

**Ramsar Advisory Mission N°93 (2019)**  
**Kurgalsky Peninsula, Russian Federation**  
**Wetland of International Importance N°690**  
11 - 15 November 2019

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## Executive Summary

1. In July 2017, environmental organisations contacted the Secretary General of the Ramsar Convention on Wetlands with a complaint about a violation of the Convention by the planned construction of the Nord Stream 2 gas pipeline across the *Kurgalsky Peninsula Wetland of International Importance (Ramsar Site)* and a Regional State Nature Reserve (*Zakaznik*) in the Leningrad Oblast, Russian Federation. Following several meetings and correspondence, the Russian Federation Ministry of Natural Resources invited the Ramsar Secretariat (17 October 2018) to organise the first Ramsar Advisory Mission (RAM) to the Russian Federation.
2. Although an amendment to the Resolution governing the Nature Reserve permits i. a. the construction of linear facilities (e.g. power and pipe lines), the RAM aimed to assess the impact of this development on the ecological character of the Ramsar Site, i. e. on its ecosystem components, processes, benefits and services, according to Article 3.2 of the Convention. The RAM Team met on 11-15 November 2019 in situ with the authorities, industry, environmental organizations and local representatives with the following objectives:
  1. To assess possible effects of the trench box pipeline construction method and pipeline laying in the nearshore and onshore on habitats, species and ecological processes.
  2. To review and evaluate the Environmental Monitoring Programme for the operational phase of the pipeline, developed and implemented by the constructor.
  3. To evaluate the measures proposed by the pipeline constructor as part of its Biodiversity Action Plan to support the operations, survey and management of the Kurgalsky Regional State Nature Reserve.
  4. To make specific recommendations regarding the issues above, as well how to improve the scientific knowledge of the Kurgalsky Peninsula and to support and increase, together with regional authorities local capacities and know-how for sustainable Reserve management.
3. The 55,510 ha Ramsar Site covers the shallow coastal waters of the Gulf of Finland with numerous islets around the Kurgalsky Peninsula and the peninsula itself southwards to the Estonian border. Habitats are diverse and the site exhibits a high diversity of flora and fauna, supporting numerous species of regionally or globally threatened plants, mammals, birds, amphibians, reptiles and biotopes of high conservation value. The site is a particularly good representative example of a natural wetland, characteristic of the Boreal region (Criterion 1); and a site that regularly supports 20,000 or more waterfowl (Criterion 5).

### **Ramsar Advisory Mission Objective 1:**

4. The Mission concludes that avoidance and mitigative actions undertaken by the constructor greatly reduced potential impacts of its construction activities. The company efforts to support long-term rehabilitation, restoration and site management of the Kurgalsky Peninsula Ramsar Site and Nature Reserve through its Biodiversity Action Plan are appreciated. Documentation produced by the company represents a substantial body of work that greatly improves the understanding of the dynamics of the Ramsar Site and habitats found within.

5. Although changes were made to the design of the onshore route to reduce both the construction and permanent footprint of the pipeline route across the Kulgalsky Pensinsula Ramsar Site, rehabilitation of the spruce and pine forest habitats is expected to be long-term and unlikely to restore to pre-existing conditions. The topography of the relic dune will only be partially restored requiring installation of slope breakers, and the original micro-topography of the swamp will be difficult to restore but techniques are being attempted to de-compact the peat and re-establish surface drainage patterns. The breakwater in the off-shore part has been removed and rehabilitation of the marine flats and foreshore dunes to pre-existing conditions is expected to occur quickly due to exposure to wave and wind action without long-term impacts.
6. The constructor undertook detailed work to assess project impacts on ground and surface hydrology within an area of influence that extends 1km on either side of the construction corridor. Within Kader bog, removal of the temporary road and reinstatement of cross drainage flows with restoration of an undulating terrain mimicking preconstruction topography will hopefully restore natural drainage patterns and prevent development of a preferential flow path. Coupled with additional mitigative measures, the pipelines in the swamp are not expected to impede groundwater flows.
7. Direct habitat impacts had an immediate effect on their dependent species, e.g. as nesting and foraging habitats. The effect is however at the individual rather than the population level. With revegetation of the construction corridor, wild species will naturally re-occupy the area as appropriate conditions develop. The species composition along the rehabilitated corridor will likely not represent the full complement present pre-construction, as some changes to the habitat will be permanent. However, impacts are believed to be local and will have minimal to no impact on populations within the Ramsar Site as a whole.
8. The Mission highlights the need for regular monitoring of the pipeline operation in order to prevent leaks and accidental outflows of pipeline gas with the potential to create environmental problems.

***Ramsar Advisory Mission Objective 2:***

9. Ecological surveys were conducted in 2015-2017 and in conjunction with the hydrological studies undertaken in 2018-2019. They serve to describe seasonal variations in natural components and processes and provide baseline data on soils, vegetation, local and migratory avifauna, indicator species, and hydrology against which the effects of the pipeline development can be assessed. Environmental monitoring one year after initiation of the construction phase in 2017, reported no detectable impacts on local and migratory avifauna, or on indicator and rare fauna species, with the exception of construction-related disturbance that may have caused the failure of a rare White-tailed Sea Eagle nest in 2019. Monitoring of rare and protected plants along the borders of the construction corridor were assessed as being generally in good condition, although declines in vigor and mortality were noted in some plots. High recreation use of the Nature Reserve in many specific areas of the protected area, mainly outside the construction corridor and not related to the Nord Stream 2 pipeline, was noted as causing damage to ground vegetation throughout the Ramsar Site.
10. The Mission strongly recommends that the Environmental Monitoring Programme be continued during the operational phase of the pipeline, implemented by the constructor in cooperation with the authorities in charge of the management of the protected area.

***Ramsar Advisory Mission Objective 3:***

11. The Mission evaluated the measures proposed by the pipeline constructor as part of its Biodiversity Action Plan to support the Kurgalsky Regional State Nature Reserve, including measures to manage tourist and recreational access, increase public awareness of environmental concerns and natural values, and support local education programmes. The Mission considers that this Plan provides a strong framework and baseline for the formulation of a detailed Management Plan for the Reserve.
12. At the time of the Mission, several component studies providing detail for the Management Plan were still in development. Specifically, those dealing with financial needs to achieve the main elements of the Plan, including infrastructure development, tourism and recreational use management, environmental education and awareness programmes, visitor center development, environmental monitoring, and enforcement. This needs to be clarified soon.
13. To be compatible with Russia's strategy on protected areas as a zone for sustainable development for remote communities, the Mission recommends that safeguards within the Management Plan be established to address sometimes conflicting demands to conserve natural habitats and protect rare and/or threatened species and habitats while promoting economic development and recreational use.
14. The implementation of the long-term Environmental Monitoring Programme needs to be continued and include metrics for short-term outputs and long-term outcomes. Performance indicators should be linked to the objectives of the Management Plan so that progress towards achieving the management objectives can be ascertained.
15. The Mission recommends that for the future management of the Reserve a separate but inclusive administrative body should be established with responsibility for the decision-making process. This body needs to be engaged early in the further development of planning and guidance documents.
16. Commercial tourism in the Reserve should operate within the terms of a contractual agreement with the site management administrative body.
17. The Mission recommends that patrols and enforcement of the regulations be increased to improve compliance with zoning and access regulations.

***Ramsar Advisory Mission Objective 4:***

18. The Mission recalls that success in achieving the biodiversity goals will ultimately depend upon the financial and human resource support to be provided by the Leningrad Oblast authorities and Nord Stream 2 AG for the implementation of the proposed Biodiversity Action Plan and its time-line to achieve a net gain in biodiversity by 2050. To this end, the Mission makes a set of 24 specific Recommendations. They are summarized starting on page 41.

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## Introduction

### ***Ramsar Convention and Ramsar Advisory Mission***

1. In acceding to the Ramsar Convention on Wetlands as Contracting Parties, national governments are agreeing to “...the conservation, management and wise use of wetlands...” as described in Convention Text<sup>1</sup> and the Recommendations and Resolutions of the Conference of the Contracting Parties. Under Articles 2.1 and 3.1, Contracting Parties must designate suitable wetlands for inclusion in the List of Wetlands of International Importance (Ramsar Sites) and formulate and implement their planning so as to promote the conservation (i.e. the maintenance of their ecological character), of the wetlands included in the List, as well as the wise use of all wetlands. Further, if the ecological character of any Ramsar Site in its territory has changed, is changing or is likely to change as the result of technological developments, pollution or other human interference, the Contracting Party through the national Administrative Authority shall arrange to inform the Ramsar Secretariat without delay (Article 3.2).
2. The Ramsar Advisory Mission (RAM) is a technical assistance mechanism through which a Contracting Party may request expert advice in assessment of potential threats to the ecological character of a Ramsar Site, and associated wetland issues, cf. Resolution XIII.11 (2018)<sup>2</sup>. Standing Committee 57 (2019) adopted Operational Guidance for Ramsar Advisory Missions<sup>3</sup> through Decision SC57-55.
3. The benefit of a Ramsar Advisory Mission is often in providing an additional (international) source of assurance for a national decision-making process, through auditing and peer-review. It is an opportunity for the relevant authorities to test and demonstrate the quality (thoroughness, precaution, transparency, consistency etc.) of the decision-making processes involved, in the context of requirements by the Convention on Wetlands. This means that it is not necessarily expected to generate ideas or insights that have not already been thought of; but it will cast them in a new light, bring independent scrutiny, and distil those issues that have particular relevance to the requirements and the adopted guidance of the Convention. The process overall assists implementation, reinforces standards and credibility, and raises awareness. And the availability of the RAM tool is often seen as one of the benefits of being a Party to the Convention on Wetlands.

### ***Threats to Kurgalsky Peninsula Ramsar Site***

4. On 3 July 2017, the environmental organisations Coalition Clean Baltic, WWF Russia and Greenpeace Russia contacted the Secretary General of the Ramsar Convention (copied to the Minister of Natural Resources and Environment of the Russian Federation) with a complaint about the violation of the Ramsar Convention by the planned construction of the Nord Stream 2 gas pipeline across the *Kurgalsky Peninsula Ramsar Site*, a Regional State Nature Reserve (*Zakaznik*) in the Leningrad Oblast and Baltic Marine Protected Area of the HELCOM network.

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<sup>1</sup> [http://www.ramsar.org/sites/default/files/documents/library/scan\\_certified\\_e.pdf](http://www.ramsar.org/sites/default/files/documents/library/scan_certified_e.pdf) Accessed: 20.11.19

<sup>2</sup> [https://www.ramsar.org/sites/default/files/documents/library/xiii.11\\_ramsar\\_advisory\\_missions\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/library/xiii.11_ramsar_advisory_missions_e.pdf) Accessed 20.11.19

<sup>3</sup> [https://www.ramsar.org/sites/default/files/documents/library/xiii.11\\_ramsar\\_advisory\\_missions\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/library/xiii.11_ramsar_advisory_missions_e.pdf) Accessed 20.11.19

### **Official Request by Russian Federal Ramsar Administrative Authority**

5. On 5 July 2017, the Ramsar Secretariat (together with IUCN) had a meeting with the pipeline constructor *Nord Stream 2 AG* (NSP2) at their head office in Zug (Switzerland) and obtained information on the reasons for choosing the Narva Bay route for the pipeline landfall in Russia and on the ongoing environmental impact assessment and consultation process (related *i.a.* to the Espoo Convention). A further information meeting took place at the Ramsar Secretariat/IUCN headquarters (15 December 2017), followed by two biodiversity round tables with a wider audience in Saint Petersburg (24 January 2018) and Geneva (6 February 2018), followed up by correspondence between the Ramsar Secretariat and the Russian Ramsar Administrative Authority (AA), i.e. the Ministry of Natural Resources and Environment of the Russian Federation.
6. As a result of these exchanges, the AA invited the Ramsar Secretariat (17 October 2018) to organise a Ramsar Advisory Mission (RAM) with a visit of the pipeline construction site towards the end of 2019. This is the first RAM in the Russian Federation.

### **Objectives of the Ramsar Advisory Mission**

7. The objectives of the RAM are based on practical considerations evoked between the pipeline constructor and the Ramsar Secretariat during a meeting on 11 February 2019. Between 11-15 November 2019 (see Itinerary – Annex I), the RAM team obtained background and first-hand on-the-spot information to evaluate the issues listed below and to assess if and how they affect the ecological character of the Ramsar Site, how this could be avoided or mitigated *ex post*.
  1. Assess possible effects of the trench box pipeline construction method across the onshore part (sandy beach, swamp forest, relict dune, peat bog dome) and the offshore pipeline laying in the shallow waters, notably regarding possible habitat alterations, disturbance to habitats and species, spread of invasive species, alteration of bog hydrology and related possible ecological changes.
  2. Review and evaluate the environmental monitoring programme for the operational phase of the pipeline, developed and implemented by the constructor.
  3. Evaluate the measures proposed by the pipeline constructor as part of its Biodiversity Action Plan to support the operations, survey and management of the Kurgalsky Regional State Nature Reserve, including measures to manage tourist and recreational access, increase public awareness on environmental concerns and natural values, and support local education programmes.
  4. Make specific recommendations regarding the points listed above, as well as the needs and ways how to improve the scientific knowledge of the Kurgalsky Peninsula and to support and increase together with regional authorities (Committee for Natural Resources of Leningrad Region and Directorate of Specially Protected Natural Areas of Leningrad Region) local capacities and know-how for sustainable reserve management.

### **Ramsar Advisory Mission Programme**

8. A review of project documentation was undertaken to familiarize the RAM team with the Nord Stream 2 project prior to meeting with NSP2 staff, their consultants, and representatives of

government and non-government organisations between 11–15 November 2019 according to the schedule below:

- 11 November Arrival in St. Petersburg.
- 12 November Meeting in St. Petersburg with representatives of Russian Ministry of Natural Resources, Committee of Natural Resources of Leningrad Region Nord Stream 2 AG, and environmental Non-Government Organization representatives.
- 13 November Visit of Nord Stream 2 construction site and meeting with local community elders, and local administrations of Kingisepp and Kuzemkino.
- 14 November Visit to Kurgalsky Nature Reserve to view pilot eco-trail site, potential eco-tourism and wetland center sites, restoration sites, and examples of disturbance. Return to St. Petersburg.
- 15 November Meeting in St. Petersburg, debrief and departure.

#### *Ramsar Advisory Mission Team Composition*

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## Overview of the Kurgalsky Peninsula Ramsar Site

### *Site Description*

9. The Ramsar Site (Figure 1) covers the shallow coastal waters of the Gulf of Finland with numerous islets around the Kurgalsky Peninsula and the peninsula itself southwards to the Estonian border. The terrestrial part (Figure 2) is covered with mires and bogs, extensive pine forests and coastal dunes. Habitats include also patches of broad-leaved and mixed forests, coastal meadows and marshes with alder and oak, peat moss (*Sphagnum*) fens and bogs, floodplains, dry meadows, reed beds, rocky and sandy coastal shores. The Site exhibits a high species diversity of flora and fauna, supporting numerous species of regionally or globally threatened plants, mammals, birds, amphibians, reptiles and biotopes of high conservation value<sup>4,5,6,7,8</sup>. The coastal wetlands support large migrating and breeding populations of numerous species of waterbirds. The human population is scattered across a few settlements inside the protected area and makes a living from the fisheries or seafood industry. Agricultural lands cover less than 10% of the Ramsar Site close to the southern border.
10. The summary description above is based on the outdated 1997 Ramsar Information Sheet<sup>9</sup> that also identifies the criteria applied in its designation:

<sup>4</sup> Doroshina G. Ya., et al. 2019. Mosses of the State Nature Reserve "Kurgalskiy" (Leningrad Region). *Novosti sistematiki nizshikh rastenii* 53(2): 369–384. <https://doi.org/10.31111/nsnr/2019.53.2.369>. [In Russian].

<sup>5</sup> Glazkova, E.A., et al. 2018. Valuable botanical objects of the Kurgalsky Nature Reserve (Leningrad Region). 1. Rare and protected species. Proceedings of the Karel Research Center of the Russian Academy of Sciences. 8: 37-60. DOI: 10-17076/bg767 [In Russian].

<sup>6</sup> Glazkova, E.A., et al. 2019. Valuable botanical objects of the Kurgalsky Nature Reserve (Leningrad Region). 2. Forests, mires, and grasslands. Proceedings of the Karel Research Center of the Russian Academy of Sciences. 8: 44-61. DOI: 10-17076/bg825. [In Russian].

<sup>7</sup> Glazkova, E.A., et al. 2019. Valuable botanical objects of the Kurgalsky Nature Reserve (Leningrad Region). 3. Coastal, aquatic and semiaquatic biotopes of high conservation value. The Kurgalsky Reserve as an important plant area. Proceedings of the Karel Research Center of the Russian Academy of Sciences. DOI: 10-17076/bg833. [In Russian].

<sup>8</sup> Nord Stream 2 AG. 2018 Design Documentation. Section 7. Environmental Protection Measures. Part 2. Onshore. Book 1. Text part. The Beginning. W-EN-ENG-PRU-RPD-837-070201EN-01. Volume 7.2.1. pp 69-98.

<sup>9</sup> <https://rsis Ramsar.org/RSapp/files/RSapp/RUSrep/RU690RIS.pdf> Accessed: 23.11.19



- i. A particularly good representative example of a natural or near-natural wetland, characteristic of the appropriate biogeographical region (now Criterion 1).
- ii. A wetland that regularly supports 20,000 waterfowl (now Criterion 5)<sup>10</sup>.

Criterion 5 was considered to be the most significant criterion applicable to the site because of the large populations of migrating and breeding populations of waterbirds.

11. Despite being designated as a state game reserve in 1975, the territory of the Kurgalsky nature reserve has been used for agricultural and forestry purposes, as evidenced by a developed drainage (amelioration) system created in 1970s–1980s and subdivision of the territory into forest compartments. Moreover, the Ramsar Site has experienced numerous wildfires caused by both natural (dry summer etc.) and anthropogenic factors (e.g. careless handling of fire; spring grass fires; campsites).
12. Although the outdated Ramsar Information Sheet describes the Kurgalsky Peninsula Ramsar Site having an area of 65,000 ha<sup>11</sup>, a comprehensive survey in 2004 by the Committee on Natural Resources revealed that the area within the boundaries of the Ramsar Site was 49,830 ha. It is not unusual when updating area determinations and boundary descriptions of Ramsar Sites that discrepancies in the information at time of designation must be corrected. On 22 December 2017 the Leningrad Oblast of the Russian Federation issued Resolution 598<sup>12</sup> to align the boundary and area of the Ramsar site with that of the Kurgalsky Regional Nature Reserve<sup>13</sup>, thus increasing the Ramsar Site to 55,510 ha (38,400 ha are offshore in the Gulf of Finland) with the addition of two parcels. Other than these additions, the boundaries of the Ramsar site have not substantively changed.
13. An increase in the area of the Kurgalsky Peninsula Ramsar Site noted above also triggers Article 2.5 of the Convention which states “Any Contracting Party shall have the right...to extend the boundaries of those wetlands already included in the List...” and further to notify the Ramsar Secretariat under Article 8.2(c) of these additions. As also noted in Resolution XIII.10<sup>14</sup> changes to Ramsar Site boundaries and areas whether minor or substantive due to the boundary being incorrectly drawn, not matching the boundary description as defined in the Ramsar Site Information Sheet (RIS), and/or higher resolution and more accurate definition of the site boundary due to advances in technology than was available at time of listing should be reported in an updated RIS.
14. Contracting parties are urged to update information on listed sites every six years or whenever there is actual or potential change in ecological character (Resolution VI.13<sup>15</sup>) using the revised Ramsar Site Information Sheet (RIS) adopted under Resolution XI.8<sup>16</sup> The Russian Federation is listed in Annex 3b of the *Report of the Secretary General pursuant to Article 8.2 on the List of*

<sup>10</sup> This is currently Criteria 5. See: [https://www.ramsar.org/sites/default/files/documents/library/ramsarsites\\_criteria\\_eng.pdf](https://www.ramsar.org/sites/default/files/documents/library/ramsarsites_criteria_eng.pdf) Accessed: 23.11.19

<sup>11</sup> <https://rsis.ramsar.org/ris/690> Accessed: 23.11.19

<sup>12</sup> Government of the Leningrad Resolution. On introduction of amendments into Resolution of the Government of the Leningrad Region dated 14.12.2004 No. 297 “*On wetlands of international significance on the territory of the Leningrad Region especially as waterfowl habitat*”, No. 598 of 22.12.17.

