

Delta North Wind Farm

Consultation in accordance with Chapter 6 of the Environmental Code (1998:808) ("MB")

2026-02-16

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1. Introduction

1.1 Background

A project company within the Zephyr Group ("Zephyr") plans to apply for a permit for an offshore wind farm located in the Swedish economic zone approximately 55 kilometers east of Sandhamn. The wind farm is called Delta North and is planned to consist of a maximum of 105 wind turbines with associated transformer stations, platforms, facilities and infrastructure such as internal cable networks. The total height of the wind turbines is planned to be a maximum of 330 metres.

The Zephyr Group owns and manages the development of the Delta North project. The Delta North project is being developed with the same design and within the same geographical area as the previous Baltic Offshore Delta North project owned by Delta North Offshore Wind AB, which at the time of application was part of the Statkraft Group. Since the end of 2025, the Zephyr Group, together with the project's initiators, is developing the project further. Project Delta North is thus based on documentation and project information attributable to the previous project.

The permit application for Baltic Offshore Delta North was submitted by Statkraft to the Swedish Government on 18 October 2024 and was denied shortly thereafter, on 4 November, in connection with the Government's decision regarding 13 other offshore wind power projects in the Baltic Sea. The case was thus dealt with for a period of less than 3 weeks and was never referred to the relevant authorities for an objective assessment. Zephyr therefore believes that a site- and project-specific assessment of the technical design, location conditions, the project's environmental impact, and its compatibility with other public and private interests according to the Environmental Code (1998:808) should be carried out.

Energy policy developments in recent years have clearly shown the need to strengthen Sweden's energy supply and reduce the need for imported electricity and fossil energy sources. In this context, offshore wind power is a strategically important resource that enables large-scale and long-term sustainable electricity production.

The Stockholm region is currently an area with a pronounced electricity deficit, which means that the region's consumption exceeds regional production and that significant parts of the electricity must be imported from other parts of the country. This imbalance creates vulnerabilities in the electricity system and risks inhibiting both business development and long-term societal growth. In order to enable continued growth and stable electricity supply in the region, new electricity production in the immediate area is crucial.

From a resilience perspective, this need is even more prominent, as a robust and diversified electricity supply is a central part of society's crisis preparedness. Furthermore, Zephyr assesses that the development that has taken place in radar and sensor technology, together with the extensive government investments made in defense technology in recent years, has significantly created improved conditions for coexistence with important defense interests. With an appropriately designed facility and through integrated and controlled monitoring systems within the wind farm, Zephyr assesses that an installation of this type should not only be able to coexist with defence interests, but also potentially strengthen the national defence capability, as there are examples of from other parts of the Baltic Sea.

Against this background, a consultation is now being initiated in accordance with Chapter 6. of the Environmental Code (1998:808) ("MB") for the Delta North project.

1.2 About Zephyr

The Delta North wind power project is being developed, as stated above, by companies within the Zephyr Group. The project has previously been owned by and developed within the Statkraft Group. The current ownership group also includes Vanir AS and Vindkraft Värmland AB, which are the project's original initiators. The owner companies have extensive experience and specialist expertise in the development of offshore wind power.

The Zephyr Group is municipally owned by the energy companies Østfold Energi and Vardar. Together, they produce over 5 TWh of renewable electricity, most of which is hydropower. The Zephyr Group has developed 800 MW of wind power since 2006. Sweden has an extensive project portfolio in offshore and onshore wind power, solar power and energy storage.

Companies within the Zephyr Group are also project developers and co-owners of KonTiki Vind AB with the two offshore wind power projects Vidar and Poseidon.

1.3 About the need for renewable energy

Government has made it clear that Sweden needs a powerful expansion of new fossil-free electricity production. Furthermore, the government has set the goal of 100 percent fossil-free electricity production by 2040 and zero net emissions of greenhouse gases into the atmosphere by 2045. In order to achieve Sweden's set energy and climate goals, the Swedish Energy Agency and the Swedish Environmental Protection Agency have stated that conditions need to be created for wind power to be able to account for 100 TWh of electricity production annually by 2040. (Klimat- och näringslivsdepartementet, 2025)(Energimyndigheten, 2025)(Energimyndigheten, 2021)

The Swedish Energy Agency assesses that the need for electricity in the long term is likely to increase sharply and believes that the largest increase in electricity use in the future is expected to occur in industry, partly when the transition from fossil fuels to electricity in existing industry takes place, and partly when new industries are established for the production of, among other things, fossil-free steel, electrofuels and green hydrogen. As businesses switch to renewable energy, the need for electricity is likely to increase and thus the need for renewable electricity production.(Energimyndigheten, 2023)

National developments coincide with Europe's need to rapidly reduce its structural need for imported fossil fuels and other external energy raw materials. The changed geopolitical situation, combined with rising energy costs and an increased risk of disruptions to international supply chains, has highlighted the importance of ensuring resilient domestic electricity production. At the North Sea Summit 2026, this was highlighted in particular by the adoption of the *Joint Offshore Wind Investment Pact*, in which European leaders stressed the need to strengthen its energy security and reduce its dependence on fossil fuel imports through a greatly accelerated deployment of offshore wind power and the strengthening of cross-border electricity grid connections. The agreement emphasises that reducing import dependency is a key part of Europe's path towards greater geopolitical stability and energy independence.(European Commission, 2026)

Wind power is a type of power that, with the right conditions, can be expanded relatively quickly and cost-effectively. In the transition to a fossil-free Sweden, in order to achieve the set energy and climate goals and to ensure Swedish competitiveness, the expansion of wind power for electricity

production will be crucial. In Sweden, the conditions for using offshore wind power to produce electricity are good thanks to Sweden's long coastline.

The Delta North wind farm is estimated to be able to produce up to approximately 8.3 TWh per year, which corresponds to approximately 6% of Sweden's annual electricity consumption in 2024 (SCB, 2024) or electricity to approximately 1.6 million households, based on an average consumption of 5,000 kWh per household per year. This, combined with an expected lifetime of the wind farm of 40-45 years, means that the wind farm can make a significant contribution to Sweden's total energy needs and Sweden's goals of reduced emissions and renewable electricity production.

1.4 About Project Delta North

A project company within the Zephyr Group plans to apply for a permit for an offshore wind farm called Delta North about 55 kilometers east of Sandhamn, 90 kilometers northeast of Gotska Sandön and about 32 kilometers east-southeast of Svenska Högarna, see Figure 1. The wind farm is planned to consist of a maximum of 105 wind turbines with associated transformer stations, platforms, facilities and infrastructure, such as internal cable networks. The total height of the wind turbines is planned to be a maximum of 330 meters and the wind turbines are planned on bottom-fixed foundations.

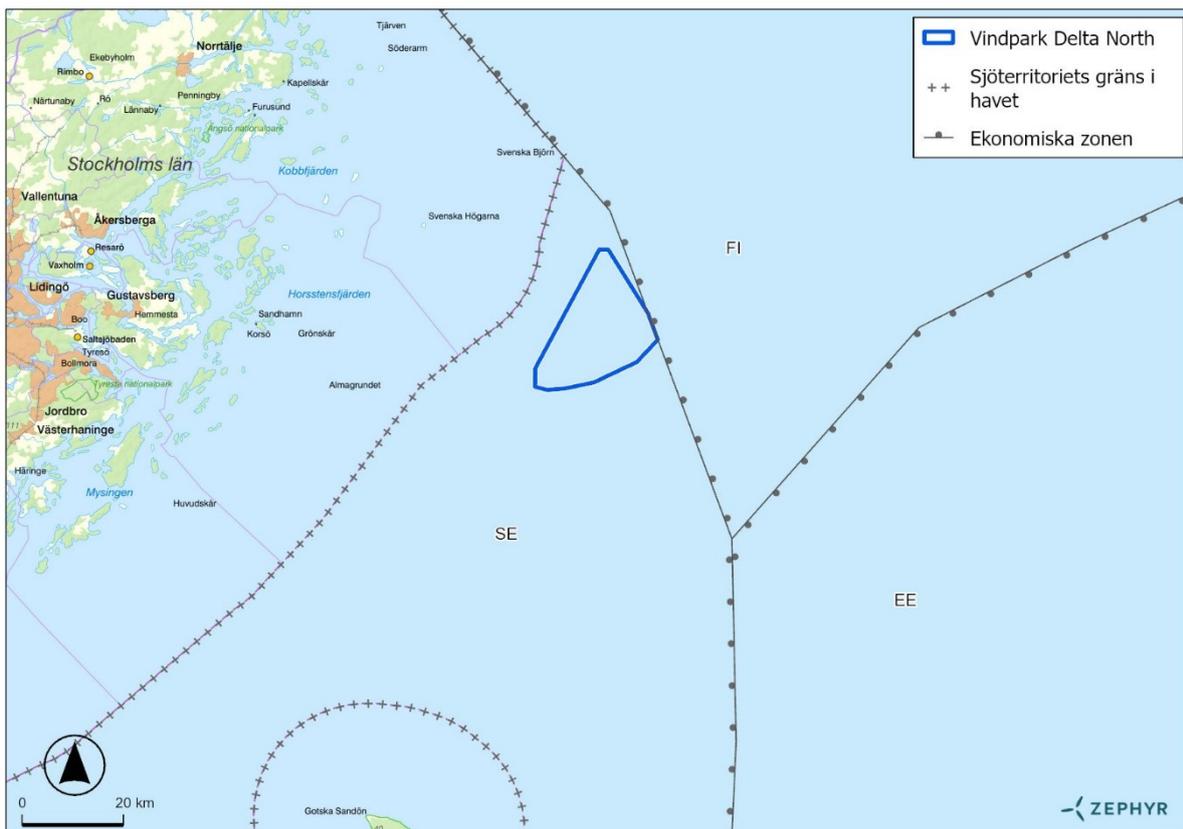


Figure 1. Location of wind farm Delta North

Table 1. Facts about Delta North

Maximum number of wind turbines	105
Maximum overall height	330 m
Estimated total installed power	Approx. 2100 MW
Estimated annual electricity production	Approx. 8300 GWh
Foundation	Bottom-fixed foundations
Wind farm area	377 km ²
Bottom depth	Approx. 40-125 m

2. Legal context

2.1. Scope and legislation

The present consultation document has been prepared as a basis for a delimitation consultation pursuant to Chapter 6, Sections 29–32 of the MB. Investigation consultation pursuant to Chapter 6. Sections 23–25 MB have not been implemented, as wind farms are generally considered to have a significant environmental impact.

The project area is located within the Swedish Economic Zone, which is why a permit is intended to be applied for in accordance with the Swedish Economic Zone Act (1992:1140) ("LSEZ"). For internal cable networks, a permit will also be applied for in accordance with the Continental Shelf Act (1966:314) ("KSL"). The said permit is also intended to include such geophysical and geotechnical survey work (including drilling) that is necessary for and during the detailed design and construction and operation of the wind farm. Permits for these exploration works may alternatively be applied for separately.

Potential impacts on the environment in the Natura 2000 areas located in the vicinity of projects will be investigated and described in the upcoming Environmental Impact Assessment ("EIA"). If necessary, a permit will be applied for in accordance with Chapter 7. 28 a § MB (Natura 2000 permits).

2.2 Consultation

The delimitation consultation is carried out with the aim of providing information about the planned activities in a comprehensive manner in terms of, for example, location, implementation and any environmental effects that the planned activities are deemed to give rise to. The purpose is also to obtain views on the content and design for the preparation of the upcoming environmental impact assessment. The consultation process gives authorities, organizations and the public the opportunity to contribute their information and opinion.

The consultation forms the basis for the EIA prior to the application for permits under LSEZ, KSL and Natura 2000 permits as stated in section 2.1. The consultation is limited to the total life of the wind farm, i.e. preparatory investigations (including drilling), establishment, operation and decommissioning of the business including associated infrastructure such as foundations/anchoring and transformer stations, etc., as well as the closure and maintenance of internal cable networks .

Permits for export cable networks and shore connections will be applied for through separate permit processes, which is why these parts are not covered by this consultation.

The consultation circle consists of authorities, municipalities, organizations, companies and the general public who may be affected by the project. The identified consultation group for the current consultation is attached in Appendix 1. Invitations to the consultation are made via digital mailings to the consultation group and via advertising in the newspapers Dagens Nyheter, Norrtelje Tidning and Nacka-Värmdö Posten.

As the project is located in Sweden's exclusive economic zone, in an area that Zephyr assesses may affect the interests of other nations, consultations will also be held based on the Convention on Environmental Impact Assessment in a cross-border context "Espoo Convention".

Comments received in the consultation will be compiled in a consultation report which will be attached to the upcoming EIA prepared in accordance with Chapter 6. MB and forms the basis for the above-mentioned applications.

3. Description

Below is an overall description of the planned operations and the technical components of the wind farm. The descriptions are general as the technology development in the wind power area is fast and Zephyr does not want to limit itself in terms of technology choices. Zephyr intends to use what is considered to be the best possible technology at the time of construction.

3.1 Wind farm infrastructure

The wind farm will consist of a maximum of 105 wind turbines with a maximum total height of 330 m (above sea level). All wind turbines and transformer stations will be placed on bottom-fixed foundations. An internal cable network will be located within the wind farm that connects the wind turbines, partly with each other and partly with one or more transformer stations that will also be established within the project area to transform the power to a level that is suitable for transmission to land.

Export cables for the transmission of the produced electricity from the wind farm to a location on land will be handled in a separate permit examination and are not described in the section below.

3.2. Design of the wind farm

The upcoming permit application for the wind farm will cover a geographically defined area. Exact positions of wind turbines and substations will be determined in detailed design after site-specific surveys such as geophysical and geotechnical bottom surveys have been carried out. Only then is it possible to select and design suitable positions for anchoring.

The relatively long processes for realizing offshore wind power, combined with the rapid technological development in the wind power industry, make it difficult to definitively describe the wind turbines that are intended to be erected.

Offshore wind turbines with an output of 15 MW are currently being installed, and according to industry forecasts, it is likely that wind turbines of 20+ MW will be available within the time period

the wind farm is intended to be built. Table 2 shows examples of installed capacity and annual production for wind turbines with an output of 25 and 30 MW respectively. Zephyr intends to use what is considered to be the best possible technology at the time of construction.

Table 2. Installed power depends on the number of turbines, the size of the turbines and the distance between the turbines. Zephyr intends to select the most efficient mills available on the market at the time of construction.

Power (MW)	Number of wind turbines	Total Power (MW)	Annual production (TWh)
30	82	2460	9,7
25	91	2275	9,0
20	105	2100	8,3

Zephyr has chosen to base the production analysis on a wind turbine with an installed capacity of 20 MW, see Table 2. The wind turbine has a rotor diameter of 263 meters and a total height of 300 meters and a ground clearance of around 37 meters (depending on water levels and wave heights), see Figure 2. The power selected for the production analysis (20MW) reflects a somewhat conservative expectation of future technological development. The consultation therefore concerns wind turbines with a total height of up to 330 metres.

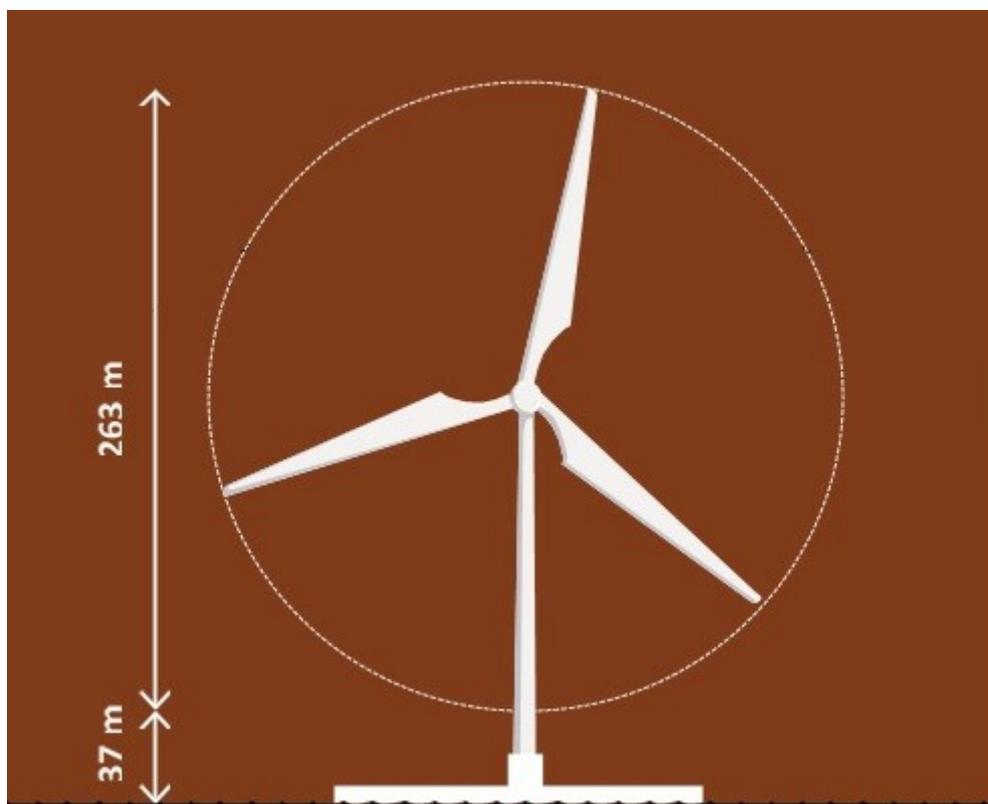


Figure 2. Wind turbines of 20 MW with a total height of 300 meters

Example layout for alternatives with 105 wind turbines of 20 MW and possible placement of platforms for inverters/transformers is shown in Figure 3. The distance between the wind turbines is about 2000 m so as not to affect each other's production and to maintain good safety. A final design may be relevant for a different number than the one represented below, but never exceed the maximum number that is consulted on (105 wind turbines).

