which breed on Wrangel Island (MoNRE of the RF 2012). Possibly two endemic bird (sub-)species (Directorate of Wrangel Island Reserve, 2003). Very high bird diversity in comparison with other Arctic sites (UNEP-WCMC 2011). Important stopover on Pacific-Beringia flyway of bird mirgration (Alerstam et al., 2007; Hedenstrom et al., 2009; UNEP-WCMC, 2011). Only large breeding accumulation of Snow Goose Chen caerulescens in Asia (Boyd & Cooke, 2000; UNEP-WCMC, 2011).

▶ **Exceptionally diverse and abundant terrestrial and marine Arctic mammal fauna**
**Criterion:(x)**

Seven species of resident terrestrial mammals, largest population of Polar Bear Ursus maritimus (350-600 dens on Wrangel Island and another 100 dens on Herald Island) (UNEP-WCMC, 2011). Largest rookeries of Pacific Walrus Odeobenus rosmarus, with up to 10,000 individuals (UNEP-WCMC, 2011). Several additional species of marine mammals in the vicinity, including Grey Whale Eschrichtius gibbosus and Finback Whale Balaenoptera physalus (EN) (UNEP-WCMC, 2011).

## Assessment information

### Threats

## Current Threats

**High Threat**

Human impact within Wrangel Island Reserve has been minimal and localized for a long time (IUCN 2004). However, construction of a military base on the island and oil prospecting in its vicinity that have recently begun represent very serious threats to the site's values and integrity.

### ▶ Invasive Non-Native/ Alien Species

**Low Threat**
**Inside site**

Reindeer herds led to localized overgrazing of tundra vegetation and trampling damage to nesting birds (UNEP-WCMC, 2011). This might recur if reindeer or muskoxen populations recover.

### ▶ Solid Waste

**Data Deficient**
**Inside site**
**Outside site**

There is a waste dump near Ushakovskoe, the size and impact of which is unclear – but probably limited, reflecting the limited population/personnel at the settlement (UNEP-WCMC, 2011).

### ▶ Roads/ Railroads

**Very Low Threat**
**Inside site**
**Outside site**

Numerous tracks from before the designation of the Reserve are still visible; current policy is to use existing tracks (IUCN, 2004).

### ▶ Housing/ Urban Areas

**Low Threat**
**Inside site**

There are some abandoned military and civilian settlements from before the reserve’s designation, some with waste and contained oil accumulations

(IUCN 2004). They have little impact on the ecosystem in their vicinity and there are plans to successively remove abandoned settlements and waste (MoNRE of RF 2011).

### ▶ Oil/ Gas exploration/development

**High Threat**
**Inside site**
**Outside site**

Geophysical prospecting that is being conducted in the vicinity of the site might have serious negative impacts, particularly on some marine mammals and some bird species (Programme of complex geophysical investigations in the areas of "Northern Wrangel -1", "Northern Wrangel - 2" and "Southern Chukchi" in 2014-2015, in Russian).

### ▶ War, Civil Unrest/ Military Exercises

**Very High Threat**
**Inside site**

Construction of a naval military base began on Wrangel Island in late 2014 (various news sources, e.g. http://www.themoscowtimes.com/business/article/russia-starts-building-military-bases-in-the-arctic/506650.html). This can have very serious impacts on the fragile environment of the island not only during the construction phase, but also due to continuous human presence during its future operation.

## Potential Threats

**High Threat**

There are several potential threats which might increasingly compromise the integrity of the property’s values, unless appropriate measures to assess and control them are taken. The extent to which climate change affects the values of the property needs to be measured more systematically, and tourism development could become a threat unless planned carefully and based on a rigorous EIA.

### ► Temperature changes

**High Threat**
**Inside site**
**Outside site**

Although a marked reduction of sea ice cover in the Arctic Ocean (Stroeve et al., 2012) and climate change induced shifts in the terrestrial environment of the high Arctic (Prowse et al., 2009) have been documented, and although secondary effects of these phenomena on terrestrial ecosystems (Jia et al., 2009) and Arctic marine mammals (Gleason & Rode, 2009; Schliebe et al., 2008) have been found in other locations of the high Arctic, only very limited data linking the status of natural values to climate change are available from the property. The only exception is anecdotal evidence of increased walrus mortality during a year of marked pack-ice retreat (Ovsyanikov et al., 2007). Therefore, these effects of climate change are considered potential – if highly likely – threats to the property (UNEP-WCMC, 2011).