<sup>13</sup> Government of the Leningrad Region Resolution No.291 of 25.07.17. Regarding amending the Resolution of the Government of the Leningrad Region dated 8 April 2010 No. 82 “*On the State Natural Integrated Sanctuary*” <http://docs.cntd.ru/document/436753711> Accessed” 23.11.19 (translated using Google Translate <https://translate.google.com/>)

<sup>14</sup> <https://www.ramsar.org/sites/default/files/documents/library/xiii.10 Ramsar list e.pdf> Accessed: 24.11.19

<sup>15</sup> [https://www.ramsar.org/sites/default/files/documents/pdf/res/key\\_res\\_vi.13e.pdf](https://www.ramsar.org/sites/default/files/documents/pdf/res/key_res_vi.13e.pdf) Accessed: 24.11.19

<sup>16</sup> <https://www.ramsar.org/sites/default/files/documents/pdf/cop11/res/cop11-res08-e.pdf> Accessed: 24.11.19

Wetlands of International Importance (COP13 Doc.12<sup>17</sup>) to update, as a matter of urgency, the RISs for their Ramsar Sites. The RIS on record for the Kurgalsky Peninsula Ramsar Site is dated 1997.



Figure 1 (left). Kurgalsky Peninsula Ramsar Site, boundary outlined in red, cross-hatching forest dominated.<sup>18</sup>

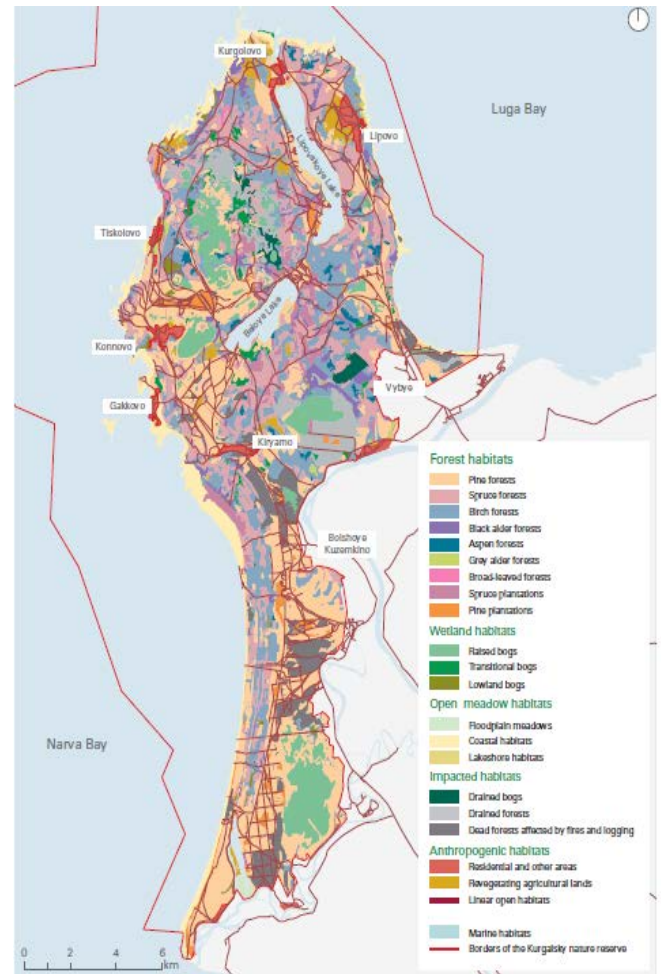


Figure 2 (right). Kurgalsky Peninsula Ramsar Site habitat types<sup>19</sup>

**RECOMMENDATION 1: The results of the numerous studies undertaken with the Nord Stream 2 project should be used when updating as a matter of urgency the out-of-date RIS<sup>20</sup> with summary descriptions of ecological components and processes, ecosystem services, habitat types, species abundance and distribution, ecological character threats and responses, and land tenure and responsibilities.**

### **Designation and Legal Protection**

- The Ramsar Site falls within the administrative area of the Kingisepp Municipal District in the Leningrad Region. First established in 1975 as a 32,000 ha state game reserve (Resolution No. 132, Executive Committee of Leningrad Oblast Council of National Deputies – 9 April 1975), the area was subsequently designated in 1994 as a Wetland of International Importance (Ramsar Site 690) under the Ramsar Convention of Wetlands (in accordance with Russian Government

<sup>17</sup> [https://www.ramsar.org/sites/default/files/documents/library/cop13doc.12\\_sg\\_report Ramsar list\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/library/cop13doc.12_sg_report Ramsar list_e.pdf) Accessed: 24.11.19

<sup>18</sup> Strelka KB. 2019. Management Plan for the Kurgalsky Nature Reserve Stages 3-4. Threats, opportunities and conservation objectives paper. W-HS-EMS-LFR-REP-898-CONSERV-03.(Map 2. Outline map of the Kurgalsky nature reserve).

<sup>19</sup> Strelka KB. 2019. Management Plan for the Kurgalsky Nature Reserve Stage 11. Final Version of Habitat Map. W-HS-EMS-LFR-REP-898-FVHMAPEN-01. (Map 1. Groups of habitat types of the Kurgalsky nature reserve).

<sup>20</sup> <https://www.ramsar.org/sites/default/files/documents/pdf/cop11/res/cop11-res08-e-anx1.pdf> Accessed: 23.11.19

Resolution No. 1050 – 13 September 1994) and in 1996 included into the system of Protected Natural Areas of the eastern part of the Gulf of Finland (Resolution No. 494, Leningrad Oblast Government – 26 December 1996). Declared a regional level protected area in 2000 (Governor’s Resolution No. 309, Leningrad Oblast – 20 July 2000) as the Kurgalsky State Nature Reserve (*zakaznik* in Russian), regulations as an internationally important waterfowl habitat were passed in 2004 (Resolution No. 297, Leningrad Oblast Government – 14 December 2004). Overlapping protection occurred in 2009 when the area received the status of Baltic Marine Protected Area (Kurgalsky Peninsula no. 166<sup>21</sup>) under the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area; and the shallow waters around the peninsula in 2001 were included in the list of Important Bird Areas (RU1048<sup>22</sup>).

16. The Committee on Natural Resources of the Leningrad Oblast is responsible for reserve protection and use, while a federal state-owned institution “Leningrad Oblast Forest Management” funds the protected area. The reserve is governed by Regulations on the Kurgalsky State Nature Reserve of Regional Importance No. 291 (25 July 2017)<sup>23</sup>. These regulations are based on the Federal Laws of 14 March 1995 No. 33-FZ “On Specially Protected Natural Areas” and of 10 January 2002 N 7-FZ “On environmental protection”. Resolution 291 amends Resolution No. 82 (Leningrad Oblast Government – 8 April 2010) and permits *inter alia* the construction of linear facilities (e.g. pipelines). Connected by a network of roads and powerlines, the reserve does not include the settlements of Kurgolovo, Lipovo, Gakkovo, Tiskolovo, Kiryamo and Konново of Kingisepp municipality nor forest plots No. 6 and 28 of the 9<sup>th</sup> Ust-Luga forestry sector.

### **Reporting on Changes to Ecological Character of Ramsar Sites**

17. Change in ecological character is defined in paragraph 19 of Resolution IX.1 Annex A<sup>24</sup> as “[f]or the purposes of implementation of Article 3.2, change in ecological character is the human-induced adverse alteration of any ecosystem component, process, and/or ecosystem benefit/service”. The inclusion of specific reference to Article 3.2 of the Convention text within the definition is designed to clarify the maintenance obligation for the ecological character of listed Wetlands of International Importance (Ramsar Sites) under Article 3.2, and to note that such change concerns only adverse change caused by the actions of people and excludes natural evolutionary change occurring in wetlands and also excludes positive human-induced change (Resolution VI.1<sup>25</sup>).
18. Ramsar Handbook 19<sup>26</sup> compiles guidance adopted by Contracting Parties on procedures and responses with respect to notification under Article 3.2 regarding human-induced change in ecological character. The framework included in the Handbook employs flowcharts to assist in detecting whether change in wetland ecological character is natural and positive or negative and human-induced thereby triggering Article 3.2 reporting.
19. The following synthesis focusses on an assessment of ecological impacts resulting from pipeline installation through the Ramsar Site. The starting point for consideration is the avoid-mitigate-compensate framework and the principle of maintaining the ecological character of the Site. Nord Stream 2 AG is also committed to complying with the International Finance Corporation (IFC)

<sup>21</sup> [http://mpas.helcom.fi/apex/f?p=103:12:::NO::P12\\_ID:166](http://mpas.helcom.fi/apex/f?p=103:12:::NO::P12_ID:166) Accessed: 23.11.19

<sup>22</sup> [http://datazone.birdlife.org/site/factsheet/kurgalski-peninsula-iba-russia-\(european\)](http://datazone.birdlife.org/site/factsheet/kurgalski-peninsula-iba-russia-(european)) Accessed: 23.11.19

<sup>23</sup> Government of the Leningrad Region Resolution No.291 of 25.07.17. Regarding amending the Resolution of the Government of the Leningrad Region dated 8 April 2010 No. 82 “On the State Natural Integrated Sanctuary.

<sup>24</sup> [http://www.ramsar.org/sites/default/files/documents/pdf/res/key\\_res\\_ix\\_01\\_annexa\\_e.pdf](http://www.ramsar.org/sites/default/files/documents/pdf/res/key_res_ix_01_annexa_e.pdf) Accessed: 20.11.19

<sup>25</sup> [http://www.ramsar.org/sites/default/files/documents/pdf/res/key\\_res\\_vi\\_01e.pdf](http://www.ramsar.org/sites/default/files/documents/pdf/res/key_res_vi_01e.pdf) Accessed: 20.11.19

<sup>26</sup> <http://www.ramsar.org/sites/default/files/documents/pdf/lib/hbk4-19.pdf> Accessed: 20.11.19

Performance Standards on Social and Environmental Sustainability (e.g. IFC GN6, GN7, and GN8)<sup>27</sup>.

20. Consideration of Ramsar Convention Articles and guidance provided through Convention Resolutions with respect to site management planning (Resolution VIII.14<sup>28</sup>) and the mitigative sequence (see Box 1, Resolution XI.9<sup>29</sup>) can aid a proponent's response to potential project impacts that threaten a Ramsar Site's ecological character. Avoidance of impact is the default position. However, proactive mitigation and compensation should be undertaken if avoidance is not the option following a risk-based approach to fully understand the implications of any possible change in ecological character.
21. The Ramsar Convention recognizes that wetland restoration and/or rehabilitation programmes can lead to favourable human-induced changes in ecological character<sup>30</sup> and are a key aspect of wetland management interventions<sup>31</sup>. Further under Article 4.4 there is a call to apply management to improve waterbird habitat on wetlands where it is appropriate to do so. Within the mitigative sequence standard for Environmental Impact Assessments, if avoidance is not an option, the project proponent attempts to mitigate the impacts through actions which minimize undesirable impacts and compensates for lost components, processes and/or functions.

## **RAM Objective 1 - Assessment of the Construction Corridor**

22. The assessment of the construction corridor (CC) is based upon a review of original baseline data and reports produced by the NSP2 company and its contractors, presentations by representatives of the government, industry, conservation organisations and local citizens, and a site visit to the construction site within the Ramsar Site.

### ***Description of the construction corridor***

23. The NSP2 entails the construction and operation of two parallel 1.22m nominal diameter pipelines transporting natural gas through the Baltic Sea from Narva Bay on Russia's Baltic coast to Germany's Baltic coast near Lubmin. The Russian landfall required a construction corridor that crosses shallow offshore waters (2.5km) and a seashore terrace of low sand dunes, a higher relict dune both forested with pine and spruce, and the northern extremity of a peat mire (Kader Swamp) a distance of approximately 3.7km before tying into the pipeline inspection gauge (PIG) trap area and ancillary facilities immediately outside the eastern boundary of the Kurgalsky Peninsula Ramsar Site.
24. To reduce the environmental footprint within the Ramsar Site, NSP2 used an innovative open-cut construction method of trench boxes and sheet piles during excavation and installation of the pipelines to maintain and manage water levels to facilitate submerged pipeline pulls, help preserve local hydrology, and reduce the width of the CC. Parallel pipelines are separated by ~20m at a depth of 3m (bottom of pipeline) and required a temporary access road be

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<sup>27</sup> International Finance Corporation's Guidance Notes: Performance Standards on Environmental and Social Sustainability. January 1, 2012 (updated June 27, 2019) [https://www.ifc.org/wps/wcm/connect/9fc3aaef-14c3-4489-acf1-a1c43d7f86ec/GN\\_English\\_2012\\_Full-Documents\\_updated\\_June-27-2019.pdf?MOD=AJPERES&CVID=mKqITQj](https://www.ifc.org/wps/wcm/connect/9fc3aaef-14c3-4489-acf1-a1c43d7f86ec/GN_English_2012_Full-Documents_updated_June-27-2019.pdf?MOD=AJPERES&CVID=mKqITQj) Accessed: 3.12.19

<sup>28</sup> [http://www.ramsar.org/sites/default/files/documents/pdf/res/key\\_res\\_viii\\_14\\_e.pdf](http://www.ramsar.org/sites/default/files/documents/pdf/res/key_res_viii_14_e.pdf) Accessed 24.11.19

<sup>29</sup> <http://www.ramsar.org/document/resolution-xi9-an-integrated-framework-and-guidelines-for-avoiding-mitigating-and> Accessed: 24.11.19

<sup>30</sup> [http://www.ramsar.org/sites/default/files/documents/pdf/res/key\\_res\\_vi.01e.pdf](http://www.ramsar.org/sites/default/files/documents/pdf/res/key_res_vi.01e.pdf) Annex, para 2.8. Accessed: 24.11.19

<sup>31</sup> <http://www.ramsar.org/document/resolution-viii14-new-guidelines-for-management-planning-for-ramsar-sites-and-other> para 14 and Annex, para 43 (iii), 99 and 100 Accessed: 24.11.19



constructed between the pipelines. Depending upon the surface condition, the access road was constructed using one of three designs: single layer, dual layer, or wood pile (see: Appendix I, RFSBI SHI 2019<sup>32</sup>). Excavated topsoil along the trench alignment was removed and either stored alongside the trench or stockpiled in the CC and Temporary Works Area (TWA) in separated and designated locations accordingly to the source of the material. The subsoil between the panels of the trench box and below was then excavated and removed to a stockpile at the TWA. Backfill operations commenced following completion of the pipe pull. Backfilling was performed in layers and sections to allow the water to settle and infiltrate into the ground and to reduce disturbance and turbidity of the water. The backfill layers were:

- An intimate supporting layer of crushed rock (0.04m to 0.08m size) placed around the pipelines to just above the top of the pipelines.
- Sandy material previously excavated from the trenches and stored in the TWA was placed on top of the intimate layer to a pre-defined level to facilitate reinstatement of the peat and top soil layers.
- Peat and or topsoil previously excavated from the trenches and stockpiled along the CC and TWA in separated and designated locations accordingly to the source of the material was then placed up to a design level that would provide suitable cover for the pipelines. Although the stored peat was watered during the summer of 2019, it did lose bulk resulting in a lack of material to complete the backfills as per the design. To this end, the depth of the sand backfill was increased along the entire length of Line B and the thickness of the peat backfill was reduced to ~0.4m.

25. The RAM occurred following installation and backfilling of the trenches but prior of removal of temporary access roads and preparation of the CC for restoration in 2020.

#### ***Habitat Impacts of the Construction Corridor***

26. Changes were made to the design of the onshore route to reduce both the construction and permanent footprint of the pipeline route across the Kulgalsky Pensinsula Ramsar Site. Objectives of the evaluation of alternative methods were to preserve the hydrological regime in the wettest part of the onshore route and to minimize the need for forest clearance in line with IFC-PS6 par. 20<sup>33</sup>. To minimise encroachment on the largest ombrotrophic raised bog within the peninsula, the pipeline crosses its northern extent (Figure 3) previously impacted by drainage reclamation and fire. Impact to the relic dune area was reduced with crossing at a narrower point of reduced height (Figure 4). Using the trench box construction method rather than an open trench, the original 56m (beach and dunes) and 85m (swamp) width of the CC was reduced to 30m (beach and dunes 1.375km), 40m (western edge of swamp 0.35km), 50m (swamp 1.4km) and 60m (swamp and modified habitat 0.5km).
27. Direct impacts to habitats along the CC include the clearance of trees and shrubs, removal and storage of soil and sand to design elevations, levelling and construction of temporary access roads, and modification of environmental conditions (e.g. light, temperature, moisture, humidity, edge effects). Direct habitat loss along the CC was originally estimated at 17.76ha of the diverse assemblage of ecotypes found within the reserve (see Figure 2) including 5.34ha raised bog, 2.62ha swamp forest, 1.95ha fens and mires, 0.52ha coastal dune and fringe

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<sup>32</sup> Russian Federal Service for Hydrometeorology and Environmental Monitoring Federal State Funded Educational Institution State Hydrological Institute (RFSBI SHI). Preliminary Hydrological Assessment of the Nord Stream 2 Gas Pipeline at the Russian Landfall Site, Interim draft report issued under contract No. RO19-5038 dated 28 October 2019

<sup>33</sup> [https://www.ifc.org/wps/wcm/connect/topics\\_ext\\_content/ifc\\_external\\_corporate\\_site/sustainability-at-ifc/policies-standards/performance-standards/ps6](https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/performance-standards/ps6) Accessed: 4.12.19

habitats, and 7.33ha upland forest and grassland<sup>34</sup>. After the reduction of the width of the CC, the direct habitat loss is 16.30ha of which 12.06ha is described as relatively undisturbed critical habitat (e.g. 3.50ha raised and lowland bogs; 5.18ha pine and spruce forest; 3.01ha birch forest) and 4.24ha as having been previously impacted<sup>35</sup>. By either measure and although representing <0.1% of the site's terrestrial habitats or <1% of the extent of each habitat type within the reserve, these are negative human-induced impacts to the Ramsar Site.

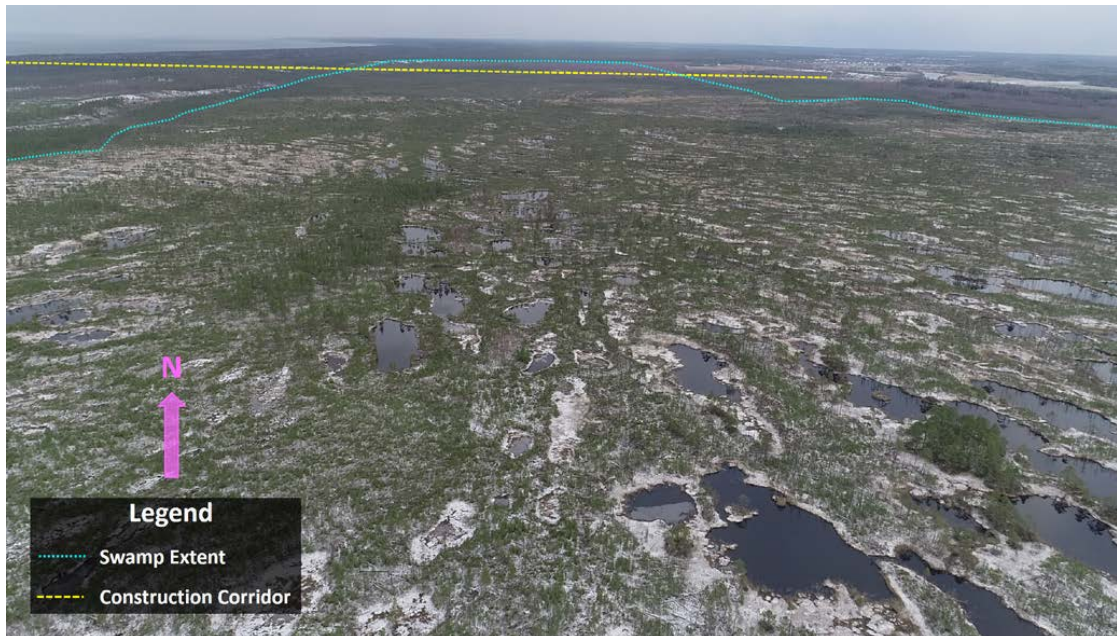


Figure 3. Oblique View of the Construction Corridor across the northern edge of Kader Bog.<sup>36</sup>

### **Summary of construction corridor impacts on habitat**

27. The RAM Team visit occurred in the early phases of the rehabilitation of the construction corridor with initiation of removal of the dual layer temporary road and decompaction of adjacent peat. Stored topsoil will not be spread until 2020 along with other revegetation efforts. The breakwater has been removed and there is no physical reminder of its presence (Figure 5a) and it is not expected to have any long-term impacts. The rehabilitation of the marine flats and foreshore dunes to pre-existing conditions (Figure 5b) is expected to occur quickly due to exposure to wave and wind action. The RAM Team recommends transplanting of lyme-grass (*Leymus arenarius*) to fix the foreshore dunes. The rehabilitation of the spruce and pine forest phytocenoses is expected to be long-term and unlikely to restore to pre-existing conditions (Figure 6) as described in the ESPOO report<sup>37</sup>.