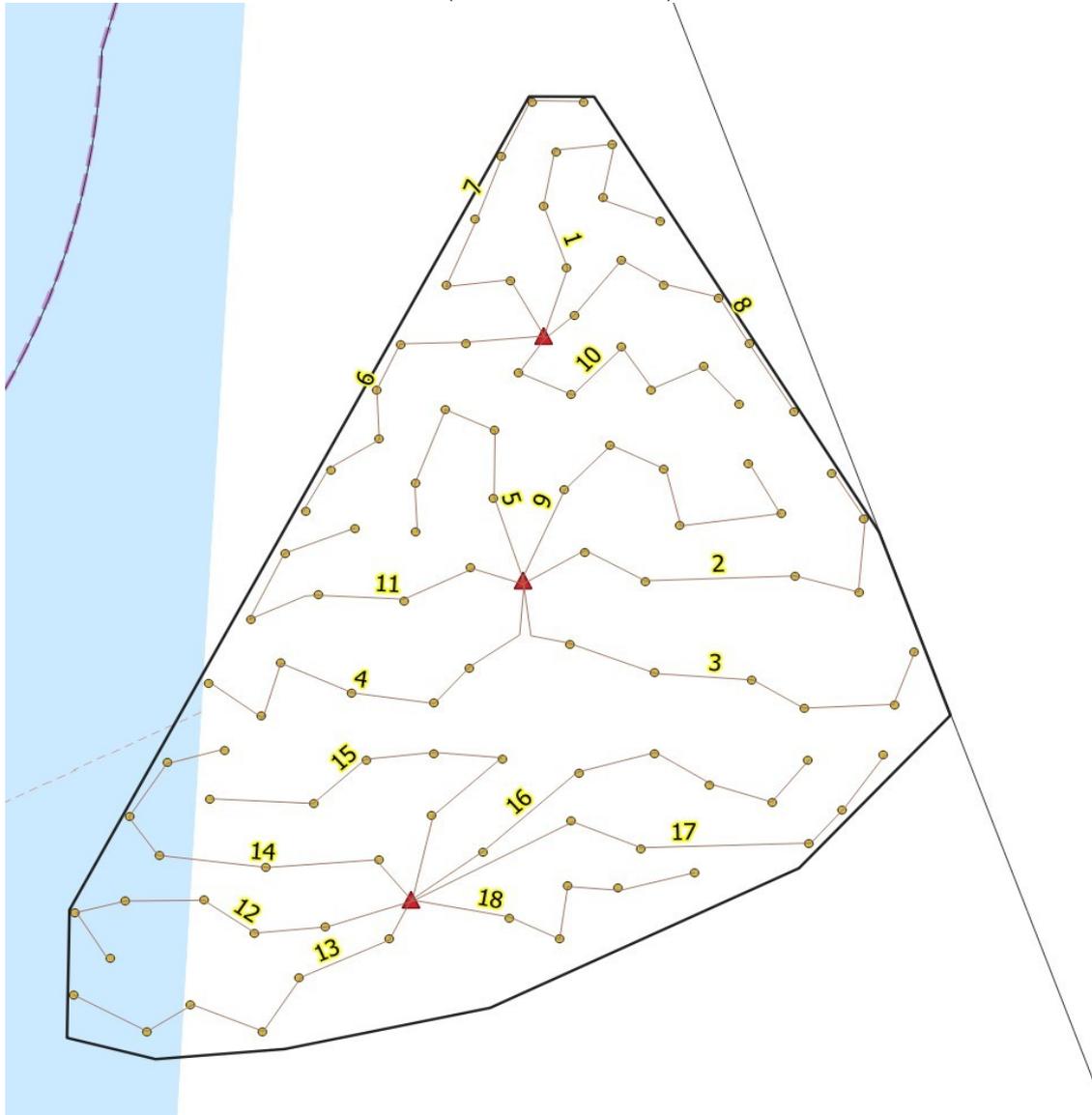


Figure 3. Example layout for alternatives with 105 wind turbines of 20 MW and possible placement of inverter/transformer platforms. Triangle shows the location of the substation and converter station. The thin lines show examples of the layout of the internal cable network.

3.2.1 Wind turbines

A wind turbine consists mainly of towers, machine houses (nacelles) and rotor/s. The tower is usually made of steel that is mounted on a foundation. Offshore wind turbines can be placed either on bottom-fixed foundations or floating foundations, usually depending on the bottom depth prevailing in the area in question. In this project, only bottom-fixed foundations are intended for the wind turbines. The rotor is usually mounted on a horizontal axis, but there are also other models and the final choice of model will be decided at a later stage. Modern wind turbines produce electricity at wind speeds from about 3 m/sec up to about 30 m/sec, depending on the design. At

higher wind speeds than this, the wind turbines are automatically shut down to protect against wear. To limit the contrast of wind turbines against the background, they are usually coloured with a greyish-white colour.

3.2.2 Foundations and anchoring

The wind turbines, substations and platforms will be placed on bottom-fixed foundations. The most common types of bottom-fixed foundations are shown in Figure 4 and are monopile foundations, gravity foundations, truss foundations and tripod foundations.

The final choice of foundation depends, for example, on water depth, bottom conditions and the weight of the structure and will be determined after geophysical and geotechnical investigations have been carried out.

Monopile

Historically, monopile is the most common type of foundation for offshore wind turbines. The foundation type has usually been used in shallower areas with water depths of about 30-40 meters but is also becoming a possible method in deeper areas in line with the constant development of technology. The concept of monopile foundation consists of two main parts; The *monopile itself* is driven into the seabed by piling or vibrating technology, after which a transition piece is installed on top of the monopile. In some cases, the transition piece may be integrated with the monopile from the start. The tower is in turn installed on the transition piece.

Gravitational foundation

Gravity foundations consist of a concrete or steel structure that is placed on the seabed and then filled with aggregate. The weight of the foundation in combination with its design is what gives the foundation its stability. Usually this foundation is used in shallow areas where water depth is about 30-40 meters, but as the technology develops, deeper areas also become possible for the method.

Tripod foundation

A tripod foundation consists of a three-legged structure that branches off from a centrally located standing cylinder, where the tower is placed. The foundation is held in place on the seabed by three fasteners, which are normally piled down. Tripod foundations can be used in both shallow and relatively deep areas and on most types of bottoms.

Truss foundations

Truss foundations consist of a steel structure with repeated braces and legs that are either held in place by anchor piles at the bottom or with so-called suction anchors as anchors at the bottom. The foundation is usually anchored with a number of pre-installed mounting points in the seabed. The foundation type is mainly used in relatively shallow areas but can also be adapted to be used in deeper areas.

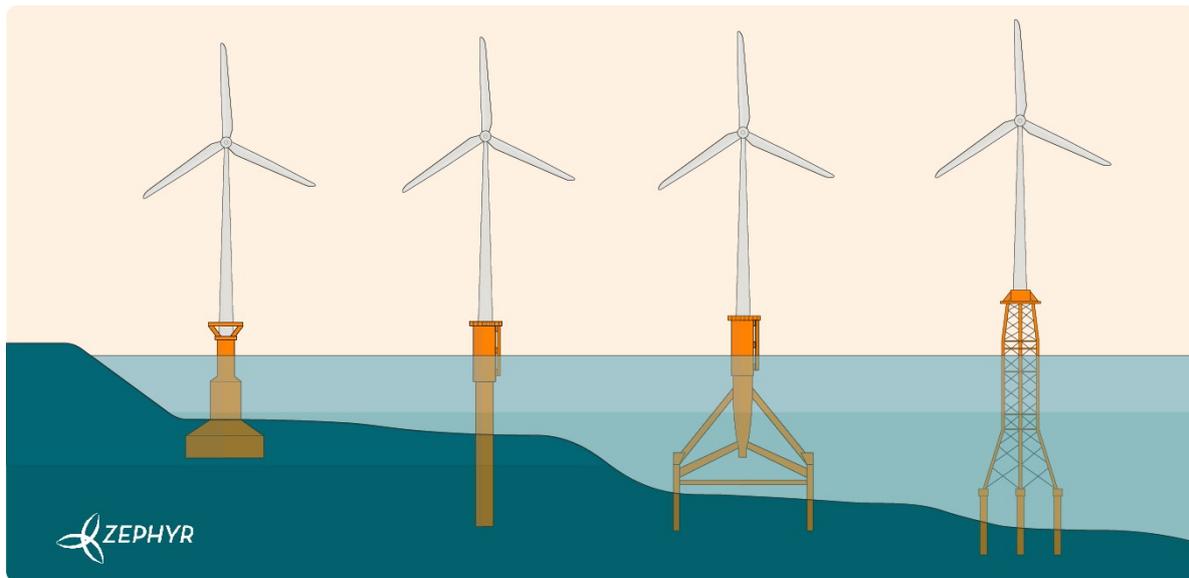


Figure 4. Different types of bottom-fixed foundations, from left: Gravity foundations, monopile foundations, tripod foundations and truss foundations.

3.2.3. Erosion protection

At points of contact between the seabed and bottom-fixed structures, erosions may occur as a result of, for example, underwater currents. To prevent this, erosion protection in the form of, for example, stone and macadam will be placed around the legs of the foundations, among other things.

3.2.4 Platforms

In addition to wind turbines, a number of platforms will be built for transformer stations and/or converter stations that receive electricity from the wind turbines. Substations contain the electrical equipment needed to transform voltage and current to a level that is optimal for transmission to shore and to the connection point. The internal cables connect to the substation, which converts the generated alternating current from the wind turbines into higher voltage (High Voltage Alternating Current, HVAC), which is then transported to shore via an export cable connected to the substation. At long distances to shore connection, it occurs that the alternating current is instead converted to high voltage direct current (HVDC) to reduce power losses when transmitting the power to land via export cable. This is called a converter station. In addition to platforms for transformer and converter stations, platforms for monitoring and communication equipment, for example, may be relevant, see further in chapter 3.2.6. A total of up to 10 foundations for platforms are planned to be built within the project area. Location will be determined during detailed design depending on what is optimal in terms of technology, cable route, environment, bottom depth and bottom conditions.

3.2.5. Internal cable network

Internal cables within the park area connect the wind turbines partly with each other and partly with one or more transformer or converter stations (see Figure 5). The internal cable network enables the generated power to be transmitted to the transformer or converter station and enables power supply to the various parts of the system. The voltage level in the wind farm's internal cable network is usually between 66-132 kV, but higher voltage levels may also be relevant for Delta North. Usually the cables are protected by being laid in the seabed. In some cases, they can

instead be installed directly on the bottom surface and are then usually covered with cable protection in the form of, for example, stone or concrete mats.



Figure 5. Overview of internal cable network, substation and export cable

3.2.6. Other platforms

In addition to the foundations that form the basis for the wind turbines as well as transformer and converter stations, it may be necessary to have additional platforms in the park area. During the operational phase, measurement, monitoring and communication equipment is placed on wind turbine platforms or transformer/converter station, not on separate platforms. To collect meteorological data during the pre-design or construction phase, separate measuring masts or buoys are used. Such measuring masts can be placed on foundations anchored to the bottom and these are significantly smaller than wind turbine foundations. An alternative to measuring masts is floating devices, which measure wind, currents and waves, for example with the help of laser technology (LIDAR).

3.2.7 Obstacle Lighting

Wind turbines can pose a danger to aviation and must therefore be marked with obstacle lighting in accordance with the Swedish Transport Agency's regulations and general advice. Wind turbines with a total height exceeding 150 metres above the water surface must be fitted with a high-intensity white flashing light on the engine house. In some wind farms, the obstacle lighting may be designed in such a way that only the outer wind turbines in the wind farm are provided with a high-intensity white flashing light and that the internal wind turbines are provided with a low-intensity red light.

The Swedish Transport Agency is working on a proposal for new regulations and general advice that cover obstacle lighting on wind turbines. The final design of the obstacle lighting will be determined at a later stage in accordance with the Swedish Transport Agency's regulations and general advice in force at the time.

3.3. Different phases of the wind farm

3.3.1. Preparatory studies

Before detailed planning and construction of the wind farm, environmental studies as well as geophysical and geotechnical studies are required. The surveys provide further information on the conditions of the area, especially with regard to marine geology and the deep sediments under the bottom layers. The survey results are significant for the final selection of positions in the area as well as the selection and design of anchoring solutions, foundation types and internal cable network.

Examples of pre-construction surveys are: sonar surveys, environmental surveys, magnetic field surveys, seismic surveys and drilling. Geotechnical surveys may be carried out at any potential site for wind turbines, substations, platforms and cable routes in order to design the wind farm in a safe and efficient manner. Information from the surveys will form the basis for dimensioning the foundations and anchoring. The investigations can also be used to ensure that the construction work can be carried out without the risk of finding any unexploded munitions.

Pre-design studies as mentioned above are covered by this consultation. Zephyr may want to conduct some investigations before permission for the wind farm has been granted. For this, a special exploration permit under KSL will be applied for separately.

3.3.2. Construction

Preparatory bottom work

In some cases, filling or levelling of the bottom may need to be carried out to achieve the right conditions for a safe installation of foundations or anchoring. Whether or not bottom preparation work is required depends on the properties and design of the seabed as well as the choice of foundation and anchor types. In the event that monopile foundations are to be installed, pre-drilling of installation holes may be relevant. Bottom preparation work may also be needed for the installation of cables.

Assembly, transport and installation

The foundations are manufactured on land and transported to the project area where they are lowered or lifted into place with the help of installation vessels and fixed. Transport and installation is normally carried out from tugboats, barges and larger specially designed vessels with equipment adapted for the purpose such as cranes and lifting devices. When the foundation is installed, other plant parts such as tower, nacelle and rotor or transformer station are installed.

Laying of cables and pipelines

Cables can either be placed directly on the bottom surface or a bit down at the bottom by ploughing, flushing or burying the cable. The method and approach depend partly on the extent to which the cable needs to be protected from, for example, anchoring or bottom trawling, and partly on the geological properties of the seabed. Larger depth differences on the seabed may need to be evened out before laying. In order to protect the cables, they are often covered with stone or concrete mats.

3.3.3 Operation

Once the wind farm has been commissioned, electricity is produced continuously, after which the power is led to a connection on land via export cables. Only at very low or very high wind speeds do the wind turbines stand still.

In order to efficiently operate the wind farm, it will be controlled and monitored from an operations center. Inspection, service and maintenance of the various parts of the plant take place continuously during the plant's operating period. The work is carried out according to established programmes or when unplanned needs arise. Subsurface plant parts, such as the internal cable network, can either be inspected with equipment from the sea surface or via remotely operated underwater vehicles.

If damage to the cable is discovered, it is repaired by lifting the cable section in question by a vessel for repair, after which it is repositioned on or in the bottom. Under certain circumstances, repairs can be carried out at the seabed without lifting the cable to the surface.

Service, maintenance and checks are normally carried out from smaller boats and vessels or helicopters or drones. If necessary, larger cranes and vessels may be needed to carry out heavier and more difficult operations.

3.3.4 Decommissioning

After the wind farm has reached the end of its time, it will be decommissioned. The wind farm is estimated to have a lifespan of about 40-45 years. During decommissioning, the various parts of the plant are dismantled and transported away for reuse or recycling. Certain plant parts on the bottom can be left behind after decommissioning in the event that they are deemed to bring more benefit to the environment to be left behind. Plant parts that can be left behind include cables, foundations, anchorages and covers on the seabed. Restoration and possible return of parts will be carried out in consultation with the responsible authorities.

4. Alternative location and design

For an activity or measure that uses an area of land or water, a location must be chosen that is suitable with regard to the fact that the purpose can be achieved with the least intrusion and inconvenience to human health and the environment. To find the location that provides the best conditions, various factors must be taken into account, such as technology, safety, environmental conditions and any impact on the surroundings. The starting point for the location investigation that forms the basis for the selection of a site for the Delta North wind farm was to identify areas where the energy demand and the climate and environmental benefits are greatest and there are few conflicting interests. Examples of important aspects that have been taken into account are shipping, known defence areas, protected areas and natural and cultural values.