### ► Tourism/ visitors/ recreation

**High Threat**
**Inside site**

Although currently relatively tightly controlled and localized (MoNRE of RF, 2012), disturbance and artifact removal by tourists have had a noticeable effect in the past and might increase, if accessibility and visitor numbers increase (IUCN, 2004). There are plans (status unclear) to develop tourism infrastructure (including trails) and increase visitation to the island(MoNRE of RF, 2011). Some tourist accommodation is apparently already under construction (WHC, 2012 – SOC Report).

### ► Commercial hunting

**Low Threat**
**Inside site**

The property is near the northern margin of the occurrence of several mammal species of the property and hunting them might have a devastating effect on these marginal and vulnerable populations (IUCN, 2004).

## Protection and management

### Assessing Protection and Management

#### ▶ Sustainable use

**Some Concern**

Property used for reindeer herding and tourism, but sustainable management measures for either unclear. Potential for overgrazing and disturbance by tourists noted in the past (UNEP-WCMC, 2011).

#### ▶ Relationships with local people

**Mostly Effective**

Only two local families present – majority of property uninhabited. Generally limited potential for conflict, because of extremely small population.

#### ▶ Legal framework and enforcement

**Mostly Effective**

Wrangel Island and Herald Island designated as Strict Nature Reserve (Zapovednik) by Decree 189, 1975 (UNEP-WCMC, 2011). Enforcement by Reserve staff generally considered effective, but some damage from careless behavior of rotational staff on site (IUCN, 2004).

#### ▶ Integration into regional and national planning systems

**Mostly Effective**

Property relatively isolated. 2009-13 management plan linked to wider plan for sustainable development of Chukhot Autonomous Region. Included into national 3-yr plan for high-priority PAs in the Russian Federation (MoNRE of RF, 2011). However, practical integration into national planning system has also been reported as weak (IUCN, 2004).

#### ▶ Management system

**Mostly Effective**

“Wrangel Island Mid-term Management Plan for 2009 – 2013” was submitted to WHC in 2009 (MoNRE, 2008) and was considered a substantial management plan but is lacking in-depth tourism plan (particularly serious in light of current tourism development projects) and clear provisions on climate change impact monitoring (WHC, 2009). A new management plan for 2013-2017 has now been prepared, which includes analysis of tourism carrying capacity and a detailed tourism management plan.

### ► Management effectiveness

**Mostly Effective**

Values of site are sufficiently protected overall currently (IUCN, 2004), even if this owes more to lack of anthropogenic pressure than active management.

### ► Implementation of Committee decisions and recommendations

**Some Concern**

Request of WHC at 28.COM to complete and submit management plan for the property mostly met by 33.COM, but Ministerial approval of the plan was unclear at that time.

### ► Boundaries

**Mostly Effective**

Boundaries generally sufficient, but exclude Ushakovskoe settlement and immediate surroundings. 12 nautical mile MPA around islands included in property based on Instruction 1623 of GoRF, but extended 24 nautical mile MPA around the site later withdrawn (UNEP-WCMC; 2011).
ОХРАННАЯ ЗОНА 24 МОРСКИХ МИЛИ УСТАНОВЛЕНА ПРИКАЗОМ МИНИСТРА ПРИРОДНЫХ РЕСУРСОВ 1.07.2013 ГОДА

### ► Sustainable finance

**Some Concern**

No up-to-date figures on sustainable finance of property available. Annual funding from State budget some $35,000 in 1999 (plus some income from visitor fees). Finances considered a major management constraint (UNEP-WCMC, 2011).