<sup>34</sup> Nord Stream 2. 2018. Site Integrity Assessment for the Kurgalsky Peninsula Ramsar Site. W-HS-EIA-GEN-REP-836-INTARUEN-05.

<sup>35</sup> Nord Stream 2. 2019. Biodiversity Action Plan. W-HS-EIA-GEN-REP-836-BAPGLOEN-02.

<sup>36</sup> Russian Federal Service for Hydrometeorology and Environmental Monitoring Federal State Funded Educational Institution State Hydrological Institute (RFSBI SHI). Preliminary Hydrological Assessment of the Nord Stream 2 Gas Pipeline at the Russian Landfall Site. (Interim draft report issued under contract No. RO19-5038 dated 28 October 2019). Figure 2. p. 9. St. Petersburg.

<sup>37</sup> ESPOO Report. Nord Stream 2. April 2017. W-PE-EIA-POF\_REP-805-040100EN-06.(refer to pages 72-74).

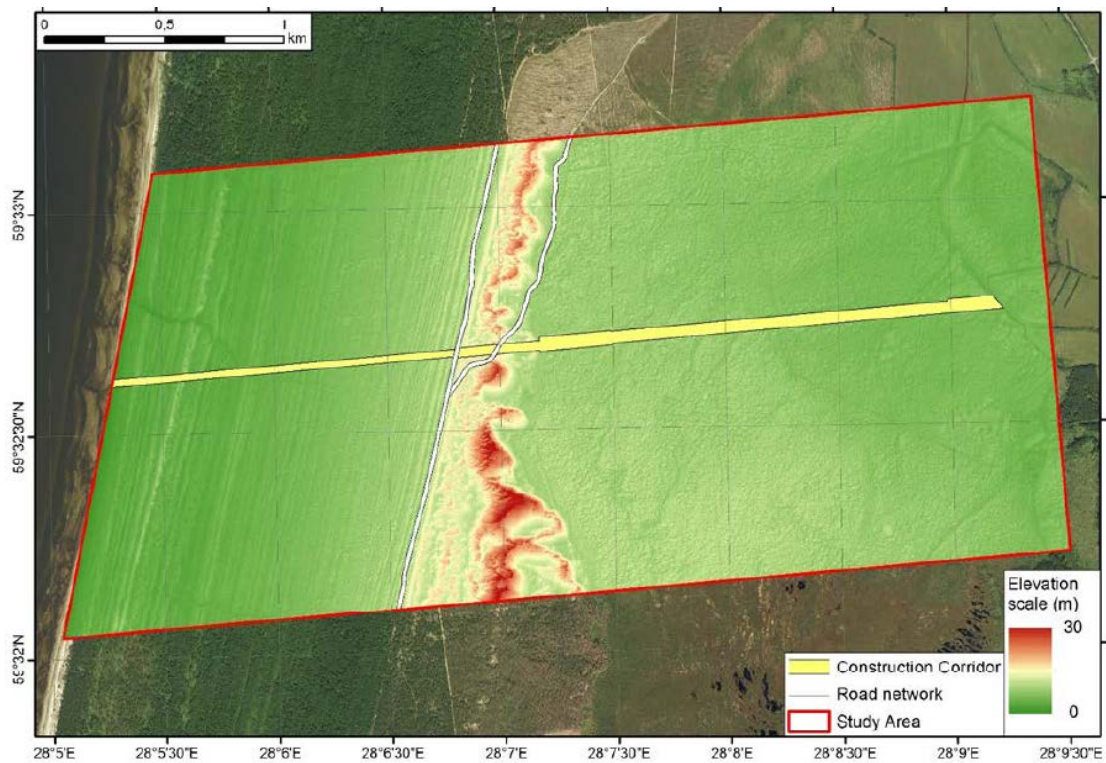


Figure 4. Digital Terrain Model indication elevations<sup>38</sup>.

28. The undulating topography through most of the spruce and pine dominated sections of the CC can be restored using sand stockpiled in the CC and TWA and recovered from the dual layer temporary road. However, the very shallow organic layer overlaying the parent material (marine sands) will be difficult to restore, and new conditions for soil formation and development of the vegetation layer will have a lasting impact locally. There will be a permanent loss of forest cover in a 7.5m strip over each pipeline as deep rooted trees will be prevented from becoming established resulting in a permanent loss in a moss-rich ground cover condition to grassland and shrub. The topography of the relic dune will only be partially restored requiring installation of slope breakers, e.g. gabion baskets, to minimize wind and water erosion. Until the vegetation is re-established to stabilize the sand base, it will be necessary to monitor the corridor and correct as required for changes to the restored topography due to wind and water erosion. In the short term, geo-textile may be required on the most exposed areas.
29. The original micro-topography of the swamp will be difficult to restore but techniques are being attempted to decompact the peat under the temporary road which may help re-establish surface drainage patterns. Constructing shallow contour bunds will interrupt development of linear flow paths and the shallow ponds behind will facilitate establishment of hydrophilic plants. Previously impacted by drainage reclamation and fire and now vegetated with grasses and birch, the CC and through the northern extent of Kader Bog will have minimal impact once it is revegetated. Revegetation will require maintaining an elevated water table to prevent drying of the surficial peat and to promote hydrophilic plant establishment.

#### ***Restoration of construction corridor habitats***

30. Following backfilling of the trenches and removal of the temporary road, a large area of swamp must be rapidly revegetated to prevent drying and oxidizing of the surficial peat during dry hot

<sup>38</sup> Op. cit. Figure 19. p. 32



periods. Contouring and creation of small shallow pools will facilitate the regeneration of vegetation such as cotton grass (*Eriophorum*) to root. Areas of undisturbed vegetation in the CC will expand naturally, but recolonization rates can be dramatically improved through the strategic introduction of plants from local remnants or nearby sources to minimize ecotypic differences within species. Quinty and Rochefort (2003<sup>39</sup>) provide guidelines for vegetation restoration on harvested peatlands using locally supplied plant material that may assist with re-



Figure 5. a) Looking westward from the construction corridor to where the breakwater was installed during pipeline installation; b) looking southward along the edge of the construction corridor showing height of foreshore dunes and vegetation.



Figure 6. Top left – Example of pre-construction horsetail-greenmoss pine forest; Top right – Example of pre-construction billberry-greenmoss spruce forest; Bottom left – undulating topography of parent marine sands in the CC; Bottom right – shallow organic layer overlaying parent marine sand visible at the edge of the CC.

<sup>39</sup> [http://www.gret-perg.ulaval.ca/uploads/tx\\_centrecherche/Peatland\\_Restoration\\_guide\\_2ndEd.pdf](http://www.gret-perg.ulaval.ca/uploads/tx_centrecherche/Peatland_Restoration_guide_2ndEd.pdf) Accessed; 30 Nov 2019



vegetation along the construction corridor. Mackin et al. (2017<sup>40</sup>) describe best practices for raised bog restoration in Ireland that include drain blocking, vegetation removal, contour bunds, and re-profiling.

31. Prior to road construction and installation and backfilling of the pipelines, the swamp surface exhibited micro-topographical features in an otherwise almost flat surface sloping west to east with an elevation change of ~1.8m. (Figure 7). The micro-topographical features detail the likely micro-drainage patterns in surface flows and through the fibric peat layer of higher conductivity (see Figure 8 as a template for restorative actions). However, coupled with a reduction in the bulk volume of peat during storage and compaction along the road and working corridor, the volume of stored peat is insufficient to restore the original topography. Importing peat is not a recommended option to restore the predevelopment micro-topography as it may introduce alien and/or invasive weed species to the Ramsar Site. Although de-compaction of the peat is unlikely to restore predevelopment surface elevations, it will break up the surface allowing for improved water penetration and a more natural rough surface (Figure 12). Care must be taken to ensure the top layer containing the natural seed bank or *Sphagnum* diaspores remains on the surface.

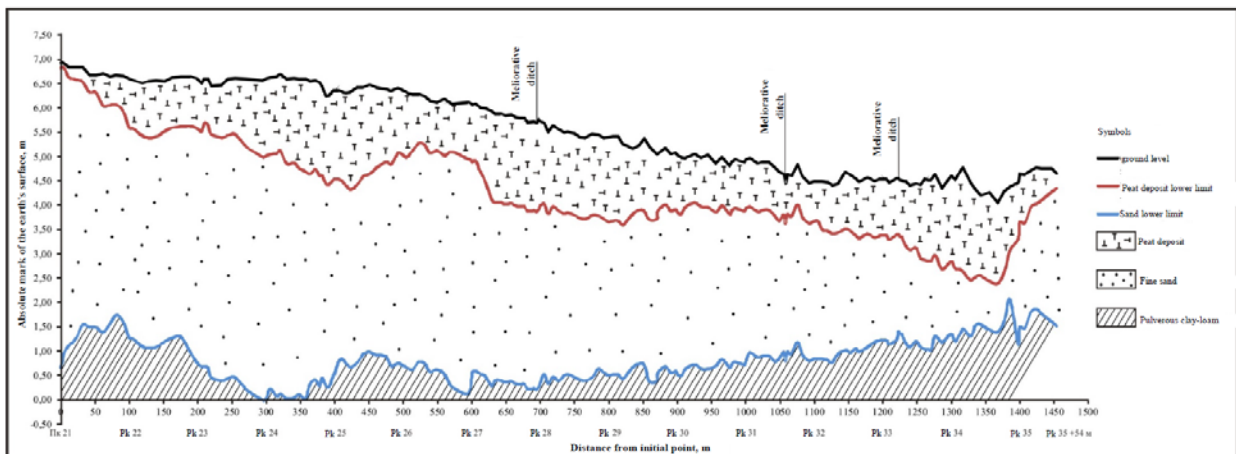


Figure 7. Topographical profile of the Kader Swamp (from RFSBI SHI 2018, Figure 2<sup>41</sup>)

32. Along with the “roughened” surface, constructing shallow contour bunds aligned diagonally to the CC alignment (Figure 9) will aid in interrupting development of linear flow paths. Contour bunds need to account for peat shrink due to consolidation and oxidation and thus should be minimally constructed from highly decomposed peat covered by ~0.2m of weakly decomposed peat to prevent drying out, twice the planned height of inundation, embankment inclinations of 1.05 to 1.1, and protected against wave action using dead branches or roots of shrubs or tree in front of the bunds (Blankenburg and Tonnis, 2004<sup>42</sup>)

<sup>40</sup> [https://www.npws.ie/sites/default/files/publications/pdf/IWM99\\_RB\\_Restoration\\_Best%20Practice%20Guidance.pdf](https://www.npws.ie/sites/default/files/publications/pdf/IWM99_RB_Restoration_Best%20Practice%20Guidance.pdf)  
 Accessed: 7.12.19

<sup>41</sup> Russian Federal State Budgetary Institution, State Hydrological Institute (RFSBI SHI), 2018. Assessment of the Potential Impact of the Nord Stream 2 Gas Pipeline on the Hydrological Regime of the Adjacent Swamp Area in Kurgalsky Nature Reserve and the Development of a Monitoring Programme for the Period of Construction and Operation of the Pipeline System. Final report under contract No. PO18-5140 dated June 28, 2018. W-PE-EMO-LFR-REP-999-HYDROLEN-03. St. Petersburg.

<sup>42</sup> Blankenburg, J., and W.J. Tonnis. 2004. Guidelines for wetland restoration of peat cutting areas.



Figure 8. Interpreted Kader Swamp surficial drainage flows (SHI 2018 in RFSBI SHI 2019, Figure 40<sup>43</sup>).

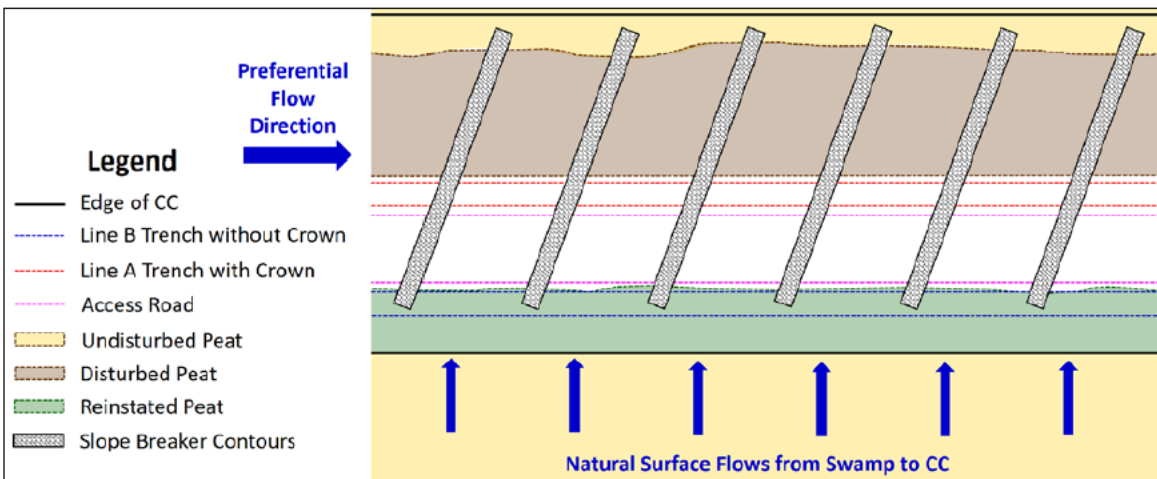


Figure 9. Suggested layout of slope breaker contours (from RFSBI SHI 2019, figure 47<sup>44</sup>)

### Compensation for construction corridor habitat impacts

33. Although Article 4.2 of the Convention text does not expressly require compensation other than when a site is delisted or its boundaries restricted, resolutions adopted by the Contacting Parties provide guidance where residual impacts remain after avoidance or mitigation efforts. Ramsar Resolutions 5.1<sup>45</sup> and VII.24<sup>46</sup> respectively make the points that “Contracting Parties will aim to meet their commitments under the Convention through the following actions: ... restore degraded wetlands and compensate for lost wetlands”, and that Contracting Parties are urged

<sup>43</sup> Russian Federal State Budgetary Institution, State Hydrological Institute (RFSBI SHI), 2019. Preliminary Hydrological Assessment of the Nord Stream 2 Gas Pipeline at the Russian landfall Site (Interim draft report issued under contract No. RO19-5038 dated 28 October 2019). St. Petersburg.

<sup>44</sup> Russian Federal Service for Hydrometeorology and Environmental Monitoring Federal State Funded Educational Institution State Hydrological Institute (RFSBI SHI). Preliminary Hydrological Assessment of the Nord Stream 2 Gas Pipeline at the Russian Landfall Site (Interim draft report issued under contract No. RO19-5038 dated 28 October 2019). St. Petersburg.

<sup>45</sup> [http://www.ramsar.org/sites/default/files/documents/pdf/res/key\\_res\\_5.1e.pdf](http://www.ramsar.org/sites/default/files/documents/pdf/res/key_res_5.1e.pdf) Accessed: 4.12.19

<sup>46</sup> [http://www.ramsar.org/sites/default/files/documents/library/key\\_res\\_vii.24e.pdf](http://www.ramsar.org/sites/default/files/documents/library/key_res_vii.24e.pdf) Accessed: 4.12.19

to “take all practicable measures for compensating any loss of wetland functions, attributes and values, both in quality and surface area, caused by human activities”. Furthermore, this should be “at least equivalent compensation” (Resolution IX.6<sup>47</sup>) and any such action should be *ex situ* and appropriate to offset the residual impacts (Resolution XI.9<sup>48</sup>). Concepts embedded in *Principles and guidelines for wetland restoration* (Resolution VIII.16<sup>49</sup>) apply equally to the application of restoration as a response option to a loss of wetland ecological character. Guidance under IFC GN6<sup>50</sup> requires rehabilitation and restoration where feasible as well as delineating the area of project influence, as best as possible in terms of modified and natural habitat, to identify critical habitat and propose biodiversity offsets as part of a mitigation strategy for residual impacts on biodiversity.

34. The Espoo report<sup>51</sup> on the Nord Stream 2 project does not consider all the mitigative actions employed in the pipeline installation. However, the report assesses the primary and secondary forest, including the pine covered relict dunes within the CC, as highly vulnerable, not resilient to change, and concludes that vegetation restoration to pre-existing conditions will take decades to achieve if at all is still relevant. Rehabilitation of the CC will begin with the final removal of the temporary roads in 2020 and a return to the original topography over much of the route. Along with active seeding, topsoil with its seed bank stockpiled along the CC and TWA will be spread to facilitate revegetation.
35. In compliance with IFC-PS6 (para. 10), NSP2 is committed to providing biodiversity offsets as a compensatory mechanism “...for significant residual adverse biodiversity impacts arising from project development and persisting after appropriate avoidance, minimization and restoration measures have been taken”<sup>52</sup>. These need to be designed and implemented for measurable outcomes that minimally result in no net loss and preferably a net gain of biodiversity. The latter is required in critical habitats described as areas of high biodiversity value including (i) habitat of significant importance to Critically Endangered and/or Endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes. In addition to the IUCN Red List of Endangered Species, NSP2 in their assessment of critical habitat included species listed as critically endangered or endangered in the Red Data Book of the Russian Federation and the Red Data Book of the Leningrad Region.<sup>53</sup>
36. The company has used a biometrics approach to quantify the biodiversity loss and propose mitigation to deliver a net gain for critical habitat features (refer to Appendix 3<sup>54</sup>). The approach considers the quality of critical habitat lost and a ratio to account for the difficulty and time required to restore or create quality compensation (offsets) habitat to achieve no net loss. Along the construction corridor, the amount of critical habitat lost is 12.06ha<sup>55</sup> requiring a

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<sup>47</sup> [http://www.ramsar.org/sites/default/files/documents/pdf/res/key\\_res\\_ix\\_06\\_e.pdf](http://www.ramsar.org/sites/default/files/documents/pdf/res/key_res_ix_06_e.pdf) refer to para 14 and 15. Accessed: 4.12.19

<sup>48</sup> <http://www.ramsar.org/sites/default/files/documents/library/cop11-res09-e.pdf> Accessed: 4.12.19

<sup>49</sup> [https://www.ramsar.org/sites/default/files/documents/pdf/res/key\\_res\\_viii\\_16\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/pdf/res/key_res_viii_16_e.pdf) Accessed: 4.12.19

<sup>50</sup> International Finance Corporation's Guidance Notes: performance Standards on Environmental and Social Sustainability. January 1, 2012 (updated June 27, 2019) [https://www.ifc.org/wps/wcm/connect/9fc3aaef-14c3-4489-acf1-a1c43d7f86ec/GN\\_English\\_2012\\_Full-Documents\\_updated\\_June-27-2019.pdf?MOD=AJPERES&CVID=mKqIToj](https://www.ifc.org/wps/wcm/connect/9fc3aaef-14c3-4489-acf1-a1c43d7f86ec/GN_English_2012_Full-Documents_updated_June-27-2019.pdf?MOD=AJPERES&CVID=mKqIToj) Accessed: 3.12.19

<sup>51</sup> ESPOO Report. Nord Stream 2. April 2017. W-PE-EIA-POF\_REP-805-040100EN-06.