The project area for Delta North does not overlap geographically with national interest claims for protected areas, nature reserves or other designated areas. The design of the project area has been adapted to the national interests for shipping and to the routes that are used in practice for passenger and cargo ships. Regarding defence interests, the project area is located about 37 kilometres from the nearest public interest for total defence. The project area is located far from

land and is considered by Zephyr to be one of the few areas in the Stockholm region that enables large-scale bottom-fixed offshore wind power with regard to the bottom depth (less than 80m).

The design of the project area will be evaluated prior to the submission of the permit application when comments from consultations and results from completed investigations are taken into account. The final choice of, for example, the type and size of wind turbines and other equipment, as well as the location of the wind turbines within the wind farm, will be decided in connection with the detailed design. These choices will be based on the results of upcoming geophysical and geotechnical surveys. Possible design options will form part of the EIA.

4.1 Zero Alternative

In the event of a zero alternative, Delta North would not be established and the area's current use and environment would not change, but would continue as before. The zero alternative would also mean that the environmental, climate and socio-economic benefits that the project has the opportunity to contribute to would not materialise. In the EIA, the zero alternative will be presented in more detail and compared with the effects of the applied activities.

5. Site description and potential environmental impact

Delta North is located in the Swedish economic zone about 55 kilometers east of Sandhamn, 90 kilometers north-northeast of Gotska Sandön and about 32 kilometers east-southeast of Svenska Högarna. Chapter 5 describes the area based on maritime spatial plans, national interests, natural and cultural environment values and other activities.

5.1 Maritime spatial planning

The maritime spatial plans aim to contribute to sustainable development and provide guidance on what is the most appropriate use of the sea. Furthermore, the maritime spatial plans provide guidance on what adaptations may be needed in order for different uses to be able to coexist with each other. The maritime spatial plans are decided by the Government, and the current maritime spatial plans were adopted in 2022. In 2023, consultations were underway on new maritime spatial plans due to the goal of enabling an additional 90 TWh of annual energy production (Havs- och vattenmyndigheten, 2022) and in January 2025, the Swedish Agency for Marine and Water Management submitted a proposal for new maritime spatial plans to the government. (Havs- och vattenmyndigheten, 2025)

Delta North is covered by area Ö204 of the maritime spatial plan for the Northern Baltic Sea and Southern Kvarken sea basin. The area has been designated as a general use area (G) and shipping (Figure 6). In the area, special consideration shall be given to high cultural environment values and total defence shall also be given priority over energy extraction in accordance with Chapter 3. Section 10 of the Environmental Code (1998:808) when the national interests are not deemed to be able to coexist.

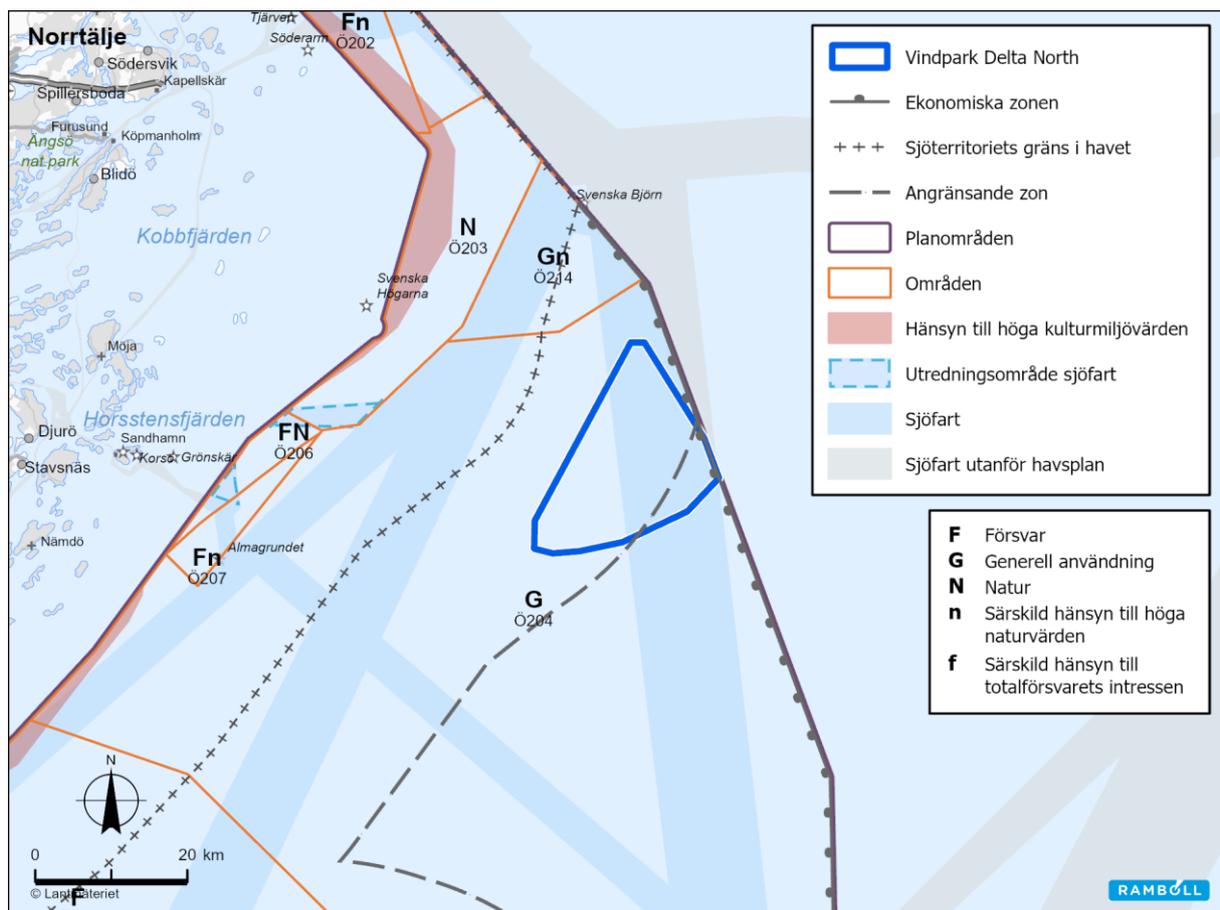


Figure 6: Current Baltic Sea Maritime Spatial Plan at the planned Delta North wind farm. The map shows the current maritime spatial plan after it was adopted on 2022-02-10. In some cases, national interests are not in accordance with the maritime spatial plan, for example, the national interest in shipping has changed since the maritime spatial plan was adopted. (HaV, 2022c)

In the proposal for amended maritime spatial plans for the Baltic Sea (ref. no. 2024–001194), Delta North is primarily covered by areas Ö216 and Ö217. The area Ö216 (EfK) is particularly singled out for energy recovery (E) where special consideration needs to be given to the interests of total defence (f) and high cultural environment values (k) (Figure 7). The cultural environment values mainly include the value area Sandhamn-Möja-Rödlöga and others, but also underwater environments along the coast that need to be taken into account in any establishments. The remaining part of the wind farm is located in area Ö216, which is designated as a general use area (G), a maritime area and an investigation area for shipping. (Havs- och vattenmyndigheten, 2024)

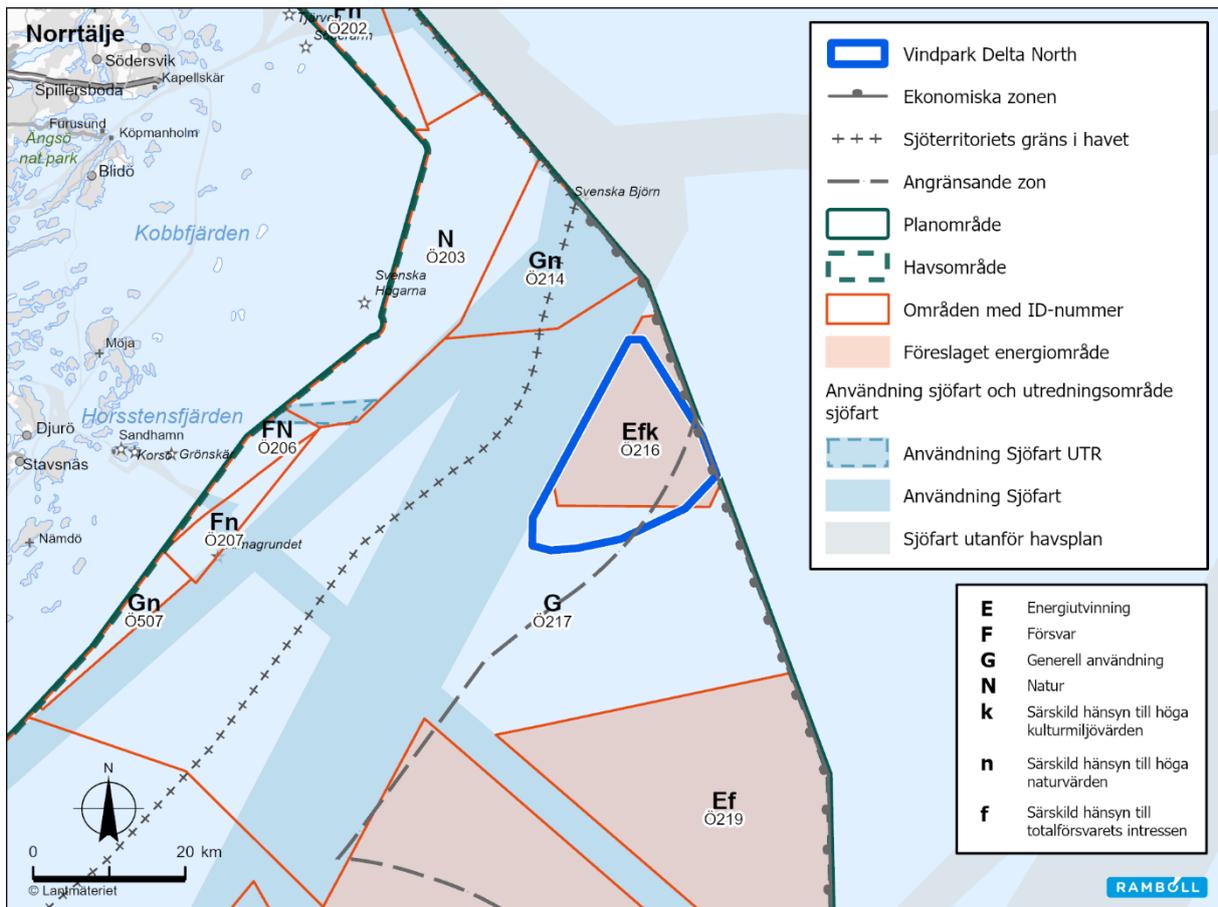


Figure 7: Maritime spatial plans, proposal to the Government 2024.

5.2 HELCOM Baltic Sea Action Plan

HELCOM, the Baltic Marine Environment Protection Commission, is a collaboration between all countries around the Baltic Sea that aims to protect the marine environment in the Baltic Sea from all types of pollution. In 2007, HELCOM developed an action plan, the Baltic Sea Action Plan. The action plan lists several threats to the Baltic Sea and measures that the countries around the Baltic Sea are committed to implementing. Among other things, it describes how pollution of hazardous substances is to be reduced, that the Baltic Sea's unique brackish water ecosystems are to be preserved, that long-term fishing is ensured and to work for safe and environmentally friendly shipping. The plan does not directly affect wind power, and the planned wind power operations are not considered to conflict with any of the parts of HELCOM's action plan if the project is carried out in such a way as to ensure, for example, that no hazardous substances are spread during construction or operation. (HELCOM, 2007)

5.3 National interests and protected areas

Below is an account of national interests and protected areas in relation to the project area as well as the potential environmental impact that the planned activities are expected to give rise to. The Delta North wind farm does not overlap with any areas of national interest, but is directly adjacent to the national interest for fairway/maritime traffic routes, see Figure 8. In the upcoming EIA, the impact will be further investigated and an assessment will be made of whether or not the planned activities may cause significant damage to national interests and protected areas.

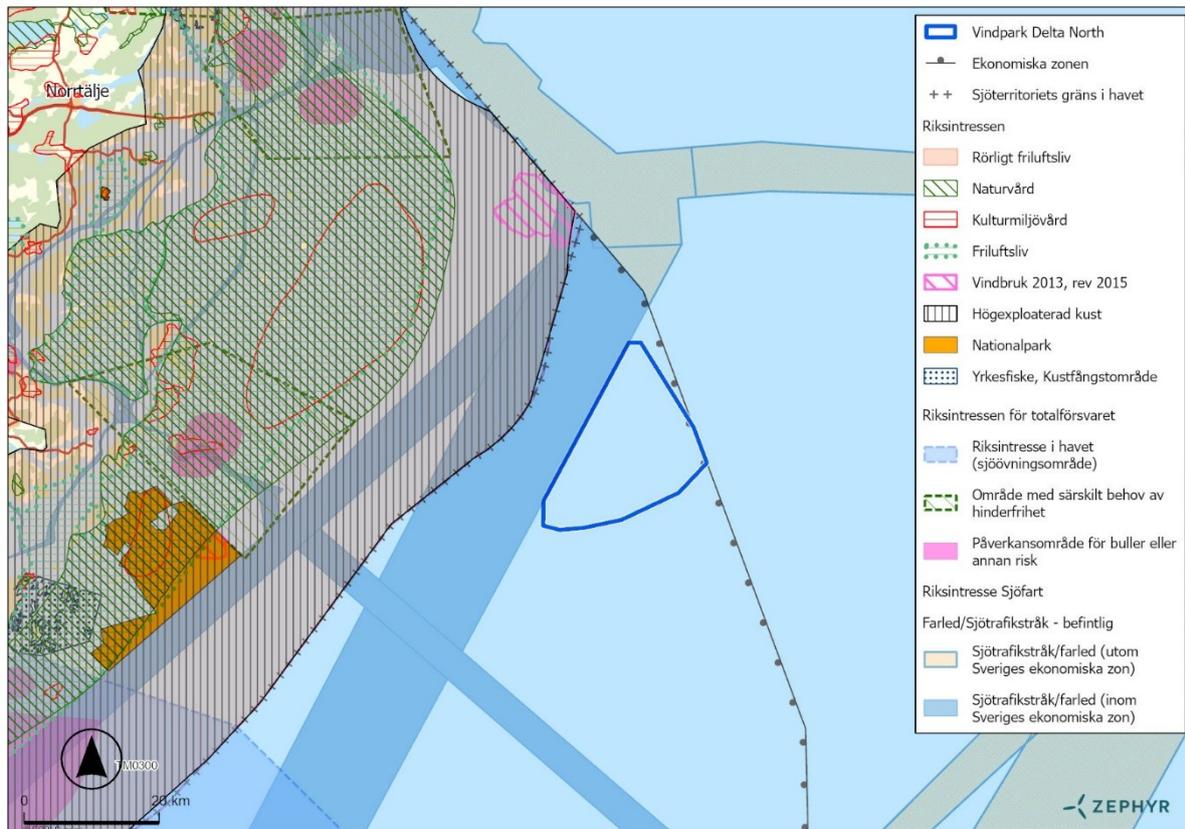


Figure 8: All national interests that are designated in the vicinity of the project area. The picture shows that the project area does not overlap with any national interest.

5.3.1 National interest – Defence

There are two openly reported areas that are of national interest for total defence in the vicinity of the project area, see Figure 9. About 37 kilometres west of the project area, there is a national interest for total defence in the form of an area with a special need for freedom from obstacles, the Korsö firing range. Northwest of the project area, at a distance of about 40 kilometres, there is another area with a special need for obstacle avoidance, Vaddö shooting range. Within these areas, there are also areas of impact for noise or other risks, which may extend beyond the geographical area designated as a national interest.

A naval exercise area, Nåttarö, is located at a distance of about 53 kilometres southwest of the project area. The area is also used as a flight training area. It is used by fighter aircraft, training aircraft, transport and special aircraft, and helicopters. The area conducts the development of military units, training, and the development of new capabilities between naval air forces and air defense. This is especially important for low-level flights and shootings. All three areas have been identified (Försvarsmakten, 2023) According to Chapter 3. Section 9, second paragraph, of the Environmental Code.