В 2013 ГОДУ БЮДЖЕТ СОСТАВИЛ $1 143 000. КРОМЕ ТОГО ВЫДЕЛЕНО НА 2013 ГОД ЕЩЕ ДОПОЛНИТЕЛЬНОЕ ФИНАНСИРОВАНИЕ НА СТРОИТЕЛЬСТВО ДВУХ НОВЫХ ДОМОВ

### ► Staff training and development

**Some Concern**

Staff of 20 including 3 scientists and 2 educational staff at inscription (mostly stationed outside the property) (UNEP-WCMC, 2011), 7 security inspectors being trained according to management plan (WHC, 2008), but no further information on staff training and development programmes available.

### ► Education and interpretation programs

**Mostly Effective**

Property remote and very small local population. Two environmental education staff at inscription (UNEP-WCMC, 2011). Ecological museum and interpretative trails are being planned (MoNRE of RF, 2011).

### ► Tourism and interpretation

**Mostly Effective**

Property remote and little visited (up to three groups annually currently – MoNRE, 2012). New or renovated tourism accommodation, ecological museum and interpretative trails are being planned or constructed (MoNRE of RF, 2011, WHC, 2008).

### ► Monitoring

**Some Concern**

Weather monitoring at Ushakovskoe, regular research with a monitoring effect on 15 animal species (particularly Polar Bear, Snowy Owl, Snow Goose), vegetation cover, condition of watercourses, historical objects (UNEP-WCMC, 2011; WHC, 2012), but systematic long-term general and climate change impact monitoring programme merely planned, not operative (UNEP-WCMC, 2011; WHC, 2008).

### ► Research

**Mostly Effective**

Relatively extensive scientific research programme (particularly on Polar Bear, Snowy Owl, Snow Goose) since establishment of the reserve, mainly being carried out by visiting scientists, but full potential of property for research not met (UNEP-WCMC, 2011).

### Overall assessment of protection and management

**Some Concern**

The property has enjoyed a period of limited anthropogenic pressure since the establishment of Wrangel Island Nature Reserve in 1975, which allowed it to maintain the integrity of its values in spite of a relatively poorly resourced management regime. However, a number of emerging threats from climate change, tourism development and potentially oil exploration/exploitation may increasingly challenge this regime and require its strengthening in key areas.

#### ▶ Assessment of the effectiveness of protection and management in addressing threats outside the site

**Some Concern**

A number of threats from outside the site's boundaries have recently emerged with oil prospecting being the most serious one. It is unclear to what degree it can be mitigated at the level of site management.

#### ▶ Best practice examples

Integration of “Wrangel Island Mid-term Management Plan for 2009 – 2013” in the wider plan for sustainable development of Chukhot Autonomous Region (WHC, 2008).

## State and trend of values

### Assessing the current state and trend of values

#### World Heritage values

▶

### Exceptional example of an Arctic island ecosystem with exceptionally long-lasting succession

**Low Concern**
**Trend:Stable**

The overall ecosystem values of the property have remained undisturbed since the creation of Wrangel Island Nature Reserve and no major negative trends have been reported since. No negative impacts of climate change on terrestrial ecosystems of the property were reported in 2012 (SOC Report 2012), although some limited impacts may have gone undetected, due to the incomplete monitoring system.

### ▶ Exceptional example of past and ongoing speciation

**Good**
**Trend:Stable**

The overall value of the property as a speciation hotspot has remained intact since the creation of Wrangel Island Nature Reserve and no major negative trends have been reported since.

### ▶ Exceptionally rich Arctic plant diversity and endemism

**Low Concern**
**Trend:Stable**

No deterioration of conservation status of any plant species or community has been reported since inscription, partly due to reduction of grazing pressure on the property. However, a recovery of reindeer and muskoxen standing stock has been reported recently (UNEP-WCMC, 2011).

### ▶ Exceptionally diverse Arctic invertebrate fauna

**Good**
**Trend:Data Deficient**

No deterioration of conservation status of any invertebrate species or community has been reported since inscription, but there is no monitoring of these species. (UNEP-WCMC, 2011).

### ▶ Exceptionally diverse Arctic avifauna

**Low Concern**
**Trend:Stable**

No deterioration of conservation status of any bird species or community has been reported since inscription, partly due to reduction of trampling by livestock on the property (which affects Snow Geese). However, a recovery of reindeer and muskoxen standing stock has been reported recently (UNEP-WCMC, 2011).