<sup>52</sup> International Finance Corporation's Guidance Notes: Performance Standards on Environmental and Social Sustainability. January 1, 2012 (updated June 27, 2019) [https://www.ifc.org/wps/wcm/connect/9fc3aaef-14c3-4489-acf1-a1c43d7f86ec/GN\\_English\\_2012\\_Full-Documents\\_updated\\_June-27-2019.pdf?MOD=AJPERES&CVID=mKqIToj](https://www.ifc.org/wps/wcm/connect/9fc3aaef-14c3-4489-acf1-a1c43d7f86ec/GN_English_2012_Full-Documents_updated_June-27-2019.pdf?MOD=AJPERES&CVID=mKqIToj) Accessed: 3.12.19

<sup>53</sup> Nord Stream 2. 2019. Biodiversity Action Plan. W-HS-EIA-GEN-REP-836-BAPGLOEN-02.

<sup>54</sup> Op. cit.

<sup>55</sup> The amount of critical habitat and total compensatory offset is either 12.06 or 14.07 ha and 21.62 or 31.33 ha respectively depending upon whether the area of pine forest used to determine critical habitat is either 3.8 or 6.53 ha reported in the Biodiversity Action Plan or Habitat Creation and Conversion Plan respectively.

minimum 21.62ha to achieve no net loss; to achieve a net gain in biodiversity the amounts per critical habitat type need to exceed these minimum amounts. Modified habitats are not included in the determination of critical habitat. Kader Bog is still considered critical habitat even though surficial features have been damaged by historical attempts to drain for agricultural purposes.

37. The approach followed by NSP2 is in-line with Resolution XI.9<sup>56</sup> that any compensatory actions should usually be *ex situ* but will not however be delivered in advance of negative impacts as recommended. Rather, the compensatory actions will be delivered as part of the Biodiversity Action Plan<sup>57</sup> post-construction. The habitat compensation plan<sup>58</sup> prepared by Strelka KB for NSP2 considered the area requirement to achieve a net gain in biodiversity by habitat type, the potential for restoration of hydrological regime and vegetative cover of potential compensation sites, inputs and difficulty required to bring about restoration, techniques, and estimated costs to implement (including monitoring). Table 1 outlines the critical habitat loss, the compensatory ratio applied to achieve a net biodiversity gain, number of potential restoration sites, range in areas of sites considered, and indication of cost. The report states additional detailed studies are required on the potential sites to update data on current conditions and natural dynamics.

Table 1. Critical habitat loss in CC and compensatory offsets required to achieve a net gain in biodiversity.

Habitat	Loss (ha)	Ratio	Compensatory Area (ha)	Potential Sites	Site deemed most suitable (ha)	Estimated Cost (Ruble)
Birch Forest	3.01	2.34	7.03	3	11.28	742,000
Black alder Forest	0.06	2.17	0.13	3	0.97	58,000
Pine Forest	6.53	2.09	13.67	3	65.07	3,900,000
Spruce Forest	1.38	2.01	2.78	3	22.81	400,000
Raised Bogs	2.40	2.03	4.87	3	50.1	191,000
Lowland bogs	1.10	1.77	1.95	2	22.5	719,000
Coastal Meadows	0.30	3.00	0.90 <sup>a</sup>			
Total	14.78		31.33			

a. Enhancement of existing areas rather than restoration of damaged sites

38. The Biodiversity Monitoring Plan is described in the Biodiversity Action Plan (BAP) as focusing “...on what is required to achieve net gain and wherever possible set measurable targets. It also summarises the monitoring set out in the Russian EIA required for compliance with national laws...” Further, it will “...monitor the success of the actions set out in the BAP and will identify when limits of acceptable change from the stated targets are breached. This will trigger adaptive management measures...”<sup>59</sup>. Monitoring and adaptive management are critical activities within any management plan developed for the site (see section 3.3 below).

### **Description of hydrological impact assessment of construction corridor**

39. The RAM Team were given a presentation by the Russian Federal Service for Hydro-meteorology and Environmental Monitoring, State Hydrological Institute on the work undertaken to-date assessing project impacts on ground and surface hydrology within an area of influence that extends 1km on either side of the construction corridor. The following is based on the presentation, outcomes detailed in their report (RFSBI SHI 2019) and discussions and observations along the CC (13 November).

<sup>56</sup> <http://www.ramsar.org/sites/default/files/documents/library/cop11-res09-e.pdf> Accessed: 4.12.19

<sup>57</sup> Nord Stream 2. 2019. Biodiversity Action Plan. W-HS-EIA-GEN-REP-836-BAPGLOEN-02.

<sup>58</sup> Strelka KB. 2019. Development of Visioning Study and Management Plan for the Kurgalsky nature reserve PO 18-5115. Stage 6. Habitat creation and conversion plan. 29/03/2019. W-HS-EMS-LFR-REP-898-HACCPLN-01.

<sup>59</sup> Nord Stream 2. 2019. Biodiversity Action Plan. W-HS-EIA-GEN-REP-836-BAPGLOEN-02. Sections 5.1 and 5.4.

40. A 2018 reconnaissance assessment into the hydrological functioning of Kader Bog (SHI 2018<sup>60</sup>) was expanded and results updated in 2019 to include groundwater and surface water investigations into the CC's area of influence. These activities included a geophysical survey and the installation and pump testing of a network of 16 groundwater monitoring wells, development of a Digital Terrain Model (DTM), a drainage assessment, installation and monitoring of a network of 17 swamp stage recorder standpipes installed in Kader Bog, and seven surface water flow recorders installed within key drainage lines. The field investigations and monitoring results were used to confirm and further develop a conceptual hydrological / hydrogeological model to simulate the conditions prior to and following project completion within the area of influence.
41. The digital terrain modelling exercise delineated the pre- and post-catchment areas of the water courses and drainage lines intersected by the linear infrastructure along the CC (Figure 10). The marine terrace in the forest and dune areas exhibit a trellised pattern while Kader Bog area exhibits a dendritic pattern drained by linear amelioration (drainage) ditches in the east and northeast. All surface water draining from the swamp is eventually collected in the amelioration system which then discharges eastward to the Mertvitsa River.

#### ***Summary of hydrological impacts of construction corridor***

42. Construction of the temporary access road intersects the natural surface drainage systems along both forest and relic dune areas and the peat swamp. Culverts were installed in the temporary road (Figure 10 bottom) to mitigate interruptions in natural cross drainage lines in the forest area with the temporary road constructed using the single and dual layer design (Figure 11). The groundwater gradient does not cross the axis of the CC but rather slopes from the relict dune to the beach; and compaction of the sand underlying the temporary road in both forest and relic dune areas is unlikely to have altered the hydraulic characteristics to any significant depth. Removal of the temporary road and reinstatement of cross drainage flows with restoration of an undulating terrain mimicking preconstruction topography in the forest area will likely restore natural drainage patterns and prevent development of a preferential flow path. Although the topography of the relic dune will only be partially restored, prevention of preferential flow paths developing on either side of the crest are to be mitigated using erosion and sediment control measures and installation of slope breakers. Thus, it is not anticipated that construction and removal of the temporary road will have a long-term effect on the hydrogeology of the forest and relic dune area.

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<sup>60</sup> Russian Federal State Budgetary Institution, State Hydrological Institute (RFSBI SHI), 2018. Assessment of the Potential Impact of the Nord Stream 2 Gas Pipeline on the Hydrological Regime of the Adjacent Swamp Area in Kurgalsky Nature Reserve and the Development of a Monitoring Programme for the Period of Construction and Operation of the Pipeline System. Final report under contract No. PO18-5140 dated June 28, 2018. W-PE-EMO-LFR-REP-999-HYDROLEN-03. St. Petersburg.



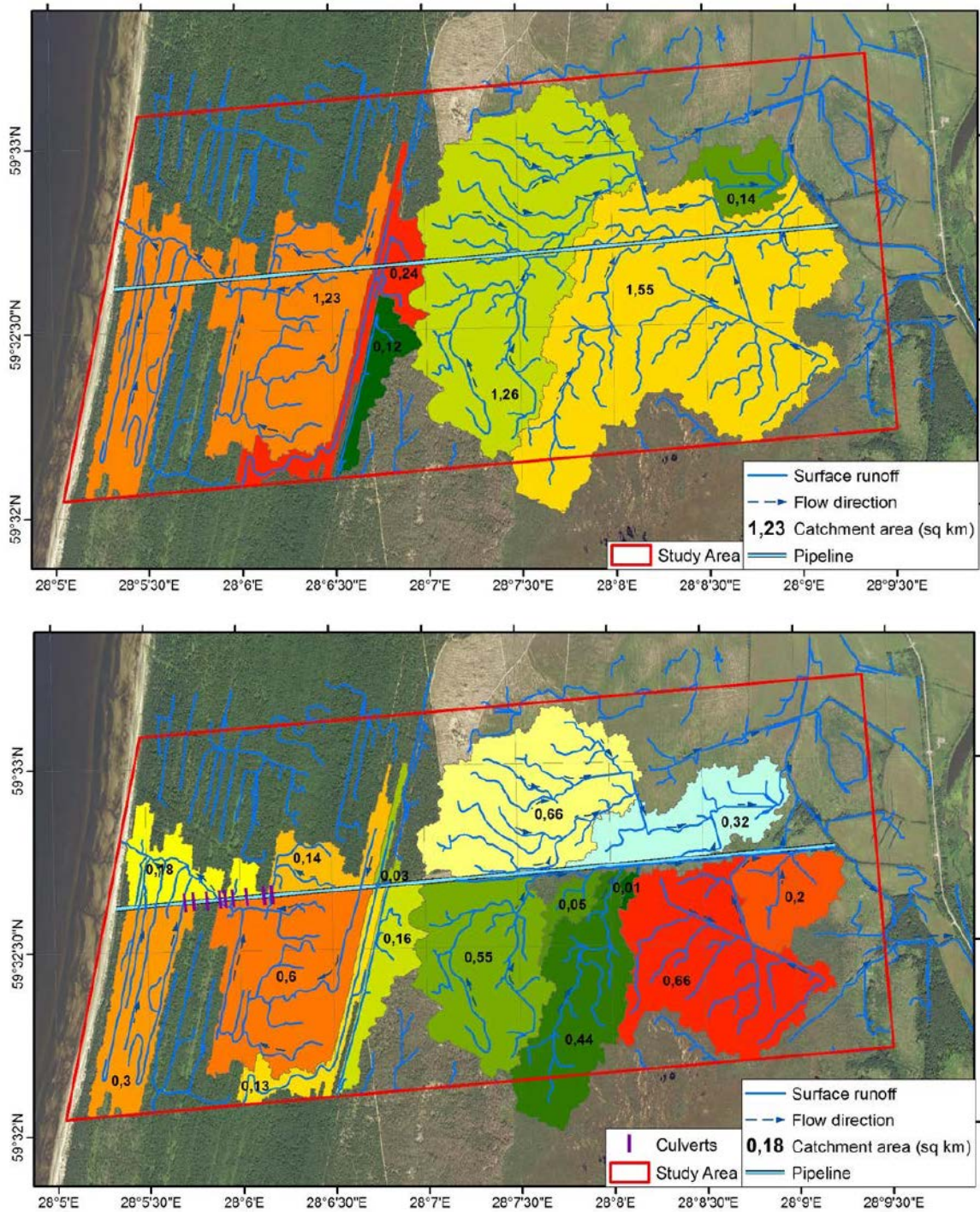


Figure 10. Pre-construction (top) and post-construction (bottom) catchment areas of the water courses and drainage lines intersected by the linear infrastructure along the Construction Corridor<sup>61</sup>.

<sup>61</sup> Russian Federal State Budgetary Institution, State Hydrological Institute (RFSBI SHI), 2019. Preliminary Hydrological Assessment of the Nord Stream 2 Gas Pipeline at the Russian landfall Site (Interim draft report issued under contract No. RO19-5038 dated 28 October 2019). Figures 20 and 21, p. 33. St. Petersburg.

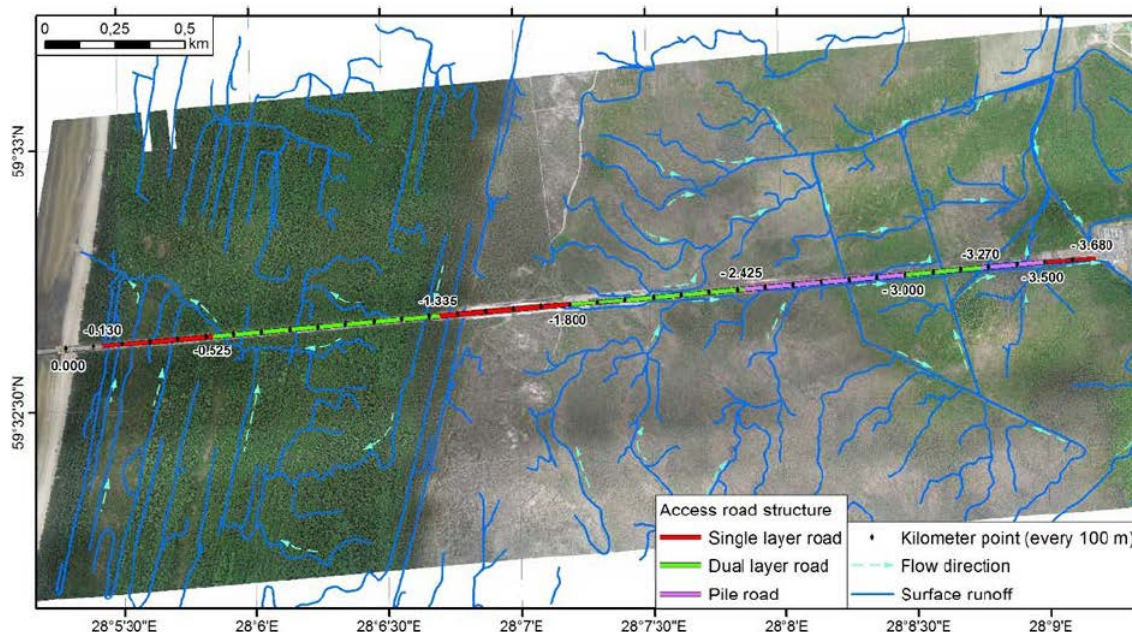


Figure 11. Location of temporary access road segments<sup>62</sup>.

43. In the Kader Bog, the temporary road interrupts the flow in  $\sim 1.9\text{km}^2$  of the catchment that drained northwards across this alignment. The weight of the road and the construction vehicles using the dual layer road compacted the underlying surface material while the wood pile road (49% of the 1.65km length crossing the swamp) was designed to protect the underlying surface material from compaction. Ponding was still evident along the south side of portions of the road due to the barrier to surface flow. Ponding was also still evident at the eastern extent of the CC which was the result of the excavation of the trenches creating drainage paths along the CC alignment that was only partially limited by compartment walls and operation of the water management system. Ponding was however noted in RFSBI SHI (2019) to be a natural phenomenon in the Kader Bog due to low surface water discharge rates and likely aquitard at the base of the peat deposit, and thus expected to be temporary. Although the ponding at the eastern end resulted in a period of surface inundation that would have occurred prior to construction, this area had been previously modified by the drainage system impacting the immediate hydrology.
44. Peat compaction affecting hydraulic conductivity in the surficial peat in the center of the dual layer road is possibly greater than the  $\sim 0.2\text{m}$  to  $\sim 0.3\text{m}$  observed subsequent to the removal of the adjacent working corridor of layered logs (Figure 12) resulting in a depressed topography along the road alignment. Horizontal and vertical subsurface hydraulic conductivity is naturally very low in highly decomposed peat deposits and although the magnitude of reduction in subsurface flows have not been evaluated, they are likely to be low with negligible effect on the water balance of the swamp. The reinstatement when backfilling trenches with sapric peat stored along the CC and TWA is likely to exhibit higher vertical conductivity but the long term effect on the swamps hydrogeological regime is predicted by RFSBI SHI to be minimal due to the upward groundwater pressure under much of the swamp.

<sup>62</sup> Russian Federal State Budgetary Institution, State Hydrological Institute (RFSBI SHI), 2019. Preliminary Hydrological Assessment of the Nord Stream 2 Gas Pipeline at the Russian landfall Site (Interim draft report issued under contract No. RO19-5038 dated 28 October 2019). Figure 45, p. 59. St. Petersburg.





Figure 12. Working corridor of layered logs (left) and following removal (right)

45. Although the backfilled trench is likely to have intersected the groundwater table, clay separation walls installed within the intimate backfill layer and retention of sand bunds as trench breakers were used to restrict groundwater flow along the pipelines and prevent development of a preferential flow path in both the forest area and the swamp. Coupled with these mitigative measures, pipelines in the swamp are furthermore not expected to impede groundwater flows which follow a similar but slightly diagonal direction as the pipelines.

**RECOMMENDATION 2: The hydrological monitoring should continue until vegetation and topography restoration has been successful and monitoring of ground and surface water stabilizes to pre-construction conditions, in order to be able to confirm these expectations.**

46. Prior to the CC, it was noted that surface flow from Kader Swamp was affected by the neglected drainage network with beaver (*Castor fiber*) dams in the east and northeast of the bog<sup>63</sup>. Ditch and channel profiles are described as trapezoidal with top widths of 5m and up to 10m respectively, and depths of 1.5–2.5m with sodded slopes without traces of erosion<sup>64</sup> but vary in condition with ditches being silted or impounded by beaver resulting in repeated waterlogging of previously drained areas<sup>65</sup>. Representatives of non-government organizations at the November 12 workshop expressed concerns with restoration due to possible changes to the vegetation that has developed since drainage and their interpretation of permitted activities under regulation.

**RECOMMENDATION 3: Consideration should be given to permanently blocking the drainage ditches and channels within and at the boundary of the bog as a component of restoration. The northern area of Kader Bog is the recommended site to meet compensatory requirements for critical habitat. Furthermore, the central and southern parts of Kader Bog had drainage ditches and while the central part was assessed as being in a stable condition, the southern part (36.5ha) could be restored to a raised bog by redesigning the drainage system.<sup>66</sup>**

<sup>63</sup> Russian Federal State Budgetary Institution, State Hydrological Institute (RFSBI SHI), 2018. Assessment of the Potential Impact of the Nord Stream 2 Gas Pipeline on the Hydrological Regime of the Adjacent Swamp Area in Kurgalsky Nature Reserve and the Development of a Monitoring Programme for the Period of Construction and Operation of the Pipeline System. Final report under contract No. PO18-5140 dated June 28, 2018. W-PE-EMO-LFR-REP-999-HYDROLEN-03. St. Petersburg. p. 21.

<sup>64</sup> Nord Stream 2 AG. 2018 Design Documentation. Section 7. Environmental Protection Measures. Part 2. Onshore. Book 1. Text part. The Beginning. W-EN-ENG-PRU-RPD-837-070201EN-01. Volume 7.2.1. p. 65

<sup>65</sup> Strelka KB. 2019. Management Plan for the Kurgalsky Nature Reserve Stage 11. Final Version of Habitat Map. W-HS-EMS-LFR-REP-898-FVHMAPEN-01.

<sup>66</sup> Strelka KB. 2019. Development of Visioning Study and Management Plan for the Kurgalsky nature reserve PO 18-5115. Stage 6. Habitat creation and conversion plan. 29/03/2019. W-HS-EMS-LFR-REP-898-HACCPLN-01.