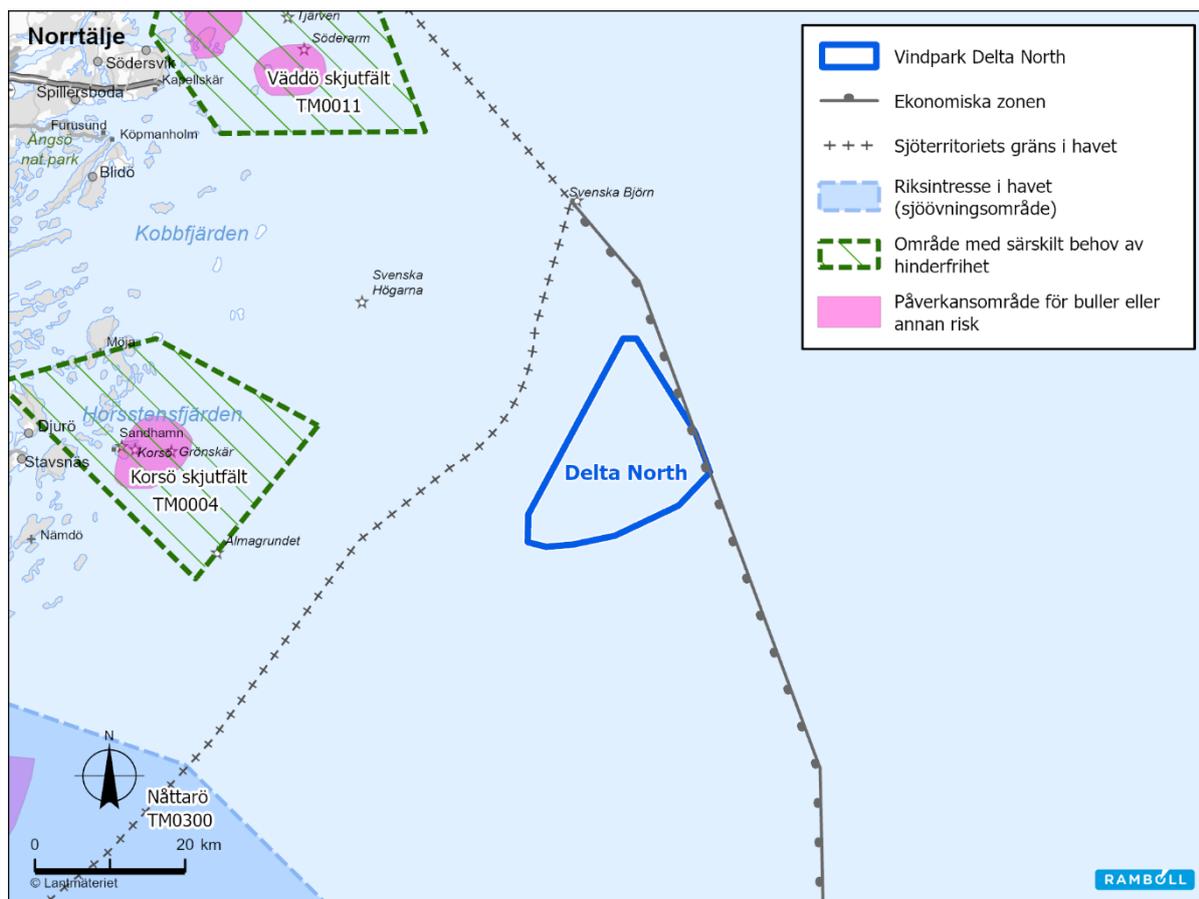


Figure 9: Map of public national interests for total defence in the area around the project area.

Potential impact

There are no public national interests for the Armed Forces that are at risk of being affected by the wind farm, but as the Armed Forces may also have confidential protected areas within or near the project area, the impact cannot be ruled out.

The Swedish Armed Forces have previously, in consultation for the Baltic Offshore Delta North project, commented on the location of the wind farm and stated that they oppose it as it is considered that the construction of the wind farm would cause significant damage to the national interest. The basis for the Armed Forces' assessment in this part is confidential with reference to national security and thus unknown to Zephyr.

Zephyr intends to seek dialogue with the Swedish Armed Forces in order to enable a coexistence between the wind farm and the defence interest. This is in light of the extensive government investments being made to strengthen and modernize the Armed Forces' surveillance capabilities, as well as the fact that other NATO countries are establishing surveillance solutions integrated in offshore wind farms in the Baltic Sea area. With an appropriately designed facility and through integrated and controlled monitoring systems within the wind farm, Zephyr assesses that an installation of this type should not only be able to coexist with defense interests, but also potentially strengthen the national defense capability while increasing local energy production significantly. (FMV, 2025)(Caliber, 2025)

The Armed Forces are part of the consultation circle and in the continued permit process.

5.3.2 National interests - Maritime and Aviation

The project area is located directly adjacent to a designated fairway of national interest for communication according to Chapter 3, Section 8 MB (Figure 10) named Fairway 30 Öland's southern foundation - Svenska Björn, which runs just outside the project area to the west. Fairway 30, which stretches from the southern foundation of Öland to Svenska Björn, is designated as a national interest as the fairway is considered important for maintaining and developing efficient and safe shipping in the region. The fairway is thus an important part of the maritime infrastructure in the Baltic Sea. For the transport system, it is the function of a facility and of the system as a whole that constitutes the value that needs to be protected within the system of national interest.

An analysis of how the planned wind farm affects maritime safety in the area has been carried out in 2022 through a so-called nautical risk analysis. A detailed description of the analysis and any impact on national interest in shipping will be described in the upcoming EIA.

There are no national interests for aviation in the vicinity of the project area. The closest airport in relation to the project area is Bromma Stockholm Airport, which is located approximately 110 kilometers west of the project area. The airport has daily air traffic, with over ten million passengers recorded in 2023. Arlanda Airport, which is Sweden's largest airport where over 20 million passengers flew in 2023, is located about 120 kilometers west of the project area. The MSA areas covered by the two airports are not affected by the project area. (Swedavia Airports, 2024)

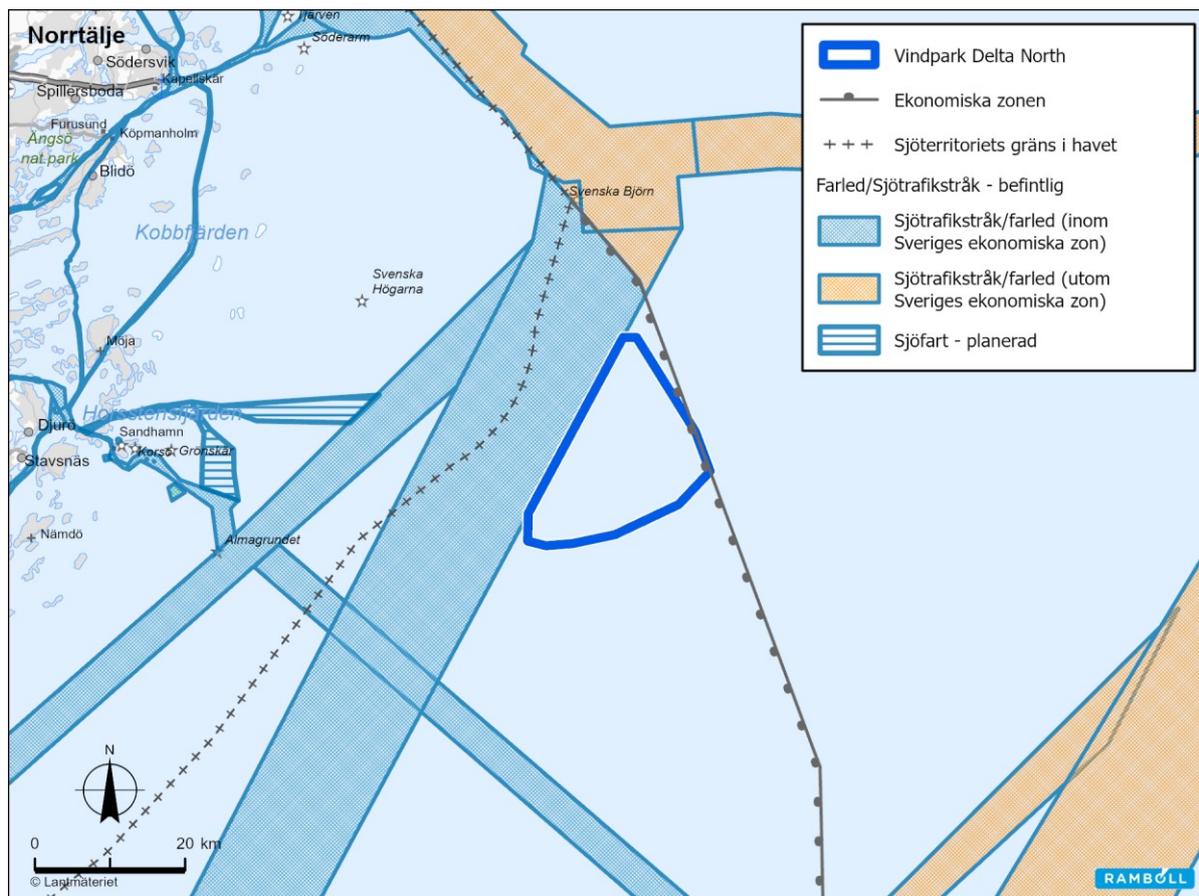


Figure 10: Map of designated national interests for communication, fairways in the area around the project area (Source: . The map shows that the project area is directly adjacent to a fairway of national interest to the west (Ship Route Öland's Southern Base – Svenska Björn). (Trafikverket, 2022)

Potential impact

As there are no national interests for aviation in the vicinity of the project area, no impact on this national interest is expected.

5.3.3 National interest - Commercial fishing

About 66 kilometres west of the project area there is a fishing area Ornön (RI YF 40 KZ) which is designated as a national interest for commercial fishing. The area is about 125 square kilometres in size and is found in the coastal area north of Nynäshamn in the archipelago around Dalarö and Nämdö, see Figure 11. The area of national interest is primarily designated as a fishing area for small-scale fishing for eel and freshwater fish species.

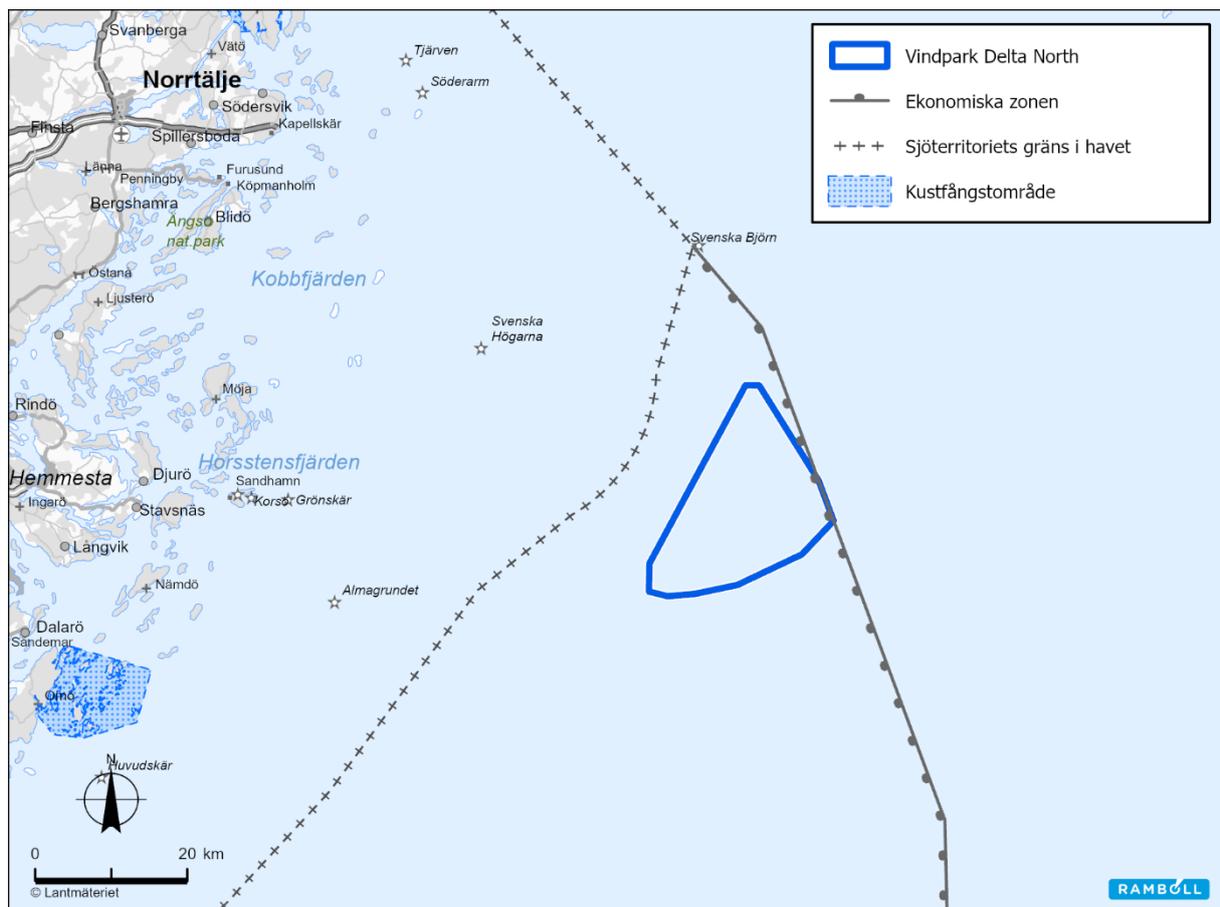


Figure 11: Map of national interest for commercial fishing in the area around the project area.

Potential impact

Since areas that are designated as national interest for commercial fishing are far outside the project area, these are not considered to be affected by the wind farm.

5.3.4 National interest - Nature Conservation and Outdoor Recreation

Nature conservation

There are no national interests for nature conservation in the project area. The closest area designated as a national interest for nature conservation is NRO01001 "Stockholm archipelago outer part" and is located as close as 27 kilometres northwest of the project area, see Figure 12. It is an extensive landscape both in terms of size and value. The archipelago landscape is covered by

around 30,000 islands and has a rich bird life and brackish water environments. The area is characterized by gneiss and granite cliffs. The outer archipelago has no actual forest, but low-growing carpets of juniper bushes or rice heaths are common. There are also heaths with bog plants. On the outermost islets, lichens grow and in the mountain cracks in the landscape you can find balders, stepmother's violet, yellow sedum, lovewort and chives. Coniferous forests can also be found in the outer archipelago, albeit windswept and shrunk. The composition of the wildlife is no different from the archipelago as a whole, where seabirds and grey seals are found. The archipelago birds around Gunnarstenarna and its archipelago have a high conservation value. Among the marine species is blue mussels, which have increased steadily in recent years, which also contributes to the increase in eiders in the area. The Stockholm archipelago is also a strong stronghold for white-tailed eagles. Birds such as eiders and ducks are generally common. There are areas where outdoor recreation has been a nuisance for some seabirds. (Naturvårdsverket, u.d.)

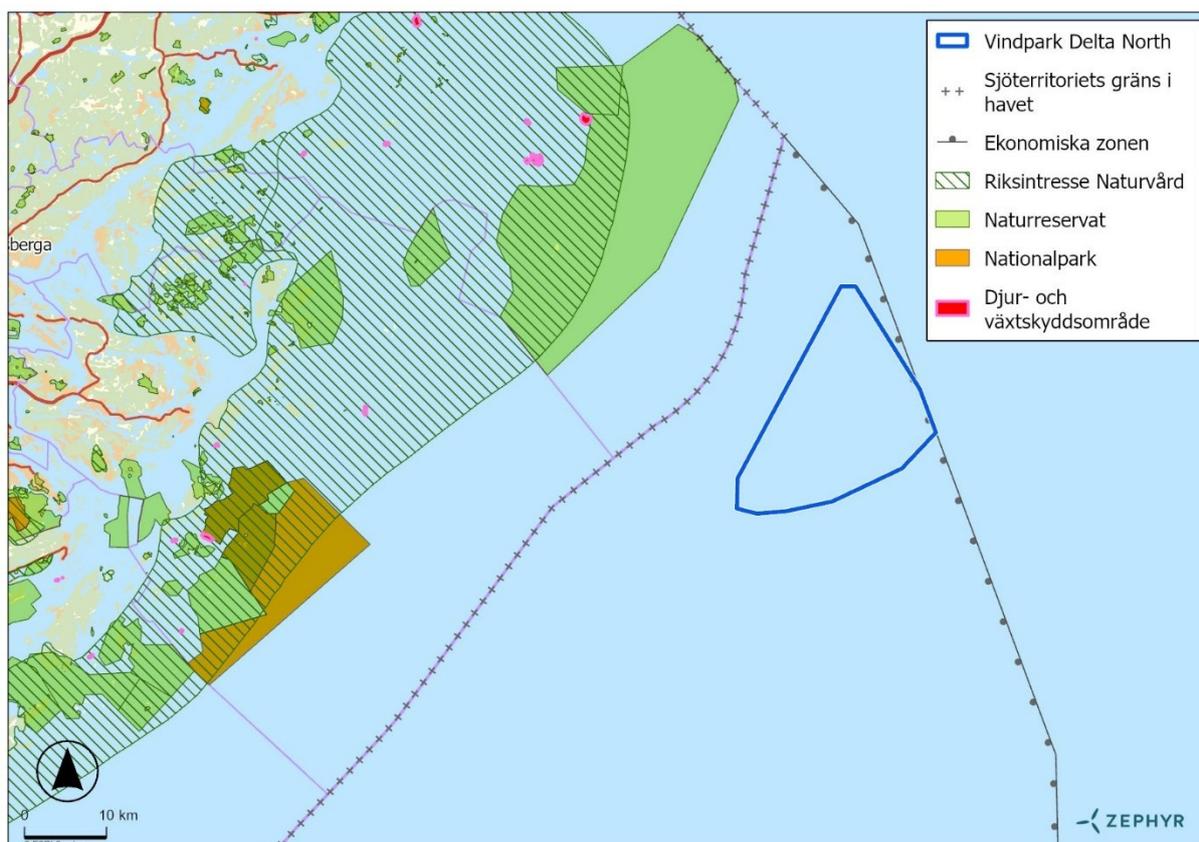


Figure 12: Map of designated areas of national interest for nature conservation. (Naturvårdsverket, 2024)

Potential environmental impact

Since the project area is located at a long distance from the nearest area of national interest, no direct impact on the national interest is considered to take place. The impact on wildlife within the area of national interest will be investigated within the framework of the EIA and reported in each section.

