



# Chapter 13

## **Gaps and Uncertainties**



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## 13 Gaps and Uncertainties

### 13.1 Introduction

In this chapter of the Espoo Report we present information concerning the way that the assessment has addressed issues of uncertainty and gaps in data identified during the assessment. The gaps and uncertainties listed below are mostly typical of those facing offshore projects and are not considered to be critical in assessing the broad range of impacts associated with the Nord Stream Project.

### 13.2 Dealing with uncertainty

EIA is a process that aims to identify and anticipate possible impacts based on past and present baseline information. As the EIA deals with the future there is, inevitably, always some uncertainty about what will actually happen. Impact predictions have been made based on extensive Project-related surveys and with the best data, methods and scientific knowledge available at this time. However, some uncertainties could not be entirely resolved. Where significant uncertainty remains this is acknowledged within this report and an indication of its scale is provided.

In line with best practice, this EIA has adopted a precautionary approach to the identification and assessment of impacts. Where it has not been possible to make direct predictions of the likely level of impact, limits on the maximum likely impact have been reported and the design and implementation of the Project (including the use of appropriate mitigation measures) will ensure that these are not exceeded. Where the magnitude of impacts cannot be predicted with certainty, the EIA team has used its professional experience and available scientific research from the Baltic Sea to judge whether a significant impact is likely to occur or not. Throughout the assessment this conservative approach has been adopted to the allocation of significance.

Monitoring of the ongoing implementation of the Project is clearly important both in ensuring that data is gathered on the actual effects of Project interventions and in assessing the effectiveness of mitigation and management measures. Additional surveys are being (or will be) carried out prior to construction to further reduce the uncertainties in some areas. The Nord Stream Project will be adopting a robust approach to the monitoring and management of impacts and implement mechanisms to evaluate the results of the monitoring and provide for subsequent mitigation as necessary. This will help to ensure that impacts are managed in a proactive manner. The phased implementation of the Project, with one pipeline being constructed prior to

the other, allows that lessons learnt during earlier stages of the Project can feed into the subsequent stages.

### 13.3 Dealing with data gaps

The Baltic Sea has been extensively investigated by numerous researchers, meaning that this EIA has been able to draw on an extensive amount of data, such as that published by HELCOM and the various national research institutions of the Baltic countries. This bank of published data has been supplemented by an extended field survey programme and studies undertaken by Baltic Sea specialists on behalf of Nord Stream to collect specific baseline data along the proposed pipelines' corridor.

### 13.4 Pertinent data gaps

Inevitably knowledge gaps remain. In common with other marine ecosystems, our present understanding of how the system works in physical, chemical and biological terms is far from complete. For instance, there is an incomplete understanding of cumulative and indirect effects; interactions are often not well understood, the degree of natural variability in the Baltic Sea and different temporal and spatial scales at which natural phenomena of interest operate (e.g. natural re-suspension events, extent of fish spawning and the resulting productivity or magnitude of the Baltic influx) are also key areas of ongoing research.

With reference to this Report the following issues and known data gaps need to be additionally taken into account.

#### 13.4.1 Gaps in baseline information

The pertinent gaps in baseline information which would primarily influence the assessment of resource or receptor sensitivity are the following:

- Limited catch data and fish pattern for fishing vessels of less than 10 metres
- Limited data on natural ranges of suspended matter, hydrogen sulphide and oxygen in the water column near the seabed along the length of the pipeline
- Limited understanding of the natural variability and trends in population size and the spatial and temporal distribution of species of interest. Long-term ecological data are needed for the study of biological systems over seasonal and annual time frames but these are typically lacking.

### 13.4.2 Gaps in understanding of impacts

The following are the most pertinent gaps in understanding the scale, duration and intensity of impacts:

- Gaps in data on the ability of the Baltic Sea fisheries to adapt their fishing patterns in response to the obstacle associated with the long term presence of the two pipelines on (or near) the seabed
- Limited understanding of the impacts on different receptors of munitions clearance. Specific gaps include pulse propagation, scale and intensity and the duration, scale and intensity of suspended matter in the water column
- Impacts of underwater and airborne noise levels or dredge plumes on fish, marine mammals and birds; e.g. the zone of influence in which birds will exhibit “startle behaviour” is not known for all species in the ESRs
- The period of time necessary for benthic communities to recover from different impacts
- The multiplicity of factors that makes it difficult to assess both the relative impact of any single factor, anthropogenic or natural, to the dynamics of the ecosystem
- The cumulative impacts of the pipelines with developments such as wind farms, new cables for telecommunications and the extraction of minerals in the Baltic Sea
- Inherent limitations of models (e.g. sediment spreading, nutrient and contaminant release, and oil spill modelling) to accurately predict the magnitude and extent of impacts