## **Rare species impacts of construction corridor**

### **Flora**

47. Kurgalsky Peninsula Ramsar Site has a very diverse flora as represented by surveys undertaken approximately 1km on either side of the pipeline axis. Species belonging to 466 vascular plants belonging to 248 genera and 87 families in addition to 120 bryophytes, 31 fungi, and 59 species of lichens were found in the surveyed area.<sup>67</sup> Glazkova et al. (2018) report the number of species in Kurgalsky listed within the Red Data Book of the Russian Federation and the Red Data Book of the Leningrad Region to be 78 including 50 vascular plants, 11 bryophytes and 11 lichens associated with rare or unique landscapes and display their distribution.<sup>68</sup> Doroshina et al. (2019) update the number of bryophytes species in Kurgalsky to 136, including 12 that are protected.<sup>69</sup>
48. Within the boundaries of the Construction Corridor, seven species of vascular plant and one species of bryophyte listed as rare or vulnerable within the Red Data Book of the Russian Federation and the Red Data Book of the Leningrad Region were transplanted to suitable habitats<sup>70</sup> in accordance with Russian legislation<sup>71</sup> (Table 2). A conclusion of the report on the distribution of red data species was that all species found were common within the area surrounding the Nord Stream 2 project area with the exception of *Pulsatilla patens*.
49. A requirement under the legislation is that relocation of rare and endangered plant species must be followed by implementation of appropriate conservation measures and monitoring of their location. Results of initial monitoring of translocated plants undertaken in May and July 2019 were reported by representatives of NSP2 during presentations (12 November) to the RAM Team as displaying some mortality but generally in good condition. This conclusion was contradicted during the NGOs' presentation to the RAM Team claiming significant mortality. NGOs also expressed concerns on the trans-plantation technique undertaken and threats to the specimens being transplanted and to existing subpopulations occurring in the site of transplant. NSP2 reported that plants from the construction corridor were relocated to other suitable habitats, as per approved procedures by Russian authorities, who were also present during the translocation. Although the RAM Team were shown several of the sites where plants were translocated, we could not independently verify the accuracy of either claim as to mortality of plants, or whether there is a threat to the existing on-site population.
50. The removal and transplanting of specimens from habitat about to be lost to development and land use changes is referred to as "migration translocations"<sup>72</sup>. It is recognized that all translocation projects have an inherent risk of failure due to improper design or uncontrollable circumstances, or potentially unintended consequences including affecting the translocated specimens and other species or ecological processes in the destination community even after a detailed risk assessment. Critical to any translocation is a monitoring and reporting programme to assess whether objectives are being met and whether adjustments in management are required.

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<sup>67</sup> Nord Stream 2 AG. 2018 Design Documentation. Section 7. Environmental Protection Measures. Part 2. Onshore. Book 1. Text part. The Beginning. W-EN-ENG-PRU-RPD-837-070201EN-01. Volume 7.2.1. p. 69

<sup>68</sup> Glazkova, E.A., et al. 2018. Valuable botanical objects of the Kurgalsky Nature Reserve (Leningrad Region). 1. Rare and protected species. Proceedings of the Karel Research Center of the Russian Academy of Sciences. 8: 37-60. DOI: 10-17076/bg767 [In Russian].

<sup>69</sup> cf. citation in footnote 4 on page 7.

<sup>70</sup> Nord Stream 2. 2018. Distribution of Red Data Book Species in the habitats surrounding the Nord Stream 2 project area. W-PE-EMO-LFR-REP-890-REDBSDEN-01.

<sup>71</sup> Nord Stream 2 AG. 2018 Design Documentation. Section 7. Environmental Protection Measures. Part 2. Onshore. Book 2. Text. Ending. W-EN-ENG-PRU-RPD-837-070202EN-01. Volume 7.2.2. refer to section 5.6.7 pp. 117-123.

<sup>72</sup> IUCN/SSC (2013). *Guidelines for Reintroductions and Other Conservation Translocations. Version 1.0*. Gland, Switzerland: IUCN Species Survival Commission, viiii + 57 pp

Table 2. Rare and protected species within the construction corridor, number of specimens and locations they were found, and date of transplanting.

Species	Locations	No. Plants	Abundance <sup>d</sup>	Transplanting
<i>Hottonia palustris</i>	3	3328	Common	July 2018
<i>Neottida nidus-avis</i>	7	56	Common	July 2018
<i>Aulacomnium androgynum</i>	15	Not reported	Common	
<i>Pulsatilla pratensis</i>	1-2 <sup>a</sup>	8	Common	June 2018
<i>Pulsatilla patens</i>	2	18	Rare	June 2018
<i>Drosera intermedia</i>	Numerous <sup>b</sup>		Common	
<i>Rhynchospora fusca</i>	1 <sup>c</sup>		Common	
<i>Epipactis atrorubens</i>	Not reported	157	Common	

a. Estimated from Figure 5.

b. Reported to occur in high densities around hollows in Kader Bog. Densities of 350/m<sup>2</sup> and 600-800/m<sup>2</sup>. Drought in 2008 lead to decrease.

c. Found in one spot in 2016, but not in 2017-2018.

d. Abundance in habitats surrounding project area: Rare: 1-3 locations; Occasional: 4-10; Frequent: 10-30; Common: more than 30 locations.

51. The RAM Team considers that the disagreement over the measures of success of the translocation programme is partially a result of lingering disagreement with changes to the legislation permitting the development of the pipeline through the Kurgalsky Peninsula Ramsar Site and genuine concern with potential negative ramifications to existing subpopulations occurring in the site of transplant. Open communication and engagement among stakeholders are required to engender trust that translocations were undertaken with integrity and without hidden motives.

**RECOMMENDATION 4: Effective monitoring and reporting of the translocation specimens should contribute to retrospective evaluation and comparison with other documented translocation attempts. Open communication with, and participation by, NGOs in the monitoring and evaluation of the translocation programme could reduce the mistrust evident at the meeting.**

### **Vertebrate Fauna**

52. Surveys conducted for terrestrial and avian vertebrate fauna in the construction corridor and immediately surrounding area reported a diverse fauna typical of habitats encountered throughout the Kurgalsky Peninsula Ramsar Site<sup>73</sup>. Within the immediate area of the construction corridor, special attention has been given to the White-tailed Sea Eagle (*Haliaeetus albicilla*) and Willow Grouse (*Lagopus lagopus rossicus*) included in the Red Books of the Russian Federation and the Leningrad Region of protected species. The eagle has one of three nests in the Ramsar Site immediately adjacent to the construction corridor, while the Willow Grouse is known to nest in Kader Bog and other bogs (Kayansuo and Bolshoe) in the Ramsar Site.
53. Results of surveys for the Willow Grouse estimated 7-10 pairs in Kader Bog and a gradual increase in distance from the construction corridor of the nearest responding bird beginning at 50m (2017) to approximately 200m (2018) and 800m (2019)<sup>74</sup>. Two explanations proposed for the increased distance are (i) a reduction in response to the call-back due to increase background noise with construction and (ii) avoidance to disturbance associated with construction.

<sup>73</sup> Nord Stream 2 AG. 2018 Design Documentation. Section 7. Environmental Protection Measures. Part 2. Onshore. Book 1. Text part. The Beginning. W-EN-ENG-PRU-RPD-837-070201EN-01. Volume 7.2.1. pp. 79-90.

<sup>74</sup> JSC ECOPROJECT. 2019. PO18-5165. Supplementary Agreement No. 1. Ornithological Monitoring. White-tailed Sea-eagle, Willow grouse, Migration of birds of the wetland complex. W-HS-EMO-LFR-REP-890-ORMOFSEN-02.

**RECOMMENDATION 5: Spring acoustic monitoring of the species should continue to assess response of the species following rehabilitation of the construction corridor and in conjunction with the hydrological monitoring and any compensation activities on Kader Bog.**

54. Monitoring of the nesting activity of the three pairs of White-tailed Sea Eagle within the Ramsar Site reports successful fledging of young in the two nests distant from the construction corridor<sup>75</sup>. Although a nesting attempt was made by the pair (HA\_47\_005) adjacent to the construction corridor in 2019 the nest was not successful, and a destroyed egg was recorded under the nest. It is unusual for eagles to leave their nest unattended for lengthy periods and expose eggs and young to predation. Although this pair initiated nesting while construction was underway, disturbance from this or other sources cannot be eliminated as a factor in the loss of this year's breeding attempt by the pair which have previously successfully nested at this site. Although the pair was observed visiting artificial nesting structures erected in 2017 as potential alternate sites, eagles exhibit high breeding site-fidelity. Monitoring of all White-tailed Sea Eagle nests in the reserve has demonstrated that pairs may not breed every year<sup>76</sup>.

**RECOMMENDATION 6: Monitoring nesting of White-tailed Sea Eagles within the Kurgalsky Ramsar Site, as part of a comprehensive environmental monitoring programme, should continue in order to provide valuable insight into how levels of disturbance may impact inter-annual variation in reproduction success.**

55. Kurgalsky Peninsula Ramsar Site is reported to have 47 terrestrial species of mammals, although only 28 were found in and adjacent to the construction corridor<sup>77</sup>. The construction corridor is not expected to be a deterrent to large and medium sized species such as carnivores, elk, deer, and wild boar which occupy relatively large home ranges and must regularly traverse open areas and corridors (e.g. power lines, forest roads) throughout Kurgalsky. Changes in habitat conditions pre- and post-construction and restoration may have a small local effect on the distribution and occupancy of small and medium sized mammal (e.g. shrews, voles, mice, squirrels, hares) along the construction corridor. However, this group is distributed throughout Kurgalsky and no population will be negatively impacted by the construction corridor. The Northern and Long-eared Bats are distributed in mixed forests and anthropogenic impacted areas respectively and thus may benefit with the construction corridor serving as a foraging corridor. Nine species are included in the Red Data Book of the Russian Federation, the Red Data Book of the Leningrad Oblast, and the IUCN Red List<sup>78</sup>. However, none of the Red Data Book Species are anticipated to be negatively affected by the Nord Stream 2 development.
56. The minimum 160 species avifauna list reported for the Ramsar site is represented by a diversity of families including migrants and resident species of water (58 species), forest (78 species) and meadow birds (18 species)<sup>79</sup>. Sixty-two species representing 26 families are included in the Red Data Book of the Russian Federation, the Red Data Book of the Leningrad Oblast, and the IUCN Red List<sup>80</sup>. The largest number of nesting rare species is reported to be south of the pipeline in Kader Bog.

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<sup>75</sup> Op. cit.

<sup>76</sup> Op. cit.

<sup>77</sup> Nord Stream 2 AG. 2018 Design Documentation. Section 7. Environmental Protection Measures. Part 2. Onshore. Book 1. Text part. The Beginning. W-EN-ENG-PRU-RPD-837-070201EN-01. Volume 7.2.1. p. 79.

<sup>78</sup> Strelka KB. 2019. Management Plan for the Kurgalsky Nature Reserve Stages 3-4. Threats, opportunities and conservation objectives paper. W-HS-EMS-LFR-REP-898-CONSERV-03.

<sup>79</sup> Nord Stream 2 AG. 2018 Design Documentation. Section 7. Environmental Protection Measures. Part 2. Onshore. Book 1. Text part. The Beginning. W-EN-ENG-PRU-RPD-837-070201EN-01. Volume 7.2.1. p. 85.

<sup>80</sup> Strelka KB. 2019. Management Plan for the Kurgalsky Nature Reserve Stages 3-4. Threats, opportunities and conservation objectives paper. W-HS-EMS-LFR-REP-898-CONSERV-03.

**RECOMMENDATION 7: Red-listed bird species (excluding the White-tailed Sea Eagle, cf. Rec. 6) are unlikely to be affected by the construction corridor over the long term but are recommended to be included in the comprehensive environmental monitoring programme.**

#### ***Invertebrate Fauna***

57. Pre-construction surveys (May–September 2016) documented the composition and distribution of invertebrate species within three corridors (detailed, reference, and potential impact zone corridors) from Narva Bay to the pipeline inspection gauge trap area. Although the 569 invertebrate species recorded are described as being typical for the geographic region, variation in composition between the corridors was related to habitats encountered along each. Reported key habitats for the 20 rare and protected species encountered with the surveys are spruce and pine forests and dunes<sup>81</sup>. Invertebrates along the construction corridor will have been impacted with the alterations in habitat and will likely have resulted in significant mortality including rare and protected species. Along the corridor invertebrate communities and relative abundance of individual species are however not expected to emulate pre-construction diversity following rehabilitation. The impact to populations and composition is predicted to be low as all species are reported to be well distributed outside the construction corridor<sup>82</sup>.

#### ***Conclusion of impacts to rare species***

58. The direct impacts to the habitats (described above) had an immediate effect on their dependent species, e.g. as nesting and foraging habitats. The effect will however be at the individual rather than the population level. With revegetation of the construction corridor as its rehabilitation proceeds, species will naturally reoccupy the area as conditions appropriate to their life strategies develop. The species composition along the rehabilitated corridor will likely not represent the full complement present pre-construction as some changes to the habitat will be permanent. Impacts to species are believed to be local and will have minimal to no impact on populations with the Ramsar Site as a whole.

**RECOMMENDATION 8: As part of a comprehensive environmental monitoring programme, documenting species response relative to the baseline pre-construction assessment along and adjacent to the construction corridor should be undertaken in order to provide an empirical measure of the magnitude of the restoration's success.**

## **RAM Objective 2 – Assessment of the Environmental Monitoring Programme for the operational phase of the pipeline**

59. A monitoring programme is an important tool to provide management authorities with relevant information to assess and adapt activities to meet performance metrics. Infrastructure and restoration activities should be preceded by a rigorous baseline inventory that will allow the authorities to measure the effects of the development on the ecological character of the site. The information collected should be retrospective rather than predictive. While predictive assessments are often undertaken in an EIA a retrospective approach aims to assess *actual* disturbances or alterations of various projects or management practices as they apply to biodiversity and biological integrity. The baseline inventory and assessment should be used

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<sup>81</sup> Nord Stream 2 AG. 2018 Design Documentation. Section 7. Environmental Protection Measures. Part 2. Onshore. Book 1. Text part. The Beginning. W-EN-ENG-PRU-RPD-837-070201EN-01. Volume 7.2.1. pp. 96-99.

<sup>82</sup> Nord Stream 2 AG. 2018 Design Documentation. Section 7. Environmental Protection Measures. Part 2. Onshore. Book 2. Text. Ending. W-EN-ENG-PRU-RPD-837-070202EN-01. Volume 7.2.2. refer to section 5.6.7 p. 134.

to select outcome and output performance indicators for long-term monitoring. Baseline inventory provides the basis for guiding the development of appropriate assessment and monitoring. Scientific, long-term monitoring and research which relies upon detailed and thorough sampling can measure change over time and produce statistically rigorous results.

### **Construction phase**

60. The environmental monitoring programme implemented during the construction of the pipeline is reported to comply with statutory provisions of the Russian Federation, requirements of governmental authorities, and international environmental laws that do not contravene Russian legislation.<sup>83</sup> In line with IFC GN6, an environmental monitoring programme supports adaptive management “...in which the implementation of mitigation and management measures are responsive to changing conditions and the results of monitoring throughout the project’s lifecycle.”<sup>84</sup> Ecological surveys conducted in 2015-2017 and in conjunction with the hydrological studies undertaken in 2018-2019 to describe seasonal variations in natural components and processes within the boundary of the Ramsar Site provide baseline data *inter alia* on soils, vegetation, local and migratory avifauna, indicator species, and hydrology against which to assess the effects of the pipeline development across the potentially affected landscape outside the construction corridor. The intensity and distribution of sample points for the baseline ecological surveys is shown in Figure 13 and described in detail in Nord Stream 2 documentation (2018<sup>85</sup>, 2019<sup>86</sup>).
61. Environmental monitoring one year after initiation of the construction phase beginning in 2017 reported no detectable impacts on local and migratory avifauna, or on indicator and rare fauna species. However, as noted above, disturbance may have been a factor in the failure of a White-tailed Sea Eagle nest (HA\_47\_005) in 2019. Monitoring of rare and protected plants along the borders of the construction corridor were assessed by the company’s contractor as being generally in good condition although declines in vigor and mortality were noted in some plots<sup>87</sup>. Mitigation measures were successful in restricting access by the public to the construction corridor. High recreation use was however noted by the RAM Team outside of the non-accessible CC as causing damage to ground vegetation throughout the Ramsar Site which is to be addressed with the Biodiversity Action Plan (see below).

### **Operational phase**

62. NSP2 has committed to undertake monitoring activities during the construction phase for seawater, soils quality, surface water and sediments, vegetation cover, avifauna, hydro-biology, fish, and transplanted plants. Additional activities post-construction include monitoring for a reduction of tourist pressure and extent of forest fires, success of an eradication programme for Hogweed (*Heracleum sosnowskyi*) and Japanese Knotweed (*Polygonum cuspidatum*) and other invasives, forest and wetland habitat restoration, reforestation of informal tracks and unused roads, and creation of habitat immediately adjacent to the reserve<sup>88</sup>.

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<sup>83</sup> Op. cit. p. 7.

<sup>84</sup> International Finance Corporation’s Guidance Notes: Performance Standards on Environmental and Social Sustainability. January 1, 2012 (updated June 27, 2019) [https://www.ifc.org/wps/wcm/connect/9fc3aaef-14c3-4489-acf1-a1c43d7f86ec/GN\\_English\\_2012\\_Full-Documents\\_updated\\_June-27-2019.pdf?MOD=AJPERES&CVID=mKqITQj](https://www.ifc.org/wps/wcm/connect/9fc3aaef-14c3-4489-acf1-a1c43d7f86ec/GN_English_2012_Full-Documents_updated_June-27-2019.pdf?MOD=AJPERES&CVID=mKqITQj) Accessed: 3.12.19

<sup>85</sup> Nord Stream 2 AG. 2018 Design Documentation. Section 7. Environmental Protection Measures. Part 2. Onshore. Book 1. Text part. The Beginning. W-EN-ENG-PRU-RPD-837-070201EN-01. Volume 7.2.1. pp. 49-54.

<sup>86</sup> Nord Stream 2. 2019. Environmental Monitoring and Control during the construction of the onshore section of the gas pipeline Nord Stream 2. The Russian Sector. Annual Report 2018. Book 1. Text part. W-PE-EMO-ONR-RQU-890-THIRQEN-01.

<sup>87</sup> Op.cit.

<sup>88</sup> Nord Stream 2. Biodiversity Monitoring Plan – Russian Landfall. August 2019. W-HS-EIA-GEN-REP-836-BAPMPREN-02



63. Data obtained by the Biodiversity Monitoring Programme being developed is to be used to assess the effectiveness of the site management in realizing its goals and objectives<sup>89</sup>. The consultants distinguish two types of monitoring: (i) integrated monitoring will include broad spectrum ecological surveys on representative areas to assess the condition of the vegetation, degree of disturbance and patterns of natural dynamics comprising most of the protected species of bryophytes, lichens, fungi and vascular plants, (ii) specialized monitoring for protected species of birds and marine mammals, recreational use and settlement areas, forest regeneration, and forest pathology.