Outdoor Recreation

Along the coastal area there is a national interest with the designation FAB 01 Stockholm archipelago; outer part, see Figure 13. The distance from the outer boundary of the area of national interest to the project area is approximately 29 kilometres. The area of national interest covers an area of approximately 3,700 square kilometres (369,094 hectares) and is designated for

particularly good conditions for enriching experiences in natural and cultural environments. The area has interesting nature and cultural values, untouched landscape, stillness/silence and low noise levels. Among the outdoor activities that are practiced are boating, swimming, recreational fishing, canoeing, ice skating and nature and cultural experiences.

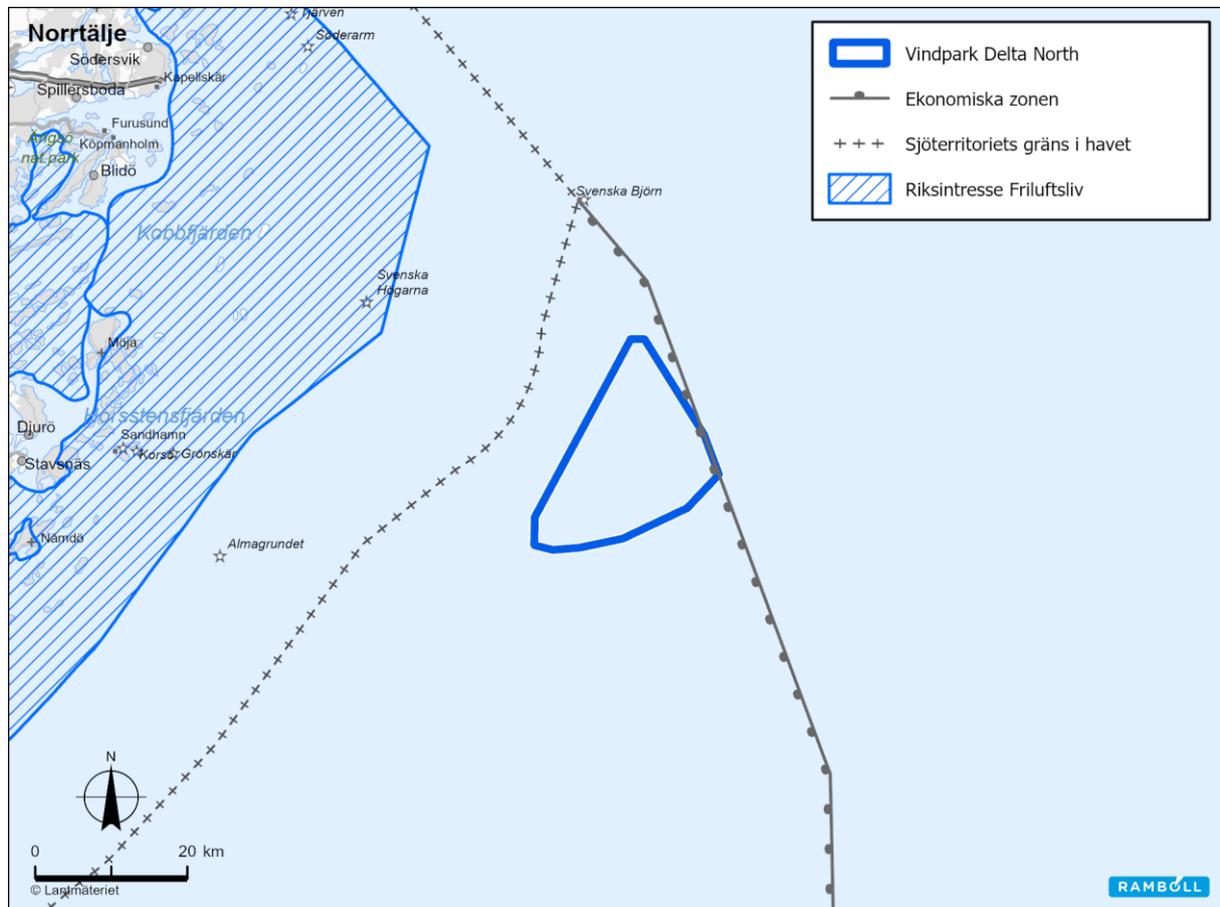


Figure 13: Map of designated areas of national interest for outdoor recreation.

Potential impact

Since the project area is located at a long distance from the nearest area of national interest, the opportunities for outdoor activities within the national interest are not considered to be affected. The values within the national interest that are linked to the experience of natural and cultural values, untouched landscape and low noise levels will be investigated and reported in the EIA.

5.3.5 National interest - Cultural Environment Conservation

National interests for cultural environment conservation are not found in the project area. National interest in cultural heritage conservation is found along the coast, where the nearest designated area is the Outer Archipelago's hunting and fishing grounds [AB 12], which are located about 30 kilometres from the project area, see Figure 14.

The hunting and fishing grounds of the outer archipelago [AB 12] are designated because the area reflects the importance of the seasonal hunting and fishing in the outer archipelago for the livelihoods of the archipelago population from the Middle Ages to the 1900s, a regional characteristic of the Stockholm and central Baltic Sea archipelagos. The area is also designated for the windswept character of the islands and skerries and the unobstructed view. The area also

served as a communication environment with Svenska Högarna's lighthouse, which was completed in 1874 and is considered the Stockholm archipelago's outpost to the east. The national interest is located 30 kilometers northwest of the project area.

Sandhamn-Grönskär [AB 610] is designated for its fairway environment, communication environment and summer entertainment environment in the outer archipelago. The archipelago community of Sandhamn is strategically located at one of the sailing routes to Stockholm and has since at least the 1700s been a pilot and customs station and the outermost community outpost towards the Baltic Sea. Around the turn of the century 1900, Sandhamn developed into a popular royal summer entertainment environment and a centre for sailing sports. The entrance to Stockholm also means that there are fortifications from different eras in the immediate area whose purpose was to defend the capital. The area is located 50 kilometres west of the project area.

Bullerön-Långviksskär [AB 607]. The area is designated as a coastal and archipelago environment that shows the livelihood and living conditions in the outer archipelago with permanent settlement based on agriculture, hunting and fishing as well as seasonal fishing. During the late 1800s and early 1900s, the environment was a popular motif for artists of this time, such as Bruno Liljefors and Axel Sjöberg. Located approximately 56 kilometers west of the project area.

Svartlöga-Rödlöga [AB 617] is designated because it is an archipelago environment with islands in Stockholm's northern archipelago that has been characterized by the archipelago's multifaceted economy, primarily based on hunting and fishing, but also on cattle husbandry and agriculture. The area is located approximately 57 kilometres west of the project area.

Möja-Bockö-Lökaön [AB 616] is an archipelago environment that reflects the living conditions of the fishermen farmers in the outer parts of Stockholm's middle archipelago and the outer archipelago. The diverse food harvest is a consequence of the special topographical conditions that have also influenced the settlement pattern since the Middle Ages. The area is located approximately 57 kilometres west of the project area.

The Harö [AB 611] area is designated for its archipelago environment with the large archipelago village of Harö and associated land that shows the archipelago population's living conditions with the composite livelihood based on agriculture, fishing and hunting and how the settlement pattern has been adapted to the conditions provided by the land uplift and agricultural reforms. The area is located approximately 58 kilometres west of the project area.

Uppeby-Nore [AB 609] The area is designated for its coastal and archipelago environment with two archipelago villages depicting the archipelago's living conditions and the combined livelihood strategies. The adaptation to the land uplift can be seen in the medieval bay village of Uppeby's current inland location and the establishment of the seaside settlement in the coastal village of Nore. The proximity to both water and farmland reflects the multi-tasking in the archipelago villages, where fishing was an important complement to agriculture. At Nore there are traces of early limestone mining that lasted until the mid-1600s, when it was outcompeted by limestone from Gotland. The area is located approximately 62 kilometres west of the project area.
(Riksantikvarieämbetet, 2023)

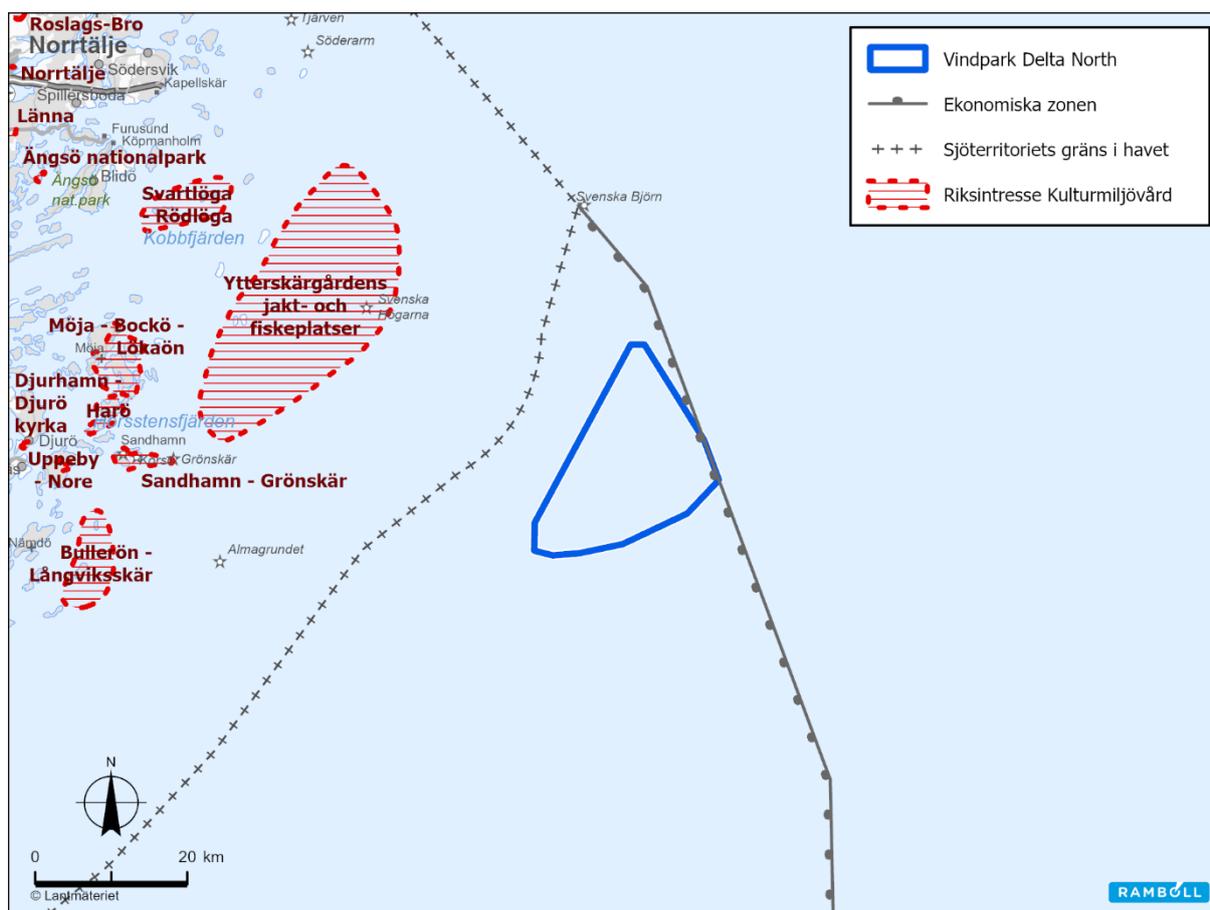


Figure 14: The map shows areas of national interest for cultural heritage conservation in relation to the project area for Delta North.

Potential environmental impact

The nearest area of national interest for cultural heritage conservation is the Outer Archipelago's hunting and fishing grounds [AB 12], which are located at a distance of about 30 kilometres from the project area. At this distance, it is mainly the visual connection between the outermost fishing villages out on the islands and the sea that can be affected.

The project's impact on all areas of national interest for the cultural environment will be investigated and reported in the EIA.

5.3.6 Protected areas and Natura 2000

In and around the relevant part of the Baltic Sea there are a number of Natura 2000 areas, see Figure 15. The distance from Delta North to the four closest is shown in Table 3.

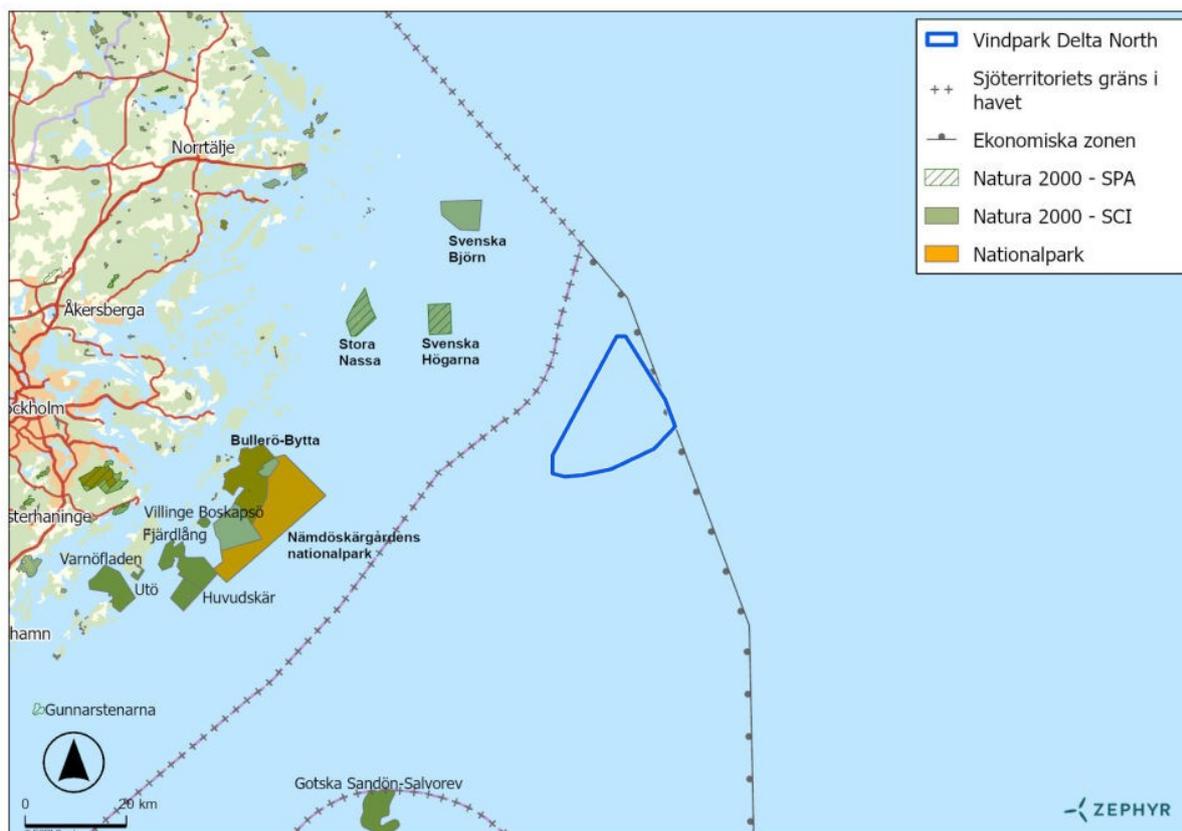


Figure 15: Map of Natura 2000 sites (Special Protection Area (SPA) and Site of Community Importance (SCI)).

Table 3: Closest Natura 2000 sites in relation to the project area.