### ► Exceptionally diverse and abundant terrestrial and marine Arctic mammal fauna

**Low Concern**
**Trend:Data Deficient**

Some evidence of increased Pacific Walrus mortality, which may not be systematically monitored, possibly due to sea ice retreat, in 2007 (Ovsyanikov, 2007). No reports about negative population trends in other mammals of the property although in general, sea ice retreat following climate change is known to also affect Polar Bears (Gleason & Rode, 2009).

## Summary of the Values

### ► Assessment of the current state and trend of World Heritage values

**Low Concern**

**Trend: Data Deficient**

The current state of the World Heritage values appears to be of low concern as no major deterioration has been reported since inscription. The overall trend of most of the values appears stable although a systematic monitoring system for climate change impacts is not operational yet and some trends may thus have escaped detection. In the light of evidence of negative impacts of climate change on some of the values of the property, the lack of an effective monitoring system for this major potential threat leads to an assessment of the trend of the World Heritage values as Data Deficient.

# Additional information

## Key conservation issues

### ▶ Lack of an effective systematic monitoring system for climate change impacts on the values of the properties

**Local**

Climate change is likely to become the most important long-term threat to the values of Wrangel Island. Although a number of long-term research activities on the island on selected vertebrate species allow deducing long-term trends of the species concerned, there still appears to be no broad long-term monitoring system for climate change impacts on all the key terrestrial and marine biodiversity values of the property. General plans to develop such a system were reported in 2008 (WHC, 2008) but their current status is unclear (WHC, 2012). Such a monitoring system would be an indispensable prerequisite to detect climate change related threats to specific values of the property, might enable the management authority to take adaptive action in some cases, and would also be of significant global interest.

### ▶ Potential threat of oil exploration/exploitation in the immediate vicinity of the property

**Local**

Geophysical prospecting for oil was being conducted in the vicinity of the property in 2014 and is also planned for 2015. The level of impact of these activities on the site can potentially be very high, but needs to be evaluated.

## Benefits

## Understanding Benefits

### ▶ Is the protected area valued for its nature conservation?

The considerable nature conservation values are reflected by the sites

designation as a Nature Reserve and inscription as a World Heritage site.

▶ **Fishing areas and conservation of fish stocks**

No information on coastal fisheries around Wrangel Island is available but it is likely that some fisheries activities are ongoing.

▶ **Does management of the site provide jobs (e.g. for managers or rangers)?**

The Reserve offers 27 jobs (UNEP-WCMC, 2011) in a remote area with little population.

▶ **Livestock grazing areas**

Livestock grazing on the property (reindeer and muskoxen) has first declined and then started to recover again (UNEP-WCMC, 2011). It is likely to contribute significantly to the livelihoods of the few local inhabitants.

▶ **Outdoor recreation and tourism**

Tourism is practiced at low intensity on site and there are plans to moderately upgrade tourism use (MoNRE of RF, 2011; WHC, 2012). If developed in a responsible way, the site may offer a unique opportunity to experience the Arctic, but only for a limited number of people.

▶ **Importance for research**

The site has already contributed significantly to the overall scientific understanding of the Arctic (UNEP-WCMC, 2011). Additionally, it may turn into a biological climate change impact monitoring centre (IUCN, 2004), if the required monitoring programmes are developed.

### Summary of benefits

Due to its remoteness, extremely low population and hostile conditions, Wrangel Island Reserve offers only limited direct benefits. This is likely to stay unchanged. At the same time, the property is of considerable value not only to nature conservation, but also to science (a role that could be further

strengthened) and as a place to experience the natural beauty of the Arctic.

## Projects

### Compilation of active conservation projects

| № | Organization/ individuals | Project duration | Brief description of Active Projects |
|---|---|---|---|
| 1 | Administration of Wrangel Island Nature Reserve | | Various research projects on the ecosystem and biota of the property (some with direct relevance to conservation), partly in cooperation with Russian universities and research institutes; see (MoNRE of RF, 2011) for list. |

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