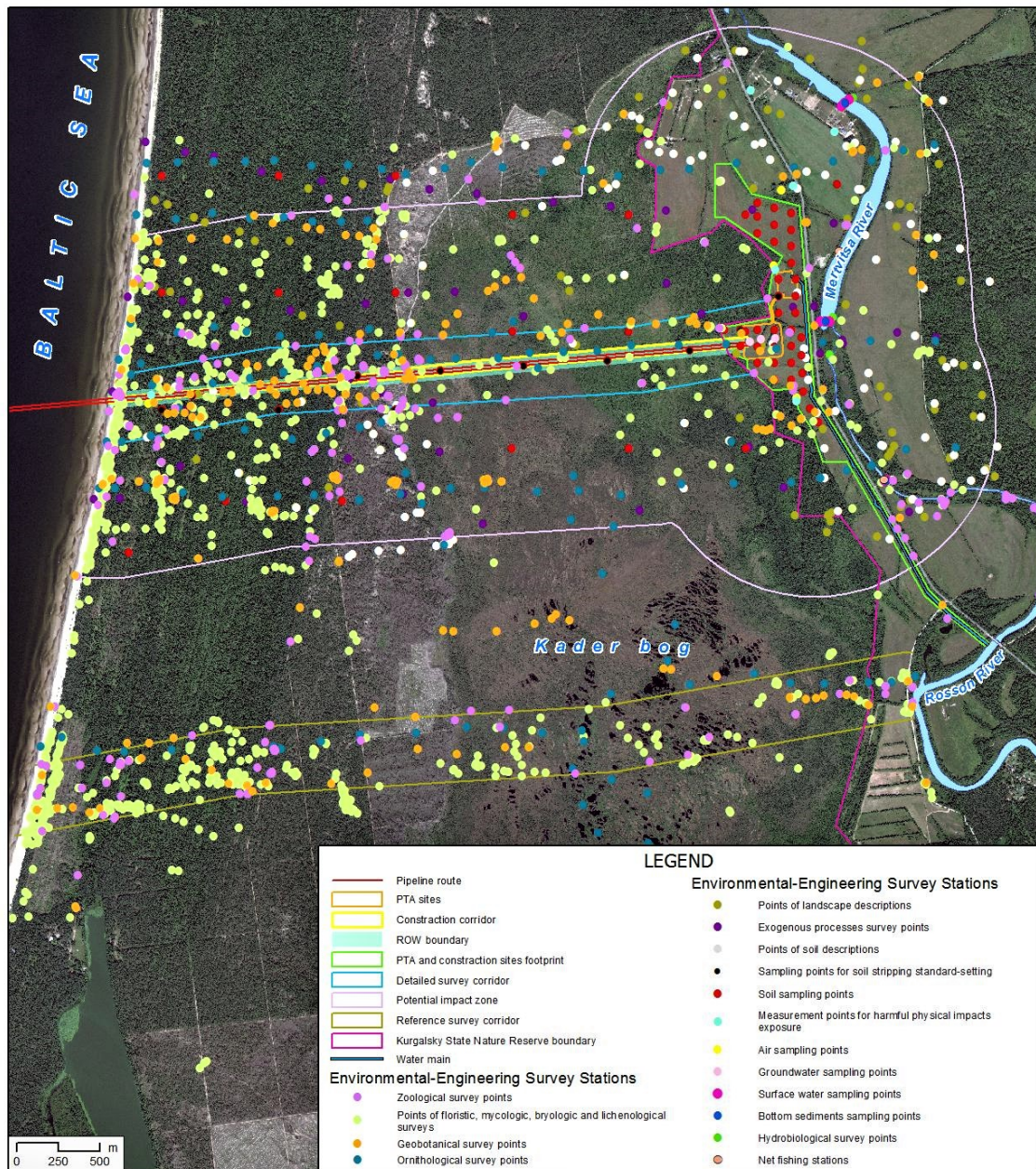


Figure 13. Intensity and distribution of sample points for the baseline ecological surveys<sup>90</sup>.

<sup>89</sup> Strelka KB. 2019. Management Plan for the Kurgalsky Nature Reserve Stage 13. Biodiversity Monitoring Programmeme. W-HS-EMS-LFR-REP-898-BIODMPEN-01.

<sup>90</sup> Nord Stream 2 AG. 2018 Design Documentation. Section 7. Environmental Protection Measures. Part 2. Onshore. Book 1. Text part. The Beginning. W-EN-ENG-PRU-RPD-837-070201EN-01. Volume 7.2.1. Figure 4.2 p. 50.

64. The consultants used a structured approach to identify where monitoring activities could be undertaken based upon existing material and data/reports developed during the Nord Steam 2 project. Both integrated and specialized monitoring identify performance indicators and frequency or timelines when the activity should occur. However, the performance indicators are currently missing an important criterion.
65. Performance indicators are bound by certain specified limits which represent thresholds for action and should trigger an appropriate response. These specified limits define the degree to which the value of a performance indicator is permitted to fluctuate without creating any cause for concern while keeping in mind the natural dynamics and cyclic change in populations and communities, and their carrying capacity limits. Some of these indicators may fall in the category of 'early warning indicators'.
66. Performance indicators should be selected with the following in mind: (i) characteristics, qualities or properties of a feature that are inherent and inseparable from that feature; (ii) indicators of the general condition of a feature, and be informative about something other than themselves; (iii) indicators being quantifiable and measurable; and (iv) providing an economical method for obtaining the evidence required to enable the current condition of a feature to be determined.
67. Accompanying performance indicators should be metrics to assess whether "output" or "outcome" objectives of the initial monitoring activities are being realized. Outputs are short term surrogates for how well a site is being managed, i.e. success of management interventions. Outcomes are longer term (more than three years) results of site management in achieving stated objectives to conserve/restore the actual environment.
68. Outcome indicators should be based on the ecological character and special features of the site, e.g. populations of threatened species or number of migrants staging and wintering at the site. Indicators should be selected that can be readily measured in the same way at specific intervals. Output indicators should focus on key data that the site management authority may need to readily collect and relate to key management objectives and users. These indicators may include those related to management interventions in relation to the scale of the problem.

**RECOMMENDATION 9: The long-term Environmental Monitoring Programme should include metrics for both longer-term outcomes and short-term outputs. It is thus important that for both a list of performance indicators, linked to the objectives, be prepared as part of the environmental monitoring, so that progress towards achieving the objectives can be ascertained.**

69. Special attention must be paid to changes at a biological community level, which may occur even when habitat conditions appear to remain the same. This is the case with fast-spreading pioneer species adapted to post-disturbance ecological conditions, which replace naturally occurring species. The fact the Ramsar Site experiences on-going direct management reduces the concern the system may become more species-rich compared to its ecological history.

**RECOMMENDATION 10: The long-term Environmental Monitoring Programme should identify the responsible agent and resources (e.g. staff requirements, financial costs, research institution) required for its delivery. Incorporated into the management plan, results of monitoring actions should be reported annually to a site management or administrative body.**

### **RAM Objective 3 – Assessment of the Biodiversity Action Plan**

70. The Biodiversity Action Plan (BAP) is intended to demonstrate NSP2's intent to operate responsibly and in full compliance with IFC PS6 when working in legally protected and internationally recognised areas and following identification of impacts from the pipeline project on critical habitat<sup>91</sup>. Requirements for working in high value conservation areas include implementing "additional programmes, as appropriate, to promote and enhance the conservation aims and effective management of the area." The company's overall aim of the BAP is a strategic set of actions that ensure the project has a net positive impact on biodiversity. NSP2 has approved and identified financing within its Long-Term Business Plan to support biodiversity conservation, including within the project's Russian landfall area.
71. To achieve a net gain in the biodiversity value of the Kurgalsky peninsula, the company has identified biodiversity conservation, sustainable use, and scientific research as priorities within the BAP. In accordance with Federal and Regional regulations on permitted activities and Russia's strategy on protected areas as a zone for sustainable development for remote communities, the BAP for the Kurgalsky Peninsula Ramsar Site includes an explicit role for business to support activities and development of sustainable tourism infrastructure within the protected area.

**RECOMMENDATION 11: The Biodiversity Action Plan of Nord Stream 2 AG provides a suitable framework for those actions that should be implemented as compensation for human-induced impacts to the Ramsar Site.**

#### ***Kurgalsky Peninsula Ramsar Site Management Plan***

72. A key component of the BAP is a Management Plan for the Kurgalsky Peninsula Ramsar Site which NSP2 has commissioned Strelka KB to develop. Effective management planning for maintaining the ecological character of internationally important wetlands is encouraged by the Ramsar Convention<sup>92</sup>. The most important functions of a management planning process and a management plan are to:
- identify the objectives for site management;
  - identify the factors that affect, or may affect, the important features;
  - resolve conflicts;
  - define the monitoring requirements;
  - identify, describe and maintain the management required to achieve the objectives;
  - obtain resources;
  - enable communication within and between sites and all stakeholders;
  - demonstrate that management is effective and efficient;
  - ensure compliance with local, national, and international policies
73. It is against these measures that the RAM Team based their assessment of the measures proposed by the pipeline constructor as part of its BAP to support the operations, survey and management of the Kurgalsky Regional State Nature Reserve, including measures to manage tourist and recreational access, increase public awareness on environmental concerns and natural values, and support local education programmes.
74. To develop biodiversity enhancement goals and objectives for the Management Plan Strelka KB,

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<sup>91</sup> Nord Stream 2. 2019. Biodiversity Action Plan. W-HS-EIA-GEN-REP-836-BAPGLOEN-02.

<sup>92</sup> <http://www.ramsar.org/sites/default/files/documents/pdf/lib/hbk4-18.pdf> Accessed: 15.12.19



under contract to NSP2, applied an analysis of threats and opportunities, a description and mapping of vegetation communities, and inventory of protected and rare species to develop four biodiversity goals<sup>93</sup>:

Goal 1. Biodiversity protection at the level of species, populations and biological communities (i.e. biotopes) (6 objectives);

Goal 2. Reducing adverse effects of potential threats to biological diversity (5 objectives);

Goal 3. Reaching a balance between nature conservation and recreational activities (4 objectives); and

Goal 4. Raising awareness among the local community of biodiversity protection measures (5 objectives).

75. We examined each of the 20 biodiversity objectives under their respective goal against criteria commonly applied in the setting of objectives and given the acronym S.M.A.R.T.

- *Specific* – can the objective target specific area(s) or species/populations.
- *Measurable* – can the objective quantify indicator(s) of success or progress.
- *Assignable* – can the objective specify group(s) responsible for implementation.
- *Realistic* – can the objective state results that can be realistically achieved if provided sufficient resources.
- *Time-related* – can the objective specify when target(s) (steps or conclusions) are to be met.

76. Conceptually, the biodiversity objectives provide a strong basis in the formulation of a detailed Management Plan for the reserve. The extensive information developed through the environmental assessment and on-going studies provide the empirical basis for strong baselines against which to develop measurable and quantifiable targets with specific timelines to accomplish. Success in achieving the goals and objectives will ultimately depend upon the financial and resource support accorded through the federal state-owned institution “Leningrad Oblast Forest Management”, NSP2’s long-term business plan to support its Biodiversity Action Plan and time-line to achieve a net gain in biodiversity by 2050<sup>94</sup>, and commercial tourism operating within the terms and conditions of a contractual agreement with the site management or administrative body.

**RECOMMENDATION 12: The assigning of responsibility for implementation of a Management Plan for the Kurgalsky Reserve should be undertaken following broad consultation and agreement, operating through an inclusive site management or administrative body.**

77. At the time of the RAM, several component studies providing detail for the management plan for the Kurgalsky Peninsula Ramsar Site were still in development. Specifically, these dealt with financial projections required to achieve the main elements of a management plan including infrastructure development, managing tourist and recreational use, environmental education and awareness programmes, visitor center development, environmental monitoring, and enforcement. Plans completed are conceptual at this point and are discussed below.

### ***Managing tourist and recreational use areas***

78. Zoning of the reserve is being developed as an approach to facilitate the implementation of the 20 distinct objectives under the biodiversity goals by identifying strict protection, restoration,

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<sup>93</sup> Strelka KB. 2019. Management Plan for the Kurgalsky Nature Reserve Stages 3-4. Threats, opportunities and conservation objectives paper. W-HS-EMS-LFR-REP-898-CONSERV-03

<sup>94</sup> Nord Stream 2. 2019. Biodiversity Action Plan. W-HS-EIA-GEN-REP-836-BAPGLOEN-02

environmental education, and recreational use zones. Although the objectives are stated to be in compliance with regulated and permitted uses of the nature reserve<sup>95</sup>, amendments to clause 4.1 of the Regulation of the Nature Reserve prohibiting construction and reconstruction are being recommended to permit specific activities related to restoration and low impact environmentally-friendly educational, recreational, and tourism infrastructure (e.g. camp sites, ecological trails)<sup>96</sup>.

79. Principal threats to ecosystems potentially leading to biodiversity loss include anthropogenic impacts associated with uncontrolled tourism, ground-cover disturbance with illegal roads to access recreation sites, illegal logging, and wildfires; biological impacts with pest infestations of spruce and pine forests; spread of invasive species; and external factors such as climate change, fishing, and shipping associated with the Ust-Luga port development impacting nearshore and marine complexes. Population growth with the Ust-Luga port development is also expected to increase tourist flow into the reserve.
80. The proposed Zoning Plan (Figure 14) specifies public access regimes, infrastructure (e.g. designated parking spots for personal vehicles and tour buses), types of environmental protection measures as well as types of tourist activities for different areas of the nature reserve depending on degree of their disturbance, vulnerability to recreational impacts, and patterns of use of the territory. Zoning is a reasonable approach to compartmentalize principle threats to ecosystem components and processes and develop and implement responses to limit and rehabilitate negatively impacted sites.

**RECOMMENDATION 13: Based on values, threats and vulnerabilities, the Zoning Plan should become a critical planning document supporting development of ecotourism and promotion of activities to cultivate public awareness of environmental issues.**

81. However, direct actions to limit vehicle access from public-access roads on to forest roads must be undertaken to complement zoning where driving is prohibited except for situations described in the nature reserve regulations. The RAM noted barriers had been placed on roads to limit access but in many instances these were ineffective as road and off-road vehicles (including small Quads) drove around the barriers through the forest. A suggested alternative is to deactivate unauthorized and forestry roads no longer required by exposing the mineral soil and planting trees.

**RECOMMENDATION 14: Patrols and enforcement must be increased to improve compliance with zoning and access regulations.**

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<sup>95</sup> Strelka KB. 2019. Management Plan for the Kurgalsky Nature Reserve Stages 3-4. Threats, opportunities and conservation objectives paper. W-HS-EMS-LFR-REP-898-CONSERV-03

<sup>96</sup> Strelka KB. 2019. Management Plan for the Kurgalsky Nature Reserve Stage 10. Final version of zoning plan. W-HS-EMS-LFR-REG-898-FVZONEEN-02.

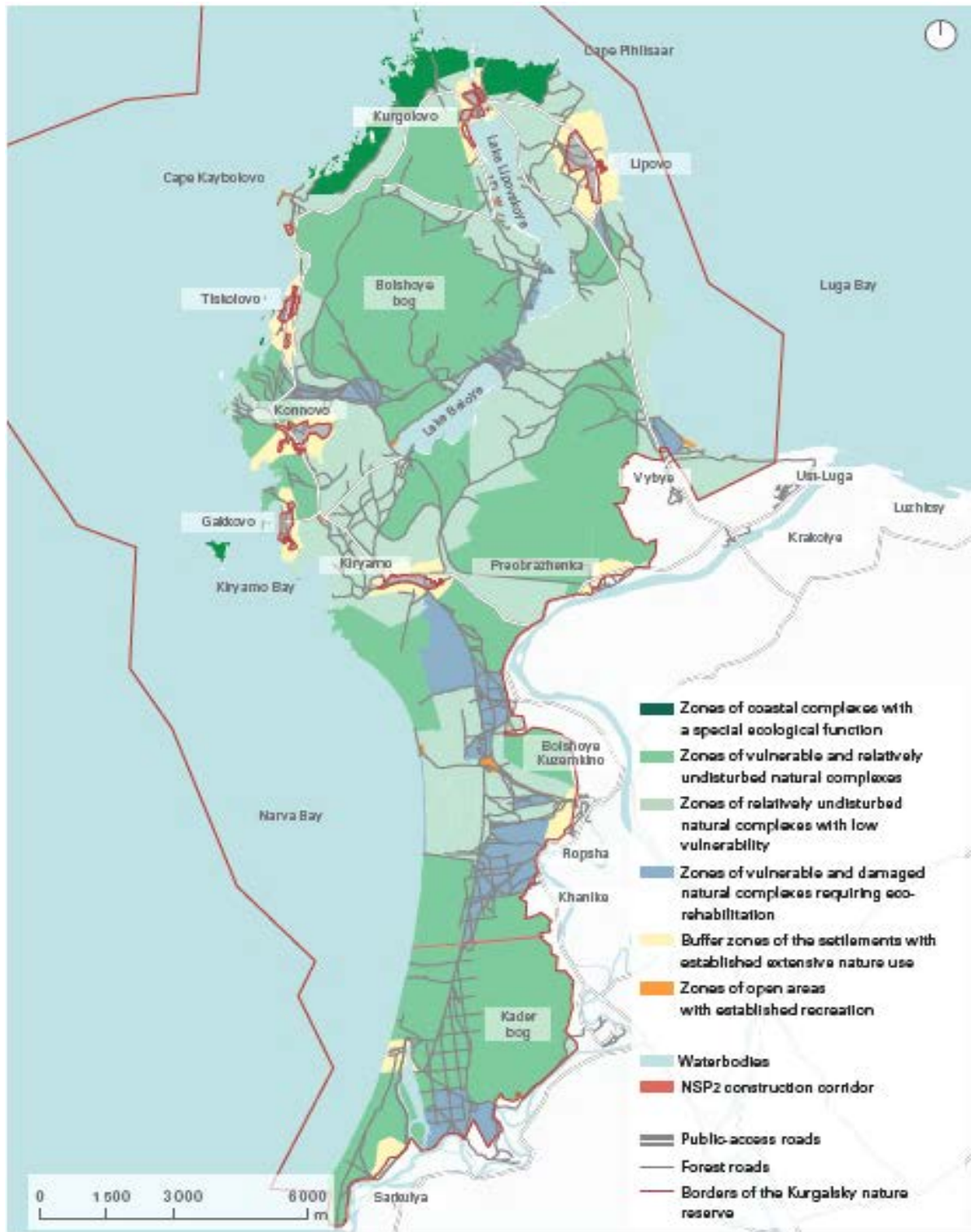


Figure 14. Zoning Plan for the Kurgalsky Peninsula Ramsar Site. (Map 5 in Strelka KB. 2019. Management Plan for the Kurgalsky Nature Reserve Stage 12. Final version of sustainable tourism master plan. W-HS-EMS-LFR-REP-898-FVSTMPEN-01.

### ***Sustainable tourism and environmental awareness***

82. Kurgalsky Nature Reserve will remain open to public use. Critical to the development of its Management Plan is information on current activities, habitat and destination use patterns, and volume and means of access of visitors to the reserve; expectations by both the local population and tourists on the reserve's role as a recreation area; the level of public knowledge of the reserve and its purpose; infrastructure and comfort facilities to enhance visitor experience; and effectiveness of existing management regime.

**RECOMMENDATION 15: To realize Russia's strategy on protected areas as a zone for sustainable development for remote communities, safeguards must be established to address conflicting demands for economic development and recreational use with conservation of natural habitats and protection of rare and/or threatened species and habitats.**

83. NSP2 commissioned Saint Petersburg State University (SPSU) to conduct a survey and assessment of visitor attitudes and use of the reserve to inform development of a plan for sustainable tourism within the overall site management plan. The survey was extensive employing personal interviews, focus groups, social media analyses, and visual observations in 2018 and 2019. Key results and conclusions of the study can be summarized as follows:
- Visitation is expected to increase due to interacting factors (elimination of border security, population increase, increase in car ownership, Ust-Luga port development, opportunities to fish, berry picking, and mushroom hunt) and thus threatening unique ecosystems and species without improvements in the regulation and management of tourist flow and recreational development and use of the reserve;
  - Recreational use occurs over much of the reserve impacting natural ecosystems with especially heavy use of the coastline and lakeshore beaches for swimming and sunbathing accompanied by unauthorized picnic and camping sites and litter;
  - Populations in districts closest to the reserve exhibit the greatest interest in visiting the reserve and view tourism development as an employment opportunity for young people;
  - Potential for tourism development is estimated as high due to natural conditions, recreational opportunities, and historical and cultural features;
  - An identified need to increase environmental awareness among visitors and locals; and improve tourism infrastructure and programmes within and outside the reserve (e.g. accommodation, parking, restrooms, sport gear rental shops, eco-tourism);
  - Poor compliance with existing codes and regulations to protect species and ecosystems in the reserve must be addressed by improving material, financial and human resources to monitor activities and enforce compliance; and
  - Develop a separate Kurgalsky Nature Reserve administrative body whose primary task "...should be development of the nature reserve as a zone of tourism and recreation, while ensuring compliance with codes and regulations in place at the nature reserve as a special area of conservation."<sup>97</sup>
84. The results and conclusions of the SPSU study informed Strelka KB's development of a conceptual sustainable Tourism Plan presenting: "...recommendations relating to the development of ecotourism, including proposals for creating environmental education routes and siting supporting tourism infrastructure..."<sup>98</sup> that are integrated and compatible with the objectives of the Zoning Plan.

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<sup>97</sup> Op. cit.

<sup>98</sup> Strelka KB. 2019. Management Plan for the Kurgalsky Nature Reserve Stage 12. Final Version of Sustainable Tourism master Plan. W-HS-EMS-LFR-REP-898-FVSTMPEN-01.