Name	ID	Type	Distance wind farm (km)
The Swedish mounds	SE0110096	SPA/SCI	29
Swedish Bear	SE0110092	SCI	35
Stora Nassa	SE0110092	SPA/SCI	43
Bullerö-Bytta	SE0110088	SCI	54

Svenska Högarne (SE0110096)

The Natura 2000 area Svenska Högarne (SE0110096), located in Norrtälje municipality, covers 2,667.1 hectares and has been identified as both a SCI area under the Species and Habitats Directive and a SPA area under the Birds Directive. The area has been established and revised by the County Administrative Board of Stockholm with the aim of maintaining a favourable conservation status for its unique habitats and species. The area's priority habitats are skerries and small islands in the Baltic Sea (1620) and reefs (1170).

Svenska Björn (SE0110124)

The Natura 2000 area Svenska Björn (SE0110124) is located in the outermost outpost of the Norrtälje archipelago and covers 3980.2 hectares. The area is a protected SCI area according to the Species and Habitats Directive, and among other things, the large population of grey seals is

mentioned, which is the largest colony in Sweden and one of the largest in the Baltic Sea. The area includes just over 20 small islets and skerries, of which only two are larger than 100 meters in any direction.

Stora Nassa (SE0110092)

The Natura 2000 area Stora Nassa (SE0110092) is a typical area for the outer archipelago with almost 400 islands and skerries located in collections separated by flads and narrow straits. Geomorphology is characterized by strongly hilly mountain plateaus where the higher areas form islands and the lower shallow underwater environments. The dominant habitat types include lagoons (1150), reefs (1170) and small islands and skerries in the Baltic Sea (1620), which have a rich and well-developed species variety reminiscent of nearby outer archipelagos such as Gillöga and Svenska Högarna.

Bullerö-Bytta (SE0110088)The

Natura 2000 area Bullerö-Bytta (SE0110088) is a large archipelago area in the outer archipelago of Värmdö municipality. The environment is characterized by barren small islands, shallow sea areas, underwater reefs and sandbanks, which create a high variety of marine and coastal habitats. The area is a protected SCI area according to the Habitats Directive and among the priority habitats are lagoons (1150), reefs (1170) and skerries and small islands in the Baltic Sea (1620). A particularly important species in the area is grey seals, which are listed under the Species and Habitats Directive.

Nämdö Archipelago National Park

The Nämdö Archipelago National Park was established on 26 June 2025 and aims to preserve a representative and varied sea and archipelago landscape in the Baltic Sea in an essentially unchanged state. The national park covers 25,300 hectares, of which 24,460 hectares are water and 840 hectares are land. Ecological conservation values (Naturvårdsverket, 2025) includes, among other things, shallow soft bottoms, deep hard bottoms and values on land such as agricultural landscapes and forests. The national park area is located about 45 km west about the project area, and includes the existing nature reserve Långviksskär and the Natura 2000 area Bullerö-Bytta (SE0110088).

Potential environmental impact

Within the framework of the EIA, it will be investigated whether planned activities risk significantly affecting the environment in nearby N2000 areas as well as protected areas including the Nämdö Archipelago National Park. The impact factors that are preliminarily assessed to be investigated to determine the impact are sediment suspension and sedimentation, physical disturbance above the water surface and underwater noise. If the investigation indicates that the activity may have a significant impact on the environment in a Natura 2000 area, an application for a Natura 2000 permit will be submitted.

5.4 Depth and bottom conditions

Figure 16 shows the variation of the seabed measured in metres below the water surface. The project area is located in an area where the depth varies between approx. 40 and 125 meters.

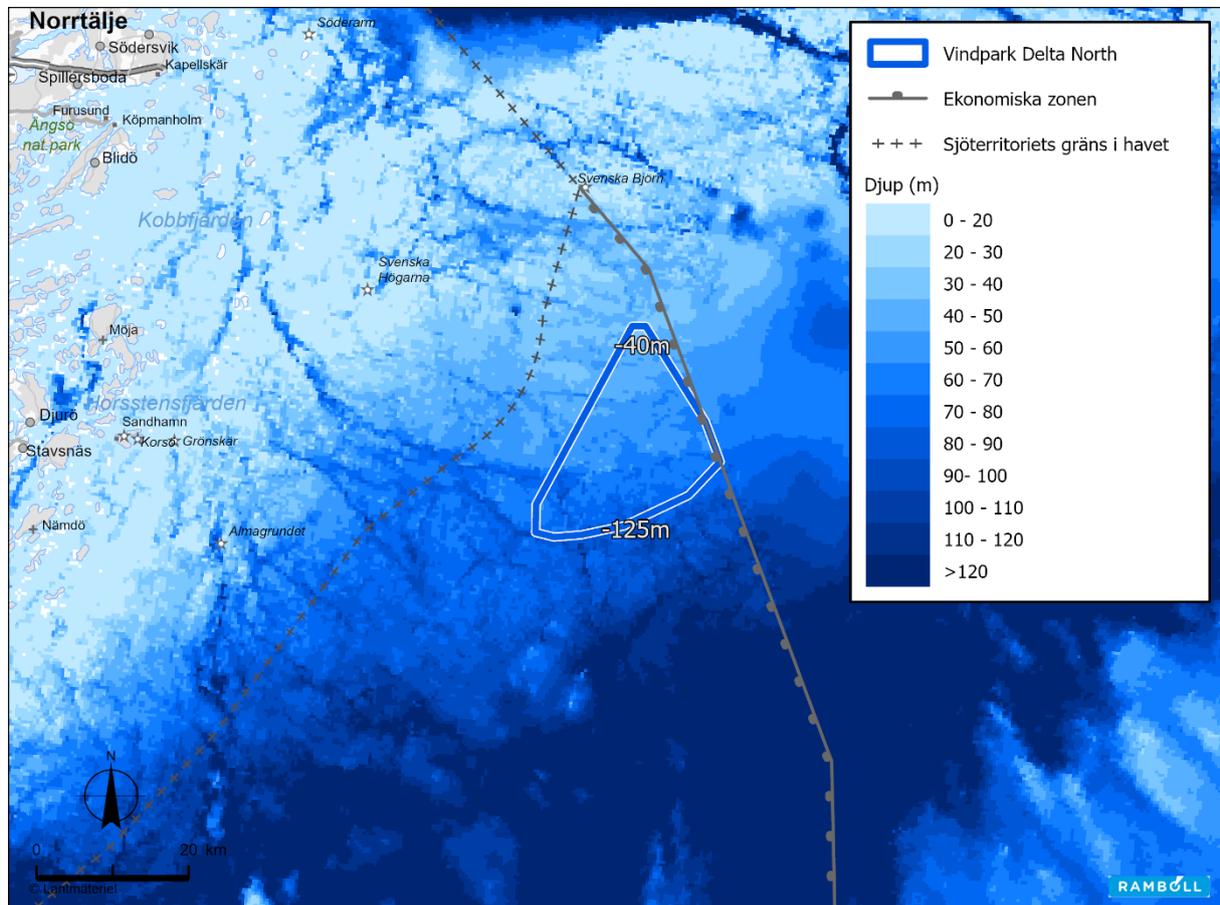


Figure 16: Depth conditions within the planned wind farm.

Based on available map data, see Figure 17, a varied surface substrate is expected in the area, with mixed substrates in the majority of the project area (probably moraine) and clay/fine-grained sediments in the south. In the deeper parts of Delta North, especially in the south where clay and more fine-grained sediments occur, it is considered possible for accumulation bottoms to occur. Sediment sampling with subsequent analysis of grain size distribution has been carried out in 2023 and 2024 and broadly confirms the above. A detailed description of the results will be presented in the upcoming EIA.

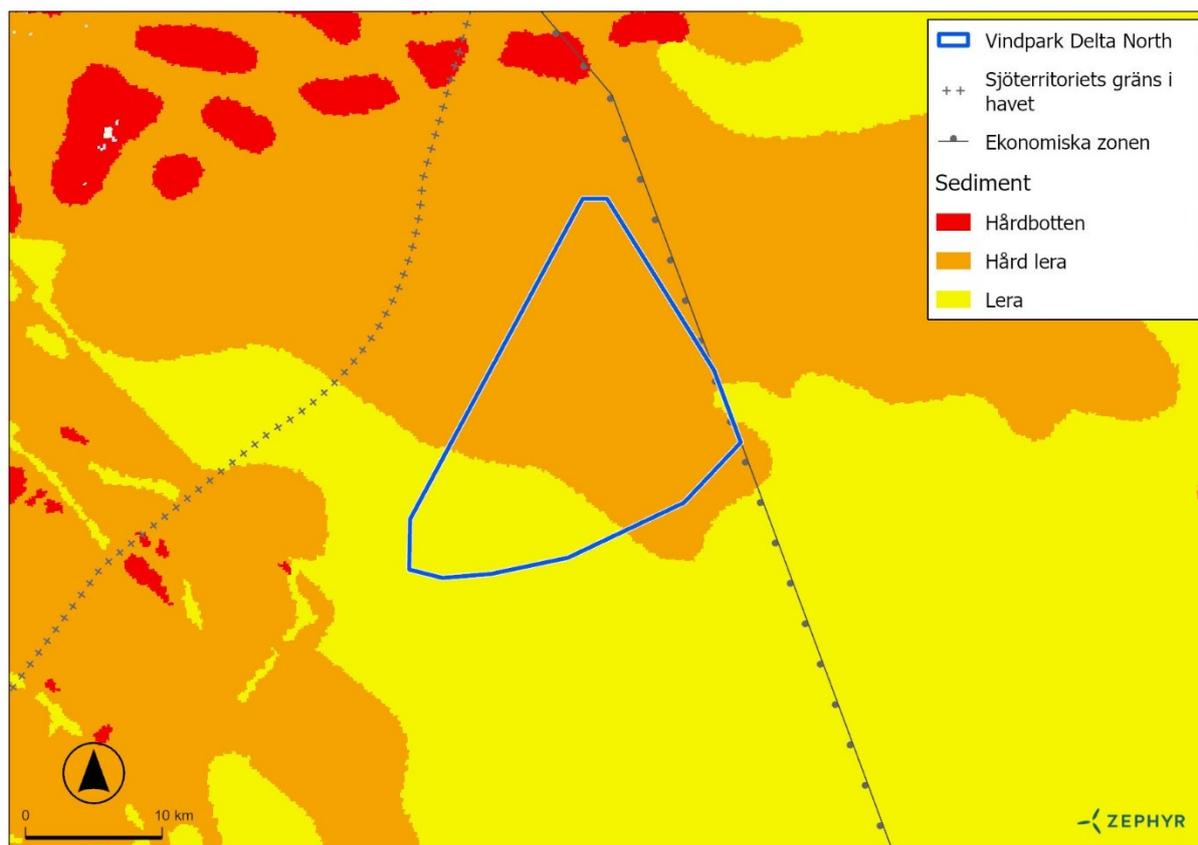


Figure 17: Surface substrate within the Delta North project area, based on HELCOM map data. (HELCOM, 2011)

Potential environmental impact

In the areas where foundations, and any erosion protection, are placed on the soft bottom, there will be a change in that the soft bottom will be replaced by hard, artificial structures. In the hard-bottomed areas, the naturally hard surfaces will be replaced by artificial surfaces.

Since the foundation, with associated erosion protection, only constitutes a very limited area, seen in the entire area, no significant impact on geology and bottom conditions is expected. The impact on geology and seabed conditions from the establishment of a wind farm within the project area will be described and investigated further in the upcoming EIA.

5.5 Hydrography

The Baltic Sea is a brackish sea with a small connection to the Atlantic Ocean via the Belt Sea. The limited water exchange affects the hydrography of the Baltic Sea and water quality with fluctuations over time. The shallow thresholds within the Baltic Sea also create variations within its basins. The sea level along the Swedish coast of the central Baltic Sea varies around +/- 40 cm in winter and slightly less in summer. However, larger deviations may occur during the year. (Andrén, 2017)

Sea currents in the Baltic Sea are low and are also considered to be so in the project area in question. Although the currents in the Baltic Sea are weak, they are important as they transport, among other things, salt and nutrients and thus affect most aspects of the ecosystem. (Andrén, 2017)

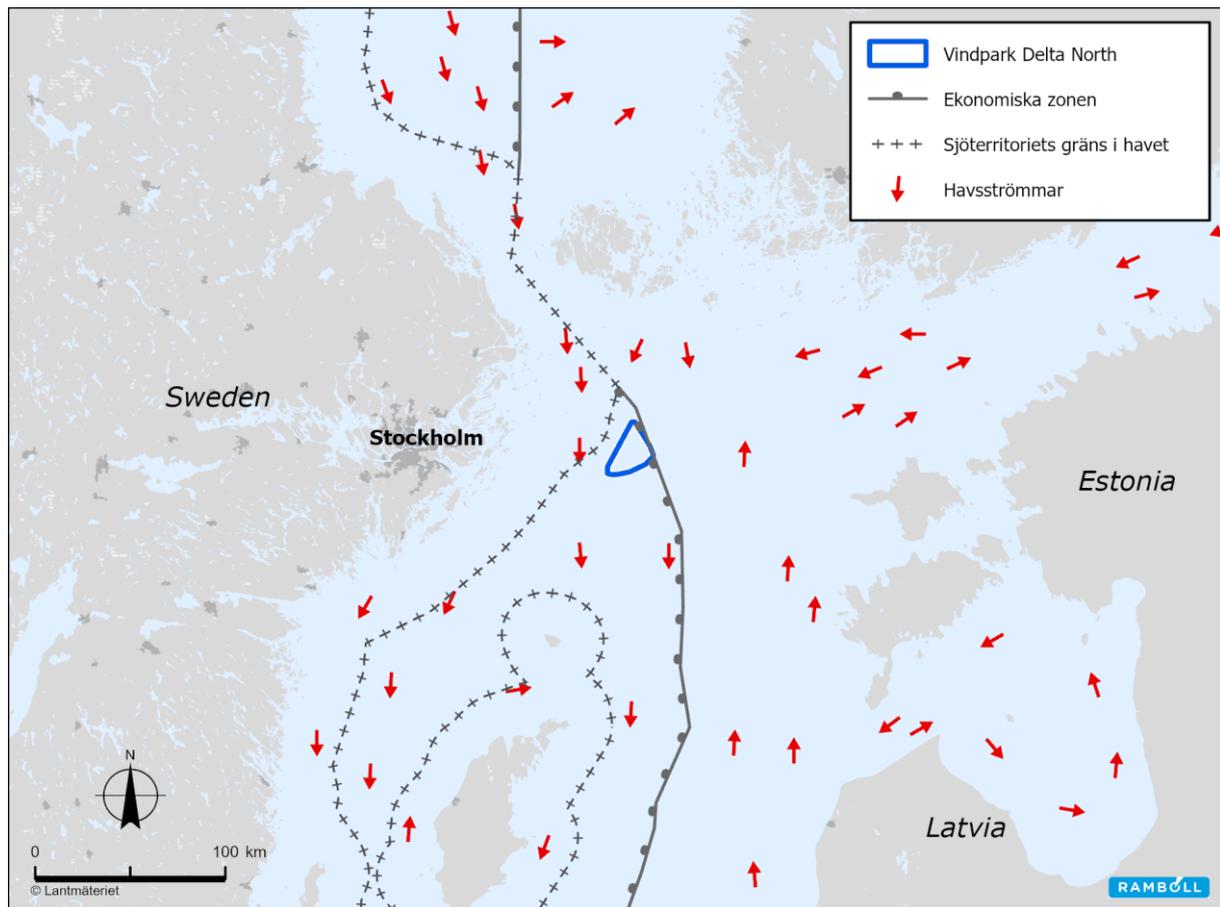


Figure 18: Map of the Baltic Sea with its average net circulation of surface water. (Andrén, 2017)

The wave height in the Baltic Sea is considerably calmer than on the Swedish west coast and in the North Sea. Significant wave height, which is the average of the highest third of waves at any given time, has a maximum monthly average of 2.3 meters during January in the southeastern Baltic Sea. The highest significant wave height recorded along the Swedish coast is 7.7 meters. (SMHI, 2010)(SMHI, 2010)

During mild winters, only the Gulf of Bothnia generally freezes, but during severe winters, almost the entire Baltic Sea can freeze. This means that the project area may freeze during severe ice winters, see (SMHI, 2021a)Figure 19: Frequency of ice cover in the Baltic Sea between 1956 – 2005, image from SMHI. 19. The coverage varies from 115 000 km² to 345 000 km² of the 422 000 km² area of the Baltic Sea. The ice-covered area is at its greatest during February - March, however, climate change contributes to the shorter periods of ice. (Thomas, o.a., 2017)

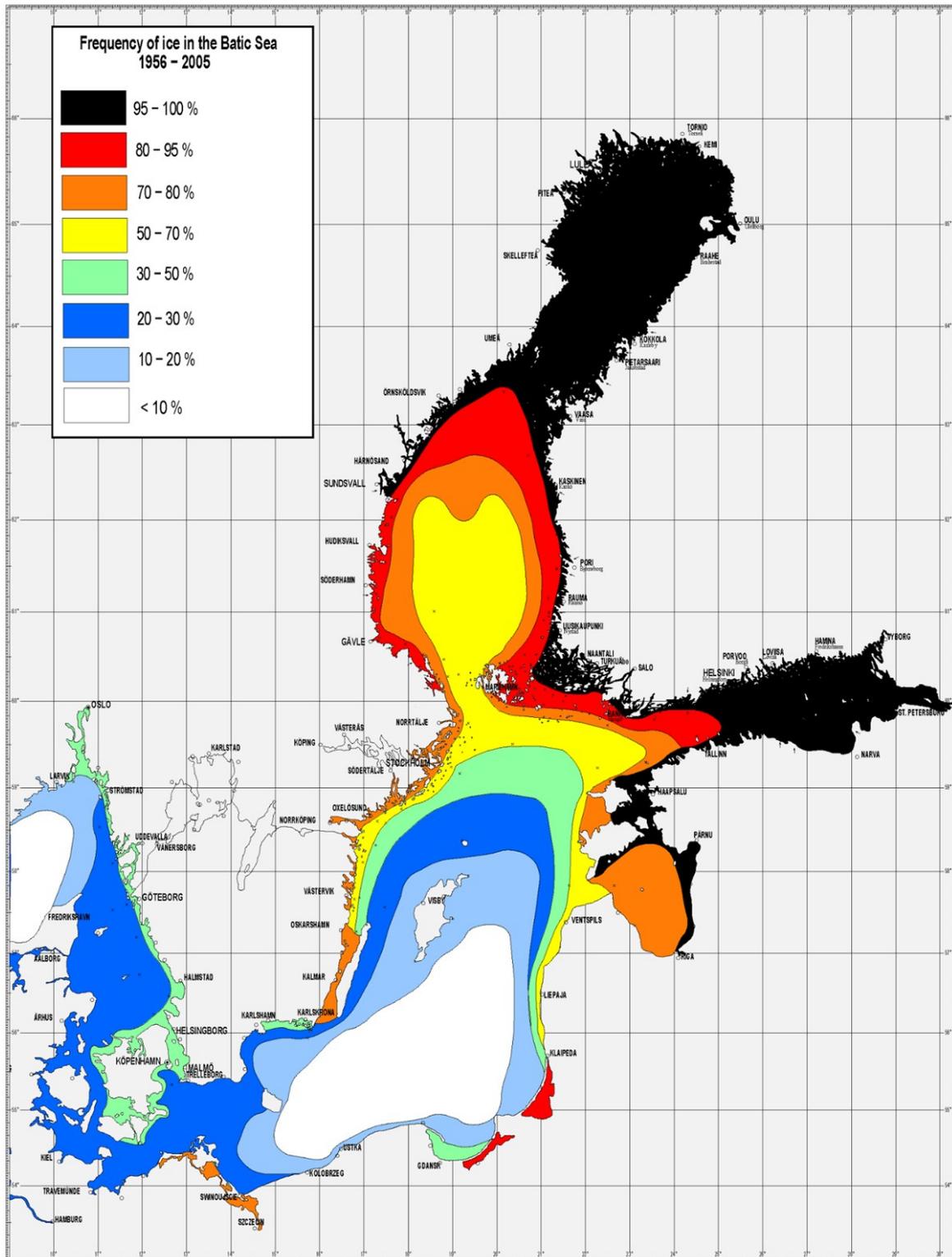


Figure 19: Frequency of ice cover in the Baltic Sea between 1956 – 2005, image from SMHI. (2021b)

In the Baltic Sea, halocline limits the vertical mixing between surface and deep water, which affects the oxygenation of the bottom water. The halocline is created by differences in salinity, mainly due to freshwater inflows and limited inflow of saltwater from the North Sea. This restricts the oxygen supply to the deep water, which can lead to oxygen depletion and the formation of toxic hydrogen sulphide. Anaerobic (oxygen-free) conditions release phosphate and silicate from the sediments,

which contributes to algal blooms and the production of toxins that can negatively affect animals and humans. Eutrophication and changes in freshwater supply also contribute to oxygen-free bottoms. (Schneider, o.a., 2017) (Andersson L. S., 2014)

Within the Baltic Proper, there are several deep basins, of which the Gotland Basin is one of the most prominent. The depth of these basins often exceeds 100 meters and can reach depths of over 450 meters (Landsort Depth). Thresholds found in the Baltic Sea, such as those at Bornholm and in the Sound, limit the exchange of deep water and thus affect how oxygen-rich water is dispersed. The project area is not within any of these deep basins or thresholds, see Figure 20.

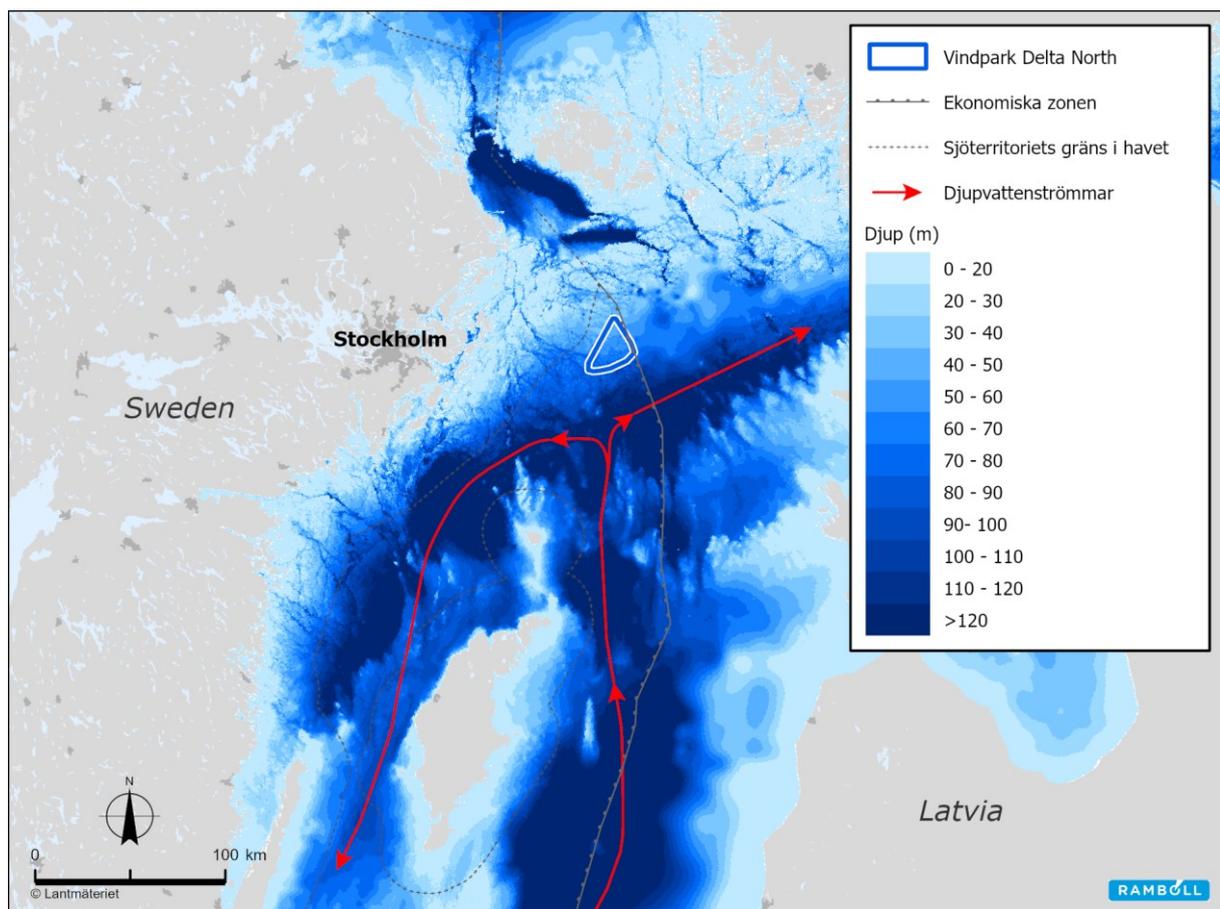


Figure 20: Pathways and direction of inflows of salt water. (SMHI, 2020)

(SMHI, 2022). Oxygen concentrations at the seabed in the project area are considered good in the shallower parts, but oxygen-poor and oxygen-free water occurs in the deeper parts of the project area. CTD profiling of the water column has been performed, which also examined the oxygen content of the water. The results from this field survey are presented in the following environmental impact assessment.

Potential environmental impact

The installation of larger physical structures, such as wind turbines, can affect the hydrography in its vicinity by altering currents, waves, and mixing patterns. It is especially in more enclosed water areas and narrow straits where this impact is significant. When foundations are placed in more open water, as is the case for this project, only a minor degree of impact is expected, located around the foundations' immediate area, so-called wake effect. The impact on hydrography from the establishment of a wind farm within the project area will be described and investigated further

in the upcoming environmental impact assessment. (Hammar, Andersson, & Rosenberg, 2008)5.6
Natural environment

5.6.1 Benthic community

The benthic environment is affected by several factors, most notably oxygen content, salinity, temperature and light. In the Baltic Sea, the species diversity of benthic fauna is generally low due to low salinity. The availability of oxygen is crucial for the presence of benthic fauna, and large parts of the Baltic Sea's deep bottoms are hypoxic or anoxic. These areas of oxygen deprivation have increased in size since the late 1990s.

Benthic fauna

An initial desk study regarding the occurrence of benthic fauna in the project area was carried out by Medins Havs och Vattenkonsulter AB during 2023–2024. Existing data were collected from an ICES report, eleven sampling stations in SHARKweb (see Figure 21) and review studies. A total of 19 species of mainly crustaceans, mollusks and bristleworms were identified as occurring in the vicinity of the project area. None of these species are endangered according to the Swedish Red List. Due to the regularly low oxygen levels that prevail in the wind farm, especially in the southern part, species that live there must be able to recolonize quickly or migrate between areas.

The sampling stations from SHARKweb, which are reported in Figure 21, are located at a depth of 40–70 meters and broadly reflect the environment found within Delta North in terms of bottom substrate, oxygen conditions and depth. The most frequent species observed in 2010–2021 were the Lift Scaleworm (*Bylgides sarsi*), Sausage Worm (*Halicryptus spinulosus*), Baltic Mussel (*Macoma balthica*), White Pearls (*Monoporeia affinis*), Blue Mussel (*Mytilus edulis*), Pine crayfish *Pontoporeia femorata*, *Pygospio elegans dorsal head worm* and *Saduria entomon*. Benthic fauna sampling has been carried out in the project area in 2023 and 2024 and indicates a similar benthic fauna community. Detailed results from this field investigation will be presented in the upcoming environmental impact assessment.

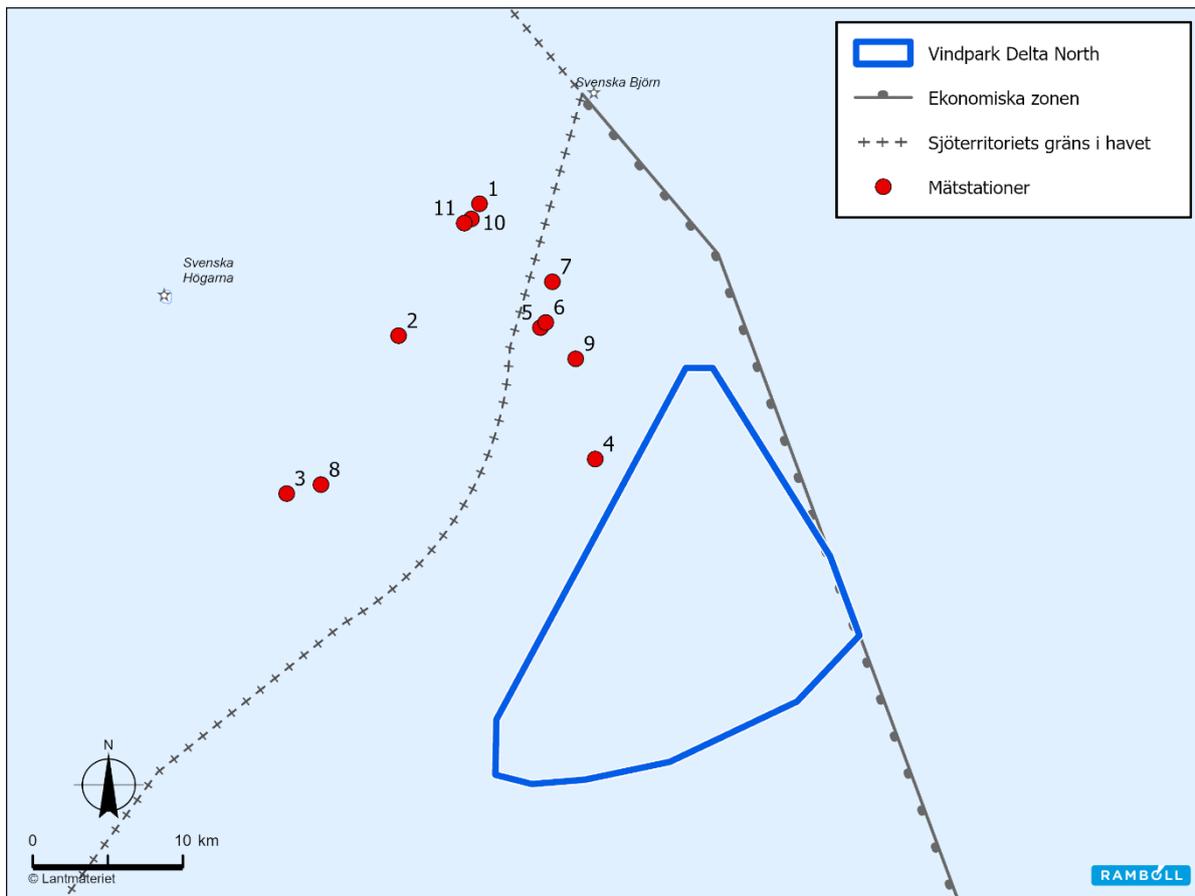


Figure 21: Map of SHARKweb stations for benthic fauna sampling together with the location of the project area for Delta North. (SMHI, 2023)

Benthic flora

There are a number of marine plants in the Baltic Sea, but species diversity decreases in the northern direction as salinity decreases. Light limits the ability of flora to colonize specific sites as light is vital for its photosynthesis. The photic zone in the Baltic Sea, i.e. where the light reaches, generally extends down to a depth of 20–25 metres (Snoeijs-Leijonmalm, et al., 2017). As the depth within the project area exceeds 25 meters, the area is at its shallowest about 40 meters, no bottom flora is considered to occur in the area.

Potential environmental impact

During the installation of foundations, and its possible erosion protection, the fauna that is in these places will be directly affected when these areas are used. The surfaces occupied by foundations and erosion protection will replace previous soft and hard bottom habitats with artificial hard bottoms. Fauna that is sessile to the areas that are used can be expected to be removed during the construction phase when these organisms do not have the opportunity to move.

During the construction phase, turbidity can occur when sediment is stirred up into the water mass. The levels of turbidity are affected by the sediment composition where the turbidity activities take place and are greatly reduced if the sediment is largely composed of coarser materials, such as sand, gravel and stone. Mobile fauna is less affected than sessile fauna and flora as these can get away from the site while turbidity is in progress or dig up from thinner (<10 cm) deposits of sediment. If the turbidity only lasts for a short period of time, no significant negative impact on the benthic community is expected. (Hammar, Magnusson, Rosenberg, & Granmo, 2009)

The establishment of the wind farm's many structures enables the recolonization of fauna that previously used the existing hard surfaces in the project area, and new flora is also possible. Since these structures are not only horizontal but also vertical, larger areas of hard material will exist after installation than before. These introduced structures, via these hard surfaces, can be expected to contribute with a so-called reef effect, which can contribute to positive effects for the area's benthic communities during the project's operational phase. (Karlsson, et al., 2022; Wilhelmsson & Langhamer, 2014)

The electromagnetic fields that may arise from the wind farm's cable network during the operation phase are expected to be weak with levels down at background levels a few meters from the cables. The impact of electromagnetic fields on benthic fauna has not been assessed to be of significance at the population level. (Bergström, et al., 2022)

The impact on benthic communities, with associated fauna and flora, from preparatory studies and the establishment of a wind farm within the project area will be described and investigated further in the upcoming environmental impact assessment.

5.6.2 Marine mammals

The marine mammals that occur regularly in the Baltic Sea are porpoises, ringed seals, harbor seals and grey seals.