**RECOMMENDATION 16: The proposals outlined in the Tourism Plan should be implemented to reduce adverse anthropogenic impacts by directing and restricting tourist flows to less vulnerable areas, promoting environmental education and awareness activities, and providing a visitor center as a focal point to inform and increase environmental awareness among visitors.**

85. The tour of the Kurgalsky Peninsula Ramsar Site (on 14 November) provided the RAM Team the opportunity to observe a pilot eco-trail site, potential eco-tourism and cultural sites, a proposed wetland center site, restoration sites, and examples of disturbance. These on-site observations and discussions were then assessed against concerns brought forward by community elders, local officials of the Kingsiepp and Kuzemkino administrations, and environmentalist NGOs; proposed actions in the sustainable Tourism Master Plan<sup>99</sup>; and a conceptual eco-trail design for a proposed Vybya River Valley and Luga Bay ecotrail walked by the RAM Team.
86. Our observations confirm the levels of disturbance and lack of adherence to regulations identified in documentation provided. The single staff member assigned to the reserve is committed and knowledgeable but cannot effectively patrol the expanse of the reserve nor does he have the power of a state inspector to enforce regulations and impose fines. Vehicle and quad tracks were observed throughout; rutting wetlands and destroying ground vegetation in sensitive habitats (Figure 15a). Barriers installed on forest roads were avoided by driving through the forest. Camp sites and firepits were not in a controlled setting with infrastructure to manage waste products, trash and fire risk. Camping was noted to occur in sites sensitive to disturbance (e.g. pine forest on dunes). Volunteer activities to collect and bag trash left by visitors (Figure 15b) is commendable and should be encouraged but it does reinforce the need for better infrastructure to control access to defined zones in which visitor behaviour can be modified through environmental awareness programmes and information signage (Figure 15c). The conceptual sustainable Tourism Plan identifies mechanisms and key opportunities to inform visitors of conservation and protection needs while still providing controlled recreational opportunities in a natural setting which is the primary reason that draws most visitors to the reserve. Infrastructure planned for eco-trails will direct tourist flows, limit disturbance to a narrow corridor, and provide attractive observation and information kiosks.

**RECOMMENDATION 17: We commend the planning and guidance documents being produced for the site Management Plan and encourage strongly early engagement of an inclusive site management or administrative body to benefit the further development of the Management Plan, especially for the environmental awareness and education components.**



Figure 15. a) Track of a Quad in a sensitive ecosystem destroying ground cover vegetation; b) volunteer collecting and bagging of trash left by visitors; c) signage showing prohibited activities.

<sup>99</sup> Strelka KB. 2019. Management Plan for the Kurgalsky Nature Reserve Stage 12. Final version of sustainable tourism master plan. W-HS-EMS-LFR-REP-898-FVSTMPEN-01

## Visitor Centre

87. Wetland visitor centres can contribute greatly to communication, capacity building, education, participation, and awareness (CEPA) programmes and the Ramsar Convention strongly encourages the establishment of education centres at Ramsar Sites<sup>100</sup>. To raise public awareness of the value and vulnerability of the Kurgalsky nature reserve, the Sustainable Tourism Master Plan presents guidelines on organising a visitor centre — a facility informing visitors about features of the nature reserve, available environmental education routes, tours and safety rules and support facilities and services. An additional task identified for the visitor center is data collection and analysis of tourist visits to support a tourism management strategy and improve tourism packages. Several locations lying outside the reserve are proposed for the visitor center, with the village of Vybye or Bolshoe Kuzemkino located by the main entrances and experiencing the largest tourist flows being the most likely site.
88. The development of a wetland visitor centre should be considered as an opportunity to showcase best practice in environmental management. In planning the structure and layout of the visitor centre it is important to acknowledge that the centre must be attractive enough that people will want to come. This can be found from conducting an appropriate visitor survey beforehand to understand their expectations of the centre. The planning must also consider the centre's financial sustainability (i.e. whether the centre will be able to pay for itself). NSP2's ongoing involvement with the Ramsar Site during the operational life-time of the pipeline provides an excellent opportunity to build understanding in the development industry regarding conservation objectives. Likewise, there is an excellent opportunity to demonstrate a Government/Private sector/non-government partnership in the operation of the Visitor Center's education and awareness programmes and the management of the Ramsar Site.

**RECOMMENDATION 18: When developing a visitor centre, the issues and recommendations highlighted in the *Handbook on the Best Practices for the Planning, Design and Operation of Wetland Education Centres*<sup>101</sup> should be fully embraced.**

## Site management body

89. The Committee on Natural Resources of the Leningrad Oblast is responsible for reserve protection and use within the context of sustainable development with an emphasis on the reserve's tourism potential. The SPSU study however noted conflicting attitudes among the sampled population of local inhabitants, business community representatives, environmentalists, local authorities and others on if and how development of the tourism potential of the reserve should be undertaken. Views ranged from a complete ban on visitation as one means to preserve the integrity of the reserve contrasted with building infrastructure that will increase visitation and enhance the recreational experience. An alternative view was tourism will not only improve the local economy but lead to an improvement in the ecological condition of the reserve through restoration and better management. These divergent views were also apparent in the meetings of the RAM team with community elders, local officials of the Kingisjepp and Kuzemkino administrations, and environmentalist NGOs.
90. The SPSU study recommends the establishment of a specific administrative body responsible for making decisions and managing the Reserve. Its membership should include persons who can represent or support the services and features for which the site is important. A typical

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<sup>100</sup> <https://www.ramsar.org/news/handbook-on-best-practices-for-the-design-and-operation-of-wetland-education-centres>. Accessed: 17.12.19.

<sup>101</sup> [http://www.ramsar.org/sites/default/files/documents/library/2014wec-hb\\_en\\_lr.pdf](http://www.ramsar.org/sites/default/files/documents/library/2014wec-hb_en_lr.pdf) Accessed 27 July 2017

committee should be as inclusive as possible and might include site management and programme staff, site stakeholders including local people, funders (e.g. commercial sector), researchers, government department staff (e.g. planners, conservationists), interest groups and NGOs. Appropriate incentives to ensure stakeholder participation may be needed. Stakeholder interests can have considerable implications for site management and can place significant obligations on managers. Public interest must be taken into account, and site managers must recognize that other people may have different, and sometimes opposing, interests in the site. Where possible these interests should be safeguarded, but this must not be to the detriment of the ecological character of the site. A suggested list of issues to be covered in the Terms of Reference for such a body is provided in Annex II.

**RECOMMENDATION 19: A separate administrative body responsible for the decision-making process and future management of the Reserve should be established. Terms of Reference for such a body should be developed and a mechanism for dispute settlement included within the remit of the administrative body.**

91. Consultation and negotiation should be about presenting ideas or proposals for discussion and seeking views about specific issues. A structured planning process should generate ideas and proposals. Before any consultation, managers must know what they are attempting to achieve, and should define those areas that are open to negotiation.

**RECOMMENDATION 20: The Management Plan for the protected area should become a public document, and all stakeholders given access to the Plan.**

92. The NSP2 development within the Ramsar Site and the accompanying documentation have generated a substantial amount of empirical data. During the consultation process, the RAM team was made aware that there was a need for data to be freely shared among different stakeholders. A forward approach would be for the Committee of Natural Resources to house a publicly accessible database for all monitoring data collected, and this section also have the responsibility for updating the database and responding to data requests.

**RECOMMENDATION 21: Every attempt should be made to facilitate data sharing in a transparent and equitable manner so that all stakeholders understand the ecological character of the Ramsar Site and so that assessments of potential human-induced negative change can be undertaken in a robust manner. An annual State of the Environment Report for the Ramsar Site, based on the monitoring data, would be very useful to developers and regulators.**

### ***Management planning***

93. NSP2 is committed to leading the development of a Kurgalsky Reserve Management Plan. It has supported numerous studies and reports that provide background information and guidance for the most important functions of a management planning process and a management plan identified above. As noted previously, several key reports are still in their final phases of development and expected in the first quarter of 2020: financial plan, visioning study, and management model. The following are considerations for inclusion in the management Plan that is expected.
94. The management planning process provides the mechanism to achieve agreement between the managers, owners, occupiers, users and other stakeholders to ensure the biological diversity, productivity and ecosystem services supported by wetlands is used wisely. It should cover all activities on a site whether these are addressed by different agencies or procedures.

**RECOMMENDATION 22: The Management Plan is to become part of a dynamic and continuing management planning process. The Plan should be kept under review and adjusted to take into account the monitoring process, changing priorities, and emerging issues.**

95. Where possible management planning should not be restricted to the defined site boundary but should also take into account the wider context of planning and management, notably in the basin or coastal zone within which the site is located.

**RECOMMENDATION 23: It is important to ensure that the site planning takes into account external natural and human-induced factors and their influence on the site, and also to ensure that the management objectives for the site are taken into account in the wider planning processes.**

96. Management planning must be regarded as a continuous, long-term process. It is important to recognize that a management plan will grow as information becomes available. Planning should begin by producing a plan that meets, as far as resources allow, the requirements of the site and of the organization responsible. The planning process is adaptable and dynamic. It is essential that the plan changes, or evolves, to meet changing features, factors and priorities, both within and outside the site.
97. In order to safeguard sites and their features, managers must adopt a flexible approach that will allow them to respond to the legitimate interests of others, adapt to the ever- changing political climate, accommodate uncertain and variable resources, and survive the vagaries of the natural world.
98. With the collection of data, it is necessary to establish a data management system and a specimen curating system to:
- Establish clear protocols for collecting, recording and storing data, including archiving in electronic or hardcopy formats.
  - Ensure adequate specimen curating. This should enable future users to determine the source of the data, and its accuracy and reliability, and to access reference collections.
  - At this stage it is also necessary to identify suitable data analysis methods. All data analysis should be done by rigorous and tested methods and all information documented. The data management system should support, rather than constrain, the data analysis.
  - A meta-database should be used to: a) record information about the inventory datasets; and b) outline details of data custodianship and access by other users. Use existing international standards (refer to the Ramsar Wetland Inventory Framework – Resolution VIII.6).

**RECOMMENDATION 24: For the management planning process, it is necessary to collect data, to establish a data management system and a specimen curating system.**

## **Conclusions**

99. The construction cut and dual pipeline installation is a human-induced impact to the Ramsar Site that triggered Article 3.2 of the Convention and a request by the National Ramsar Administrative Authority for a Ramsar Advisory Mission. The RAM concludes that impacts resulting from the cut and installation are local and largely confined to the construction corridor. They are assessed as not having adversely affected the overall ecological character of the Ramsar Site. There are however residual impacts that, in line with Ramsar and IFC guidance,



require compensation. The RAM acknowledges and commends the undertakings by Nord Stream 2 AG to minimize impacts of its construction activities and to support long-term rehabilitation, restoration and site management of the Kurgalsky Peninsula Ramsar Site and Nature Reserve. Moreover, documentation produced by Nord Stream 2 AG represents a substantial body of work that greatly improves the understanding of the dynamics of the Ramsar Site and habitats found within the project site.

100. Although changes were made to the design of the on-shore route to reduce both the construction and permanent footprint of the pipeline route across the Kulgalsky Peninsula Ramsar Site, rehabilitation of the spruce and pine forest habitats is expected to be long-term and unlikely to restore to pre-existing conditions, the topography of the relic dune will only be partially restored requiring installation of slope breakers, and the original micro-topography of the swamp will be difficult to restore but techniques are being attempted to de-compact the peat and re-establish surface drainage patterns. The breakwater has been removed and rehabilitation of the marine flats and foreshore dunes to pre-existing conditions is expected to occur quickly due to exposure to wave and wind action without long-term impacts.
101. Detailed work was undertaken to assess project impacts on ground and surface hydrology within an area of influence that extends 1 km on either side of the construction corridor. Within Kader Bog, removal of the temporary road and reinstatement of cross drainage flows with restoration of an undulating terrain mimicking preconstruction topography will likely restore natural drainage patterns and prevent development of a preferential flow path. Coupled with additional mitigative measures, the pipelines in the swamp are not expected to impede groundwater flows.
102. Direct impacts to habitats had an immediate effect on their dependent species, e.g. as nesting and foraging habitats. The effect will however be at the individual rather than the population level. With revegetation of the construction corridor as its rehabilitation proceeds, species will naturally reoccupy the area as conditions appropriate to their life strategies develop. The species composition along the rehabilitated corridor will likely not represent the full complement present pre-construction as some changes to the habitat will be permanent. Impacts to species are believed to be local and will have minimal to no impact on populations with the Ramsar Site as a whole.
103. Ecological surveys conducted in 2015-2017 and in conjunction with the hydrological studies undertaken in 2018-2019 to describe seasonal variations in natural components and processes within the boundary of the Ramsar Site provide baseline data *inter alia* on soils, vegetation, local and migratory avifauna, indicator species, and hydrology against which to assess the effects of the pipeline development across the potentially affected landscape outside the construction corridor. Environmental monitoring one year after initiation of the construction phase beginning in 2017 reported no detectable impacts on local and migratory avifauna, or on indicator and rare fauna species. However, disturbance may have been a factor in the failure of a White-tailed Sea Eagle nest in 2019. Monitoring of rare and protected plants along the borders of the construction corridor were assessed by the company's contractor as being generally in good condition although declines in vigor and mortality were noted in some plots. High frequency of recreation use of a path crossing the construction corridor was noted as causing damage to ground vegetation. Similar damage to ground vegetation due to recreation use was observed at several other natural places elsewhere in the protected area. Thus, it is recommended that the monitoring programme continue and that it include metrics for both long-term results (outcomes) and short-term outputs. Performance indicators for both outputs and outcomes need to be linked to the objectives of the site Management Plan in order that

progress towards achieving these objectives can be ascertained.

104. The RAM evaluated the measures proposed by the pipeline constructor as part of its Biodiversity Action Plan to support the operations, survey and management of the Kurgalsky Regional State Nature Reserve, including measures to manage tourist and recreational access, increase public awareness on environmental concerns and natural values, and support local education programmes. Biodiversity enhancement goals (4) and objectives (20) for the site Management Plan were developed from an analysis of threats and opportunities, a description and mapping of vegetation communities, and inventory of protected and rare species. The RAM evaluated each of the 20 objectives under their respective goal against criteria commonly applied in the setting of objectives (acronym S.M.A.R.T.) Conceptually, the objectives provide a strong basis in the formulation of a detailed management plan for the reserve. The extensive information developed through the environmental assessment and on-going studies provide the empirical basis for strong baselines against which to develop measurable and quantifiable targets with specific timelines to accomplish.
105. Success in achieving the goals and objectives will ultimately depend upon the financial and resource support accorded through the federal state-owned institution Leningrad Oblast Forest Management; Nord Stream 2 AG's long-term business plan to support its Biodiversity Action Plan and time-line to achieve a net gain in biodiversity by 2050; and commercial tourism operating within the terms and conditions of contractual agreements with the site management or administrative body.
106. At the time of the RAM, several component studies providing detail for the management plan for the Kurgalsky Peninsula Ramsar Site were still in development. Specifically, these dealt with financial projections required to achieve the main elements of a Management Plan including infrastructure development, managing tourist and recreational use, environmental education and awareness programmes, visitor center development, environmental monitoring, and enforcement. Plans completed are still conceptual at this point.

## **RAM Objective 4 – Recommendations**

107. The final objective of the RAM was to provide specific recommendations from the review of the documentation, discussions and on-site visit. The 24 specific Recommendations have been developed and presented above. Below, they are grouped with the national or regional authority, or with the pipeline operator, believed to be most likely responsible for their implementation in cooperation with local partners.

### *Recommendations for the Russian Federation Ministry of Natural Resources*

**RECOMMENDATION 1: The results of the numerous studies undertaken with the Nord Stream 2 project should be used when updating as a matter of urgency the out-of-date RIS with summary descriptions of ecological components and processes, ecosystem services, habitat types, species abundance and distribution, ecological character threats and responses, and land tenure and responsibilities.**

**RECOMMENDATION 15: To realize Russia's strategy on protected areas as a zone for sustainable development for remote communities, safeguards must be established to address conflicting demands for economic development and recreational use with conservation of natural habitats and protection of rare and/or threatened species and habitats.**

*Recommendations for the Committee for Natural Resources and the Directorate of Specially Protected Natural Areas of the Leningrad Region*

**RECOMMENDATION 6: Monitoring nesting of White-tailed Sea Eagles within the Kurgalsky Ramsar Site, as part of a comprehensive environmental monitoring programme, should continue in order to provide valuable insight into how levels of disturbance may impact inter-annual variation in reproduction success.**

**RECOMMENDATION 7: Red-listed bird species (excluding the White-tailed Sea Eagle, cf. Rec. 6) are unlikely to be affected by the construction corridor over the long term but are recommended to be included in the comprehensive environmental monitoring programme.**

**RECOMMENDATION 8: As part of a comprehensive Environmental Monitoring Programme, documenting species response relative to the baseline pre-construction assessment along and adjacent to the construction corridor should be undertaken in order to provide an empirical measure of the magnitude of the restoration's success.**

**RECOMMENDATION 9: The Environmental Monitoring Programme should include metrics for both longer-term outcomes and short-term outputs. It is thus important that for both a list of performance indicators, linked to the objectives, be prepared as part of the environmental monitoring, so that progress towards achieving the objectives can be ascertained.**

**RECOMMENDATION 10: The Environmental Monitoring Programme should identify the responsible agent and resources (e.g. staff requirements, financial costs, research institution) required for its delivery. Incorporated into the management plan, results of monitoring actions should be reported annually to a site management or administrative body.**

**RECOMMENDATION 12: The assigning of responsibility for implementation of a Management Plan for the Kurgalsky Reserve should be undertaken following broad consultation and agreement, operating through an inclusive site management or administrative body.**

**RECOMMENDATION 13: Based on values, threats and vulnerabilities, the Zoning Plan should become a critical planning document supporting development of ecotourism and promotion of activities to cultivate public awareness of environmental issues.**

**RECOMMENDATION 14: Patrols and enforcement must be increased to improve compliance with zoning and access regulations.**

**RECOMMENDATION 16: The proposals outlined in the Tourism Plan should be implemented to reduce adverse anthropogenic impacts by directing and restricting tourist flows to less vulnerable areas, promoting environmental education and awareness activities, and providing a visitor center as a focal point to inform and increase environmental awareness among visitors.**

**RECOMMENDATION 18: When developing a visitor centre, the issues and recommendations highlighted in the *Handbook on the Best Practices for the Planning, Design and Operation of Wetland Education Centres* should be fully embraced.**

**RECOMMENDATION 19: A separate administrative body responsible for the decision-making process and future management of the Reserve should be established. Terms of Reference for such a body should be developed and a mechanism for dispute settlement included within the remit of the administrative body.**

**RECOMMENDATION 20: The Management Plan for the protected area should become a public document, and all stakeholders given access to the Plan.**

**RECOMMENDATION 21: Every attempt should be made to facilitate data sharing in a transparent and equitable manner so that all stakeholders understand the ecological character of the Ramsar Site and so that assessments of potential human-induced negative change can be undertaken in a robust manner. An annual State of the Environment Report for the Ramsar Site, based on the monitoring data, would be very useful to developers and regulators.**

**RECOMMENDATION 22: The Management Plan is to become part of a dynamic and continuing management planning process. The Plan should be kept under review and adjusted to take into account the monitoring process, changing priorities, and emerging issues.**

**RECOMMENDATION 23: It is important to ensure that the site planning takes into account external natural and human-induced factors and their influence on the site, and also to ensure that the management objectives for the site are taken into account in the wider planning processes.**

**RECOMMENDATION 24: For the management planning process, it is necessary to collect data, to establish a data management system and a specimen curating system.**

*Recommendations for Nord Stream 2 AG*

**RECOMMENDATION 2: The hydrological monitoring should continue until vegetation and topography restoration has been successful and monitoring of ground and surface water stabilizes to pre-construction conditions, in order to be able to confirm these expectations.**

**RECOMMENDATION 3: Consideration should be given to permanently blocking the drainage ditches and channels within and at the boundary of the bog as a component of restoration. The northern area of Kader Bog is the recommended site to meet compensatory requirements for critical habitat. Furthermore, the central and southern parts of Kader Bog had drainage ditches and while the central part was assessed as being in a stable condition, the southern part (36.5ha) could be restored to a raised bog by redesigning the drainage system.**

**RECOMMENDATION 4: Effective monitoring and reporting of the translocation specimens should contribute to retrospective evaluation and comparison with other documented translocation attempts. Open communication with, and participation by, NGOs in the monitoring and evaluation of the translocation programme could reduce the mistrust evident at the meeting.**

**RECOMMENDATION 5: Spring acoustic monitoring of the species should continue to assess response of the species following rehabilitation of the construction corridor and in conjunction with the hydrological monitoring and any compensation activities on Kader Bog.**

**RECOMMENDATION 11: The Biodiversity Action Plan of Nord Stream 2 AG provides a suitable framework for those actions that should be implemented as compensation for human-induced impacts to the Ramsar Site.**



## Annex I

### Terms of Reference

#### Ramsar Advisory Mission to Ramsar Site 690 Kurgalsky Peninsula, Russian Federation

(Published on the Ramsar website for the recruitment of the independent consultant.)

### Introduction

In designating a wetland for the Ramsar List, a Contracting Party commits to maintain its ecological character. However, Ramsar Sites can face a variety of challenges, including developments in the agricultural, industrial, infrastructure, residential, tourism and recreation sectors; water management issues that affect water quality and quantity; invasive alien species and climate change.

The Ramsar Advisory Mission (RAM) is a technical assistance mechanism, formally adopted by Recommendation 4.7 of the Conference of the Parties<sup>102</sup>, through which a Contracting Party may request expert advice in the assessment of potential threats to the ecological character of the Ramsar Site, and associated wetland issues. The mechanism typically involves a site visit by a team of experts, coordinated by the Ramsar Convention Secretariat, who assess the problems, discuss them with stakeholders and prepare a report, including recommendations. Formal guidance on the RAM process is provided in Resolution XIII.11<sup>103</sup> on *Ramsar Advisory Missions* and with specific Operational Guidance for Ramsar Advisory Missions<sup>104</sup>. This mechanism was never applied in the Russian Federation until present.

### Construction of a gas pipeline across the Kurgalsky Peninsula

On 3 July 2017, the environmental organisations Coalition Clean Baltic, WWF Russia and Greenpeace Russia contacted the Secretary General of the Ramsar Convention (copied to the Minister of Natural Resources and Environment of the Russian Federation) with a complaint about the violation of the Ramsar Convention by the planned construction of the Nord Stream 2 gas pipeline across the *Kurgalsky Peninsula* Ramsar Site, a Regional State Nature Reserve (*Zakaznik*) in the Leningrad Oblast and Baltic Marine Protected Area of the HELCOM network.

On 5 July 2017, the Ramsar Secretariat (together with IUCN) had a meeting with the pipeline constructor *Nord Stream 2 AG* at their head office in Zug (Switzerland) and obtained information on the reasons for choosing the Narva Bay route for the pipeline landfall in Russia and on the ongoing environmental impact assessment and consultation process (related i.a. to the Espoo Convention). A further information meeting took place at the Ramsar Secretariat/IUCN headquarters (15 December 2017), followed by two biodiversity round tables with a wider audience in St. Petersburg (24 January 2018) and in Geneva (6 February 2018), followed up by correspondence between the Ramsar Secretariat and the Russian Ramsar Administrative Authority (AA), i.e. the Ministry of Natural Resources and Environment of the Russian Federation.

As a result of these exchanges, the AA invited the Ramsar Secretariat (17 October 2018) to organise a RAM with a visit of the pipeline construction site towards the end of 2019. The objective of the RAM is based on practical considerations evoked between the pipeline constructor and the Ramsar Secretariat during a meeting on 11 February 2019.

The gas pipeline is constructed across the southern part of the Kurgalsky Peninsula Ramsar Site over a distance of 6.2 km, of which approximately 3.7 km are onshore and 2.5 km offshore, crossing shallow waters and the sandy beach of the Narva Bay (Baltic Sea), and onshore a coastal swamp forest (1 km), a forested relict dune (0.5 km), and a marginal part of the hydrological dome of the extensive Kader bog (2.2 km).

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<sup>102</sup> [http://www.ramsar.org/sites/default/files/documents/library/key\\_rec\\_4.07e.pdf](http://www.ramsar.org/sites/default/files/documents/library/key_rec_4.07e.pdf) Accessed: 20.11.19

<sup>103</sup> [https://www.ramsar.org/sites/default/files/documents/library/xiii.11\\_ramsar\\_advisory\\_missions\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/library/xiii.11_ramsar_advisory_missions_e.pdf) Accessed 20.11.19

<sup>104</sup> [https://www.ramsar.org/sites/default/files/documents/library/ram\\_ogs\\_2019\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/library/ram_ogs_2019_e.pdf) Accessed: 20.11.19

## The ecological character of Ramsar Site 690: Kurgalsky Peninsula

The Ramsar Site (65,000 ha) covers the shallow coastal waters of the Gulf of Finland with numerous islets around the Kurgalsky Peninsula and the peninsula itself southwards to the Estonian border. The terrestrial part is covered with mires and bogs, extensive pine forests and coastal dunes. Habitats include also patches of broad-leaved and mixed forests, coastal meadows and marshes with alder and oak, peat moss (*Sphagnum*) fens and bogs, floodplains, dry meadows, reed beds, rocky and sandy coastal shores. The Site exhibits a high species diversity of flora and fauna, supporting numerous species of regionally or globally threatened plants, mammals, birds, amphibians and reptiles. The coastal wetlands support large migrating and breeding populations of numerous species of waterbirds. The human population is scattered across a few small settlements inside the protected area and makes a living from the fisheries or seafood industry. Agricultural lands cover less than 10% of the Ramsar Site close to the southern border. This summary description is based on the most recent Ramsar Information Sheet – dating from 1997 – that is currently being updated by the AA. It should be noted that parts of the Ramsar Site have been impacted by drainage channels and through forest fires.

### Issues to be addressed by the RAM team

The mission team has to obtain background and first-hand on-the-spot information to evaluate the issues listed below and to assess if and how they affect the ecological character of the Ramsar Site, how this could be avoided or mitigated *ex post*.

The RAM team will focus prominently on these issues:

1. Assess possible effects of the trench box pipeline construction method across the onshore part (sandy beach, swamp forest, relict dune, peat bog dome) and the offshore pipeline laying in the shallow waters, notably regarding possible habitat alterations, disturbance to habitats and species, spread of invasive species, alteration of bog hydrology and related possible ecological changes.
2. Review and evaluate the environmental monitoring programme for the operational phase of the pipeline, developed and implemented by the constructor.
3. Evaluate the measures proposed by the pipeline constructor as part of its Biodiversity Action Plan to support the operations, survey and management of the Kurgalsky Regional State Nature Reserve, including measures to manage tourist and recreational access, increase public awareness on environmental concerns and natural values, and support local education programmes.
4. Make specific recommendations regarding the points listed above, as well as the needs and ways how to improve the scientific knowledge of the Kurgalsky Peninsula and to support and increase together with regional authorities (Committee for Natural Resources of Leningrad Region and Directorate of Specially Protected Natural Areas of Leningrad Region) local capacities and know-how for sustainable reserve management.

### Composition of the RAM Team

A representative of the **Ramsar Secretariat** leads and coordinates the RAM Team (Tobias Salathe). He assures that rules, decisions and resolutions adopted by the Convention are applied. The Secretariat RAM team leader is independent from the AA or any other stakeholder position.

The RAM Team includes a member of the national Ramsar **Administrative Authority**.

The RAM Team can also include additional Russian experts, or experts from neighbouring countries, proposed by the AA and/or the regional administration and a representative of the academic and scientific community (names will be included by the AA prior to the Mission).

The RAM Team includes an **independent** (not representing any interested party) **expert on peatland hydrology and environmental management** as outlined in the issues to be addressed above. The independent expert will

elaborate, in consultation with the other Team members, recommendations based on her/his assessment, independent of possible positions of the AA or any other stakeholder. An important function of the RAM Team is to provide an external and international perspective on the local and national issues at stake.

The independent expert will be hired specifically for the RAM by the Ramsar Secretariat (through a public announcement). S/he is fluent in English to write up the draft mission report in English. Understanding Russian will help her/him to evaluate background documents and communicate on-site with local stakeholders. The Secretariat will hire this expert in agreement with the AA, for the period needed to prepare the mission, executing the mission and to write up the mission report (total of 10-15 working days).

The expert will write the draft mission report in an independent and transparent way. The RAM Team members will agree on the final report to be prepared by the Ramsar Secretariat and accepted by the AA. The RAM Team provides objective advice and recommendations, based on its comprehensive, objective and impartial assessment of the situation and the issues at stake, and is perceived to do so by stakeholders and the wider public. Advice and Recommendations provided in the RAM report will support well-informed processes to prepare the best possible decisions by the AA or by any other part of the government of the Russian Federation and its subjects.

### **Stakeholders to be met by the RAM Team**

The RAM Team will meet during its on-site visit (in St-Petersburg, Kingisepp City, inside the Kurgalsky Zakaznik, on the pipeline construction site) representatives of the following stakeholder organisations. They will be invited to meet with the RAM Team by the Russian authorities, who will also help with Russian-English interpretation:

- representatives of the pipeline constructor Nord Stream 2 AG (and possibly also of the constructor of the terrestrial part of the pipeline leading to Kurgalsky Peninsula, Gazprom Ltd),
- representatives of the Kingisepp District and Kuzemkinskoye rural settlement administrations, whose territory covers the Zakaznik and the adjoining lands,
- representatives of the Committee for Natural Resources of Leningrad Region and Directorate of Specially Protected Natural Areas of Leningrad Region and Kingisepp District Forestry which are in charge of the Zakaznik management, environmental monitoring and education,
- representatives of people living inside the Zakaznik or undertaking regular (economic or recreational) activities inside the protected area,
- representatives of the environmental NGOs having submitted an initial complaint (Coalition Clean Baltic, WWF and Greenpeace Russia).

### **Programme, timetable and logistics of the RAM**

The mission will take place during the second half of September 2019 (between 17 and 30 September). This is a tentative programme proposal:

Day 1: - travel of RAM Team members coming from Moscow and abroad to St-Petersburg

Day 2: - initial meeting of the RAM Team with the regional authorities (Committee for Natural Resources of Leningrad Region and Directorate of Specially Protected Natural Areas of Leningrad Region) in St-Petersburg

- travel from St. Petersburg to Kurgalsky Zakaznik
- overnight in Dubki hotel close to Kurgalsky Zakaznik

Day 3: - on-site visit of the pipeline construction site

- meeting with stakeholders, including the constructor, Kingisepp District and Kuzemkinskoye rural settlement administrations, Kingisepp Forestry
- overnight in Dubki hotel

Day 4: - extended visit of Kurgalsky Zakaznik (including its visitor and education facilities, existing or planned)

- overnight in Dubki hotel

Day 5: - debriefing of the RAM Team with the regional authorities

- return travel to St. Petersburg (airport)
- return travel of the RAM team to Moscow or further

The AA will organise the **logistics** for the RAM (accommodation, subsistence and land travel for the RAM Team, meetings with authorities and stakeholders on-site and in St-Petersburg, etc.), likely with the help and support by the regional and local authorities and the constructor company.

The AA will cover the **costs** of the RAM, including the costs of hiring the RAM Team expert, possibly with contributions from the regional and local authorities (in kind) and with support of the pipeline constructor Nord Stream 2 AG.

### Follow-up of the Mission

The process to write up the mission report will be agreed by the RAM Team during its debriefing with the authorities at the end of the mission. The expert hired for the RAM will write up a draft mission report within one month after the mission. This draft report will then be edited by the Ramsar Secretariat and submitted to the AA for approval within three months. At this stage, some issues may need still to be clarified, possibly with additional inputs by stakeholders consulted during the RAM? However, this process of finalizing the RAM report between the AA and the Ramsar Secretariat should not take more than three additional months, i.e. the final RAM report will be published on the Convention's website by the end of March 2020 the very latest.

The **RAM report** will be written in English (with an Executive Summary and its Recommendations translated into Russian by the AA) and will be structured according to this standard format:

- **Executive Summary**, providing a brief overview of the issues addressed and the ecological character of the Ramsar Site concerned, date and duration of the RAM, composition of the RAM team, principal conclusions and recommendations of the RAM, and a statement how they should be followed-up – *[text can be copied from these ToR, the AA will translate the Executive Summary into Russian]*;
- **Background** to the Mission, with a brief summary of consultations that resulted in the initiation of the RAM; and a
- **Brief description of the wetland site**, including a location and site map and links to the Ramsar Information Sheet, but excluding technical descriptions with no direct relevance to the specific issues being addressed by the RAM – *[text from these ToR can be used]*;
- **Summary of the current situation** as assessed by the RAM team, focusing on findings and conclusions that apply to the core issues of the Mission;
- Stand-alone list of all **Recommendations** – *[to be translated into Russian by the AA]*;
- **Annexes** covering the – *[based on the text of these ToR]*:
  - o Terms of Reference for the RAM
  - o Composition of the RAM team
  - o Programme of the on-site Mission
  - o List of stakeholders consulted and other contributors
  - o Acknowledgment of the hosts, contributors and donors.

The RAM report should be written as short as possible (but as long as necessary). Recommendations listed in the RAM report should be linked to the findings and conclusions of the Mission Team, and these in turn need to be linked to the issues to be addressed, listed above. It may be helpful to distinguish between short-term, medium-term and long-term actions to be undertaken. Each Recommendation should be tested if it clearly identifies the action to be taken, who has to take it, by when, subject to which enabling conditions, and with which measurable indicators of implementation and success? Narrative text on these points may be supported by a simple table of suggested actions, time frames, stakeholder groups, practical indicators, etc.

As part of the **regular reporting process** to Standing Committee and the COP providing an *annual* update on the status of Ramsar Sites, the Ramsar Secretariat will ask the AA to provide a short update on progress with implementation of the Recommendations made by the RAM at annual intervals. Through this reporting

process, the Kurgalsky Peninsula Ramsar Site will remain in the list of sites with an “open Article 3.2 file” after the RAM until the AA reports to the Secretariat that the Recommendations listed by the RAM have been satisfactorily implemented.

### ***Final programme of the Ramsar Advisory Mission as executed***

11 November – Arrival in St. Petersburg

12 November – Meeting in St. Petersburg

*Location: Lotte Hotel, St. Isaac's Square, Antonenko Lane 2, Saint-Petersburg*

09.00 – 09.15: Ministry of Natural Resources to open the Advisory Mission  
09.15 – 09.30: Ramsar Secretariat to state objectives of the Advisory Mission  
09.30 – 12.30: Nord Stream 2 presentations (project status, construction method, results of hydrological assessment, bird and general monitoring results)  
12.30 – 13.45: Lunch  
13.45 – 15.30: Nord Stream 2 presentation (Biodiversity Action Plan) and presentation of Committee of Natural Resources of Leningrad Region  
15.30 – 16.00: Coffee break  
16.00 – 17.30: NGO presentations  
17.30 – 18.00: Preparation of wrap-up session  
18.00 – 18.30: Wrap-up session  
19.00: Dinner

13 November – Visit of Nord Stream 2 Construction Site

*Location: Nord Stream 2 Construction Site*

08.00 – 10.30: Transfer to site from St. Petersburg  
10.30 – 11.00: Safety instructions  
11.00 – 12.30: Meet local administrations of Kingisepp and Kuzemkino  
12.00 – 12.30: Lunch  
12.30 – 13.00: Preparation of personal protective equipment for visit to Construction Corridor  
13.00 – 16.00: Visit of Construction Corridor within protected area to evaluate visible or possible environmental effects  
16.00 – 16.30: Travel back for refreshments  
16.30 – 17.30: Construction and permitting site personnel to be present for Q&A  
17.30 – 18.00: Travel to Hotel Dubki  
18.00 – 18.30: Preparation of wrap-up session  
18.30 – 19.00: Wrap-up session  
19.00: Dinner

14 November – Visit of Kurgalsky Nature Reserve

*Location: Kurgalsky Nature Reserve*

08.30: Leave Dubki Hotel  
09.15 – 10.00: Pilot Eco-trail site and Vibye beach  
10.00 – 10.45: Planeta Plus camping site  
10.45 – 11.30: Anticlockwise drive of peninsula with brief stops at various locations  
11.30 – 12.00: Forest roads closure site  
12.00 – 15.30: Beach (picnic lunch) and southern part of Kader bog  
15.30: Drive back to St Petersburg

15 November – Meeting in St. Petersburg

*Location: Lotte Hotel, St. Isaac's Square, Antonenko Lane 2, Saint-Petersburg*

10.00 – 12.00: Debriefing by Ramsar Secretariat and Independent Expert followed by discussion  
13.00: Departure



## Stakeholders consulted *in fine*

Russian Forestry Institution of Russian Academy of Science	<i>Andrey Sirin</i>
Russian Federation State Hydrological Institute	<i>Mikhail Markov, Sergei Zhuravlev, Liubov Kurochkina</i>
Directorate of Specially Protected Natural Areas of Leningrad Region	<i>Alexander Siluyanov</i>
Committee of Natural Resources of Leningrad Region	<i>Fedor Stulov</i>
Inspector of the Kurgalsky Reserve	<i>Evgeny Belik</i>
Protected Areas Administration St-Petersburg	<i>Nadezhda Aleveeva</i>
Kingisepp Administration	<i>Viktor Tolkachyov, Yevgeny Smirnov</i>
Kingisepp Committee for Architecture and Territorial Planning	<i>Elena Kostyuchenko</i>
Kuzemkino Municipality	<i>Yury Esmirnovich</i>
Council of Deputies of the Kuzemkinsky rural settlement	<i>Svetlana Pryder</i>
Kuzemkino Museum of Local History	<i>Valentina Pilli</i>
Elder of the village Ropsha settlement	<i>Elena Popova</i>
Public Council of the Southern Coast of the Gulf of Finland	<i>Elizaveta Mikhailova</i>
ESMS Lead	<i>Michael Haynes</i>
EcoProject Ltd	<i>Svetlana Korneva, Andrey Filipov</i>
Wetlands International & WWF Russia	<i>Irina Kammenova</i>
Coalition Clean Baltic	<i>Anna Doronina, Ana Loseva, Sergey Kouzov, Karolina Epiphantseva</i>
Greenpeace Russia	<i>Anastasia Philippova, Eugeniy Usov, Irina Baranovskaya</i>
Nord Stream 2 AG	Permitting Manager Russia Head of Permitting Manager Permitting Office Environmental and Social Manager Senior Environmental Expert Landfall Russia Environmental Advisor
	<i>Gregory Vilchek Simon Bonnell Lukas Brunnschweiler Antonio Santaniello, Karina Nicholls Wayne Schaefer</i>

## Annex II

### Elements for Terms of Reference for a Kurgalsky Peninsula Administrative Body

There are many ways to define the roles and responsibilities associated with an administrative body that fits for purpose within the local context. Annex X provides information on the terms of reference established at other Ramsar Sites across the world. Some commonalities that can assist in crafting a Terms of Reference for a Ramsar Site are:

- Defining a Vision for the Committee - e.g. Kurgalsky Peninsula Ramsar Site will be a world class site that is a show-case best practice in environmental management for the integration of conservation, education, recreation, tourism and research
- Establishing committee structure - Work under the overall guidance and supervision of the Natural Resource Committee and be comprised of representatives of key stakeholder groups
- Legal responsibility - Committee will ensure compliance with relevant local, national and international legislation, policies and best practice
- Community engagement - Committee will undertake community consultation that is effective and equitable.
- Management planning responsibility – the Committee will provide direction on the preparation of a Ramsar Site Management Plan drawing upon guidance provided in the Kurgalsky Nature Reserve Management Plan (under development) and the Ramsar Handbook 18 *Managing Wetlands*<sup>105</sup>
- Implementation responsibility - Committee will be responsible for coordinating specific aspects of themes of the management plan including:
  - Annual action plans
  - Hiring of staff for programme implementation as per need
  - Preparing project investment proposals
  - Coordinating monitoring and evaluation of implementation, including integrated reporting against targets, and
  - Reviewing Management Plan progress and preparing progress reports

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<sup>105</sup> <http://www.ramsar.org/sites/default/files/documents/pdf/lib/hbk4-18.pdf> Accessed: 18.12.19.