Porpoises

The porpoise is protected under the Species Protection Ordinance (2007:845), it is also covered by the EU's Species and Habitats Directive Annexes II and IV (92/43 EEC). Species in the EU's Species and Habitats Directive are considered worthy of protection from a European perspective. These are divided into three categories, species in Annex II are species whose habitat must be protected, for which special areas of conservation must be set aside and included in the Natura 2000 network. Species in Annex IV require strict protection and species in Annex V may need special management measures. Porpoises occur along the entire Swedish coast up to Åland. However, it is divided into three distinct populations: the North Sea population, the Belt population and the Baltic Sea population. The Baltic Sea population, which may occur in the sea area in question, currently consists of about 500 individuals and is classified as critically endangered (CR) (Swedish Agency for Marine and Water Management 2021). However, Baltic Sea porpoises are considered to have a low probability of occurrence around the project area throughout the year. (SLU Artdatabanken, 2023)(SAMBAH, 2017)

Ringed seals, Harbor seals and Grey seals

The Baltic Sea population of ringed seals is covered by the EU Species and Habitats Directive, Annexes II and V. The range of ringed seals is concentrated in the Bay of Bothnia, parts of the Bothnian Sea, the Gulf of Finland and the Gulf of Riga.

Harbor seals are covered by the EU Species and Habitats Directive, Annexes II and V. Harbor seals have their main distribution along the west coast with a smaller isolated population in Kalmar Sound. The population in Kalmarsund is genetically isolated from the rest of the Swedish harbor seal population and is classified as vulnerable (VU) (SLU Artdatabanken, 2020) .

The grey seal is common in the southern Baltic Sea and is known for hiking long distances. It is considered viable according to the Swedish Red List. (SLU Artdatabanken, 2022c)(SLU Artdatabanken, 2020)The species is designated as a protected species within the Natura 2000 areas Svenska Högarna, Svenska Björn and Stora Nassa. The population of the Baltic Sea has decreased from about 100,000 individuals in 1906 to about 55,000 – 73,000 individuals Today, mainly due to hunting and environmental toxins.(SLU Artdatabanken, 2022c)

Modelling has been carried out that shows the relative presence of grey seals in the project area's surroundings, while harbor seals and ringed seals do not occur.(Havs och vattenmyndigheten, 2018)

Potential environmental impact

The marine mammals that are expected to occur within and near the project area are porpoises, grey seals, ringed seals and harbor seals. The species are sensitive to noise, but the degree of this impact depends on the intensity and frequency of the noise, which can be influenced by the choice of technology and construction methodology. The propagation of noise from a specific source is influenced by several parameters, such as the nature of the sound, water depth, bottom substrate, salinity and bathymetry. At high noise levels, marine mammals can be affected by permanent hearing loss, temporary hearing loss, or behavioral impairment. The greatest impact of noise is expected during the construction phase from installation work and work vessels, but some noise is also present during preparatory studies (Andersson M. H., 2011)as well as the operational phase of the wind turbines and the vessels used in the maintenance of the wind farm. .(Bergström, et al., 2012)

The impact on marine mammals from the establishment of a wind farm within the project area will be described and investigated further in the upcoming environmental impact assessment.

5.6.3 Fish

The Baltic Sea is home to a mixture of both marine and freshwater fish species. The distribution areas of the different fish species depend mainly on the salinity of the water, but also on oxygen content, availability of food and temperature, this applies to both marine species and brackish water and freshwater species in the Baltic Sea(HELCOM, 2020) (Snoeijs-Leijonmalm, Schubert, & Radziejewska, 2017).

To investigate species occurrence, spawning grounds and potential hiking trails that occur in the area of the planned wind farm, Medins Havs och Vattenkonsulter AB has conducted a desktop study where they collected information from the following sources:

- The Swedish Species Observation System (SLU)
- The Spawning Time Portal / Spawning Period Portal (HaV),
- Coastal Test Fishery Database (KUL)
- Data from SLU on the Swedish commercial fishery in ICES rectangles 47G9 and 47H0
- Data from the EU on all countries' commercial fisheries carried out within ICES rectangles 47G9 and 47H0

A total of 18 species were estimated to be present in or in close proximity to the project area. The most frequent and commercially important species in the area are herring (*Clupea harengus*) and sprat (*Sprattus sprattus*). Two endangered species are considered to be present in the project area, cod (*Gadus morhua*) and eel (*Anguilla anguilla*). The species are assessed as vulnerable (VU) and critically endangered (CR) respectively according to the Swedish Red List 2020. All of the above-

mentioned species will be treated further in the upcoming environmental impact assessment due to their ecological and economic values.

Potential environmental impact

(Andersson M. H., 2011)(Thomsen, Lüdemann, Kafemann, & Piper, 2006) Fish can be affected by noise and fish have two organs that can perceive sound, the inner ear and the lateral line, and the impact differs from species to species. The influence of noise depends on the intensity and frequency of the noise, which can be influenced by the choice of technology and construction methodology, and its propagation is influenced by several parameters, such as the nature of the sound, water depth, bottom substrate, salinity and bathymetry. Herringfish are usually regarded as so-called hearing specialists as they have a connection between the swim bladder and the inner ear that makes them more sensitive to certain characteristics of noise. At high levels of noise, fish can be at risk of physical harm, but it can also lead to behavioural impact, which means that fish flee the area while the noisy activities are going on. The greatest impact of noise is expected during the construction phase from installation work and work vessels, but some noise also occurs during preparatory studies and during the operational phase from the wind turbines and the vessels used in the maintenance of the wind farm.

The turbidity that can occur during the construction phase can cause avoidance behaviour in fish but also risks affecting eggs and larvae. At high levels of sediment in the water column, even adult fish can be harmed. (Westerberg, Rännbäck, & Frimansson, 1996)(Karlsson, Kraufvelin, & Östman, 2020)

During the operational phase of the wind farm, fish, such as eel and salmon, can, are affected by the electromagnetic fields formed around the wind farm's cable network. However, these electromagnetic fields are expected to be weak, with levels down at background levels a few metres from the cables and the effects of similar cables not having posed significant obstacles in hiking, for example. (Öhman, 2023; Farr, Ruttenberg, Walter, Wang, & White, 2021)

The effect of the wind farm's many added structures can be expected to contribute during the operational phase with a changed and new habitat, so-called reef effect, which can contribute positively and benefit the area's fish community during the project's operational phase.(Wilhelmsson & Langhamer, 2014; Farr, Ruttenberg, Walter, Wang, & White, 2021)

The impact on fish from the establishment of a wind farm within the project area will be described and investigated further in the upcoming environmental impact assessment.

5.6.4 Birds

The Baltic Sea is home to many important habitats for birds for resting, foraging, nesting and wintering. Some species stay in the Baltic Sea throughout the year, while others migrate to or from the Baltic Sea during the winter. A large part of the Swedish bird fauna consists of migratory birds and these need to carry out their journeys as quickly, safely and efficiently as possible. Therefore, many species follow land or coastlines as far as possible. During spring and autumn, numerous seabirds pass along the Swedish east coast on their way to and from the wintering areas. Many migratory small birds pass through the Baltic Sea both during the day and at night when the weather conditions are favourable.

A worldwide network of important areas for birds has been identified by national bird protection organisations. The designated areas are called IBAs (Important Bird and Biodiversity Areas) and are administered by BirdLife International. The most immediate IBA areas to the project area are the Stockholm Archipelago in the west, the two skerries Lågskär and Nyhamn in the north, and the Föglö Southern Archipelago just east of the latter two (Figure 22).

The IBA area Stockholm Archipelago consists of the outer archipelago from Svenska Högarna in the north to Huvudskär in the south. The area is designated as a nesting area for ducks (eider, black-tailed duck, great merganser, lesser jay), waders (roseate, redshank), gulls (herring gull, black-throated gull), terns (common tern, silver tern) and other seabirds (coastal guillemot, guillemot, sand guillemot, common mullet). The most important parts for birds are the outer archipelagos of Svenska Högarna, Gillöga and Stora and Lilla Nassa, all of which are located in the northern part of the area. (BirdLife International, 2024)

Svenska Högarna (29 kilometres from the project area) and Stora Nassa (43 kilometres from the project area) are protected as Natura 2000 areas (SPA, SCI), see section 5.3.6. Svenska Högarna is the Stockholm archipelago's outpost towards the Baltic Sea and consists of about 40 islands and skerries. The Arctic tern is a designated bird species for the Natura 2000 protection. The Swedish Högarna also houses colonies of sand eel guillemots, guillemots and black gulls as well as a larger colony of black-backed gulls. Nesting populations of eiders and blackbirds also occur. Stora Nassa is an outer archipelago with almost 400 islands and skerries with white-tailed eagles and Arctic terns as designated bird species. (Länsstyrelsen Stockholms län, 2016a)(Länsstyrelsen Stockholms län, 2016b)

North of the project area and south of Åland are the two smaller IBA areas Lågskär and Nyhamn and east of these, the slightly larger Föglö southern archipelago, see Figure 22. All are designated as IBA areas for nesting Eurasian Mullet and resting Common Eider. Lågskär and Nyhamn are also designated for overwintering alder traitors.(BirdLife International, 2024)

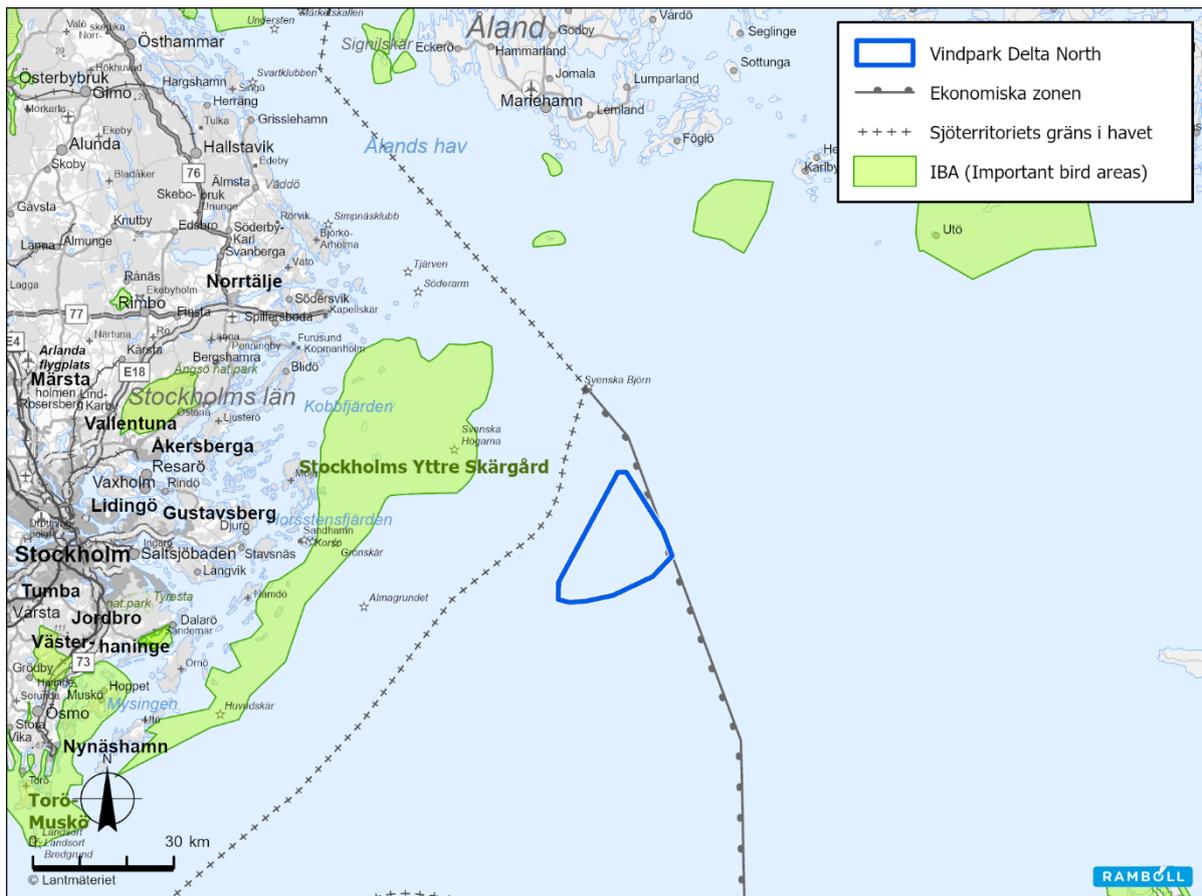


Figure 22: Areas of special importance for birds, IBA areas. (BirdLife International, 2024)

Potential environmental impact

The impact on birds as a result of wind power is usually described in terms of three different types of effects: collision risk, barrier effect and displacement effects. It is primarily during the operational phase that the impact on birds is at risk, but some disturbance may also occur during the construction and decommissioning phase as a result of increased activity of work vessels in the area. The risk of impact on birds depends largely on the location of the wind turbines, which birds use the specific area and how they use it. Collision and barrier effect can occur for migratory birds as well as for resting or foraging birds. (Rydell, Ottvall, Pettersson, & Green, 2017)

Barrier effect means that the birds avoid flying near the wind turbines, which can result in longer flight distances for the birds, which instead need to take detours. A barrier effect does not occur for all bird species and for migratory birds, the extra flight distance is considered to be a negligible addition in relation to the total flight distance. The risk of collision varies between different species and is affected by both the birds' flight heights and their ability to avoid wind turbines. (Speakman, Grat, & Hurness, 2009)

The displacement effect primarily occurs for resting and foraging birds and can occur in cases where birds that previously stayed in or near the area no longer find the area attractive after the establishment of the wind farm and instead seek new locations. Displacement can thus also cause habitat loss. The magnitude of the impact is estimated to have to do with whether the area in question constitutes an important habitat for the species or not. (Rydell, Ottvall, Pettersson, & Green, 2017)(Langston & Pullan, 2003)

Field studies and desk studies have been conducted during the years 2022-2024. The previous documentation will be updated if necessary and the occurrence and possible impact on birds will be investigated further and reported in the upcoming environmental impact assessment.

5.6.5 Bats

Bats rarely forage at such great distances from land as the project is planned, but there are several species that can fly long distances, even over water, to get to their wintering grounds. In Sweden, both regionally migratory species and long-migratory species such as the greyish bat and the troll pipistrel occur. Most bat species that choose to leave Sweden for other wintering sites do so during the period August to early October. (BatLife Sweden, 2025)

A desk study has been conducted by Nature Consultant Rune Gerell in 2023. The previous documentation will be updated if necessary and a detailed description will be presented in the EIA.

Potential environmental impact

The impact of wind power on bats has primarily been investigated in connection with land-based wind power. At sea, the impact is not as well studied, but it is assumed to be less than with land-based wind turbines. The main reason why the impact on bats occurs is as a result of collision with the rotor blades of wind turbines. As the wind farm is planned at great distances from land, foraging bats are not expected to occur to any great extent. Migration, on the other hand, can take place at long distances from land. It is therefore not possible to rule out that bats could migrate through the project area and thus the impact cannot be excluded. (Rydell, Ottvall, Pettersson, & Green, 2017)

The occurrence of and impact on bats will be investigated further and reported within the framework of the upcoming EIA.

5.7 Marine cultural environment

Ancient and cultural remains in areas far out to sea usually consist of wrecks. A shipwreck is an ancient relic if the ship sank before 1850, but shipwrecks that were shipwrecked after 1850 can also be classified as ancient relics if the County Administrative Board deems them to be of particular interest. Ancient monuments are protected according to Chapter 2. of the Cultural Environment Act (KML) and a permit from the County Administrative Board is required to disturb, remove, excavate, cover or otherwise alter or damage an ancient monument.

In the Swedish National Heritage Board's cultural environment register (CCHR), digitally available in Fornsök, all known ancient and cultural remains in Sweden are reported. Within or directly adjacent to the project area, in December 2025, a total of three remains were registered, see Table 4 and Figure 23.

Table 4: List of registered remains in the project area or its immediate vicinity.

Leave number	Remnant type	Antiquarian assessment
L1934:3829	Ship/boat	No antiquarian assessment, not confirmed in the field.
<i>Description: 48 Ship Remain, approx. 48x10 meters. Found during hydrographic survey by the Swedish Maritime Administration, in 2009.</i>		

<p>L1934:3830</p> <p><i>Description: Ship remain, approx. 68x25 meters. Found during hydrographic survey by the Swedish Maritime Administration, in 2009.</i></p>	<p>Ship/boat</p>	<p>No antiquarian assessment, not confirmed in the field.</p>
<p>L1934:4227</p> <p><i>Description: Ship remain, approx. 13x8 meters. Found during hydrographic survey by the Swedish Maritime Administration, in 2009.</i></p>	<p>Ship/boat</p>	<p>No antiquarian assessment, not confirmed in the field.</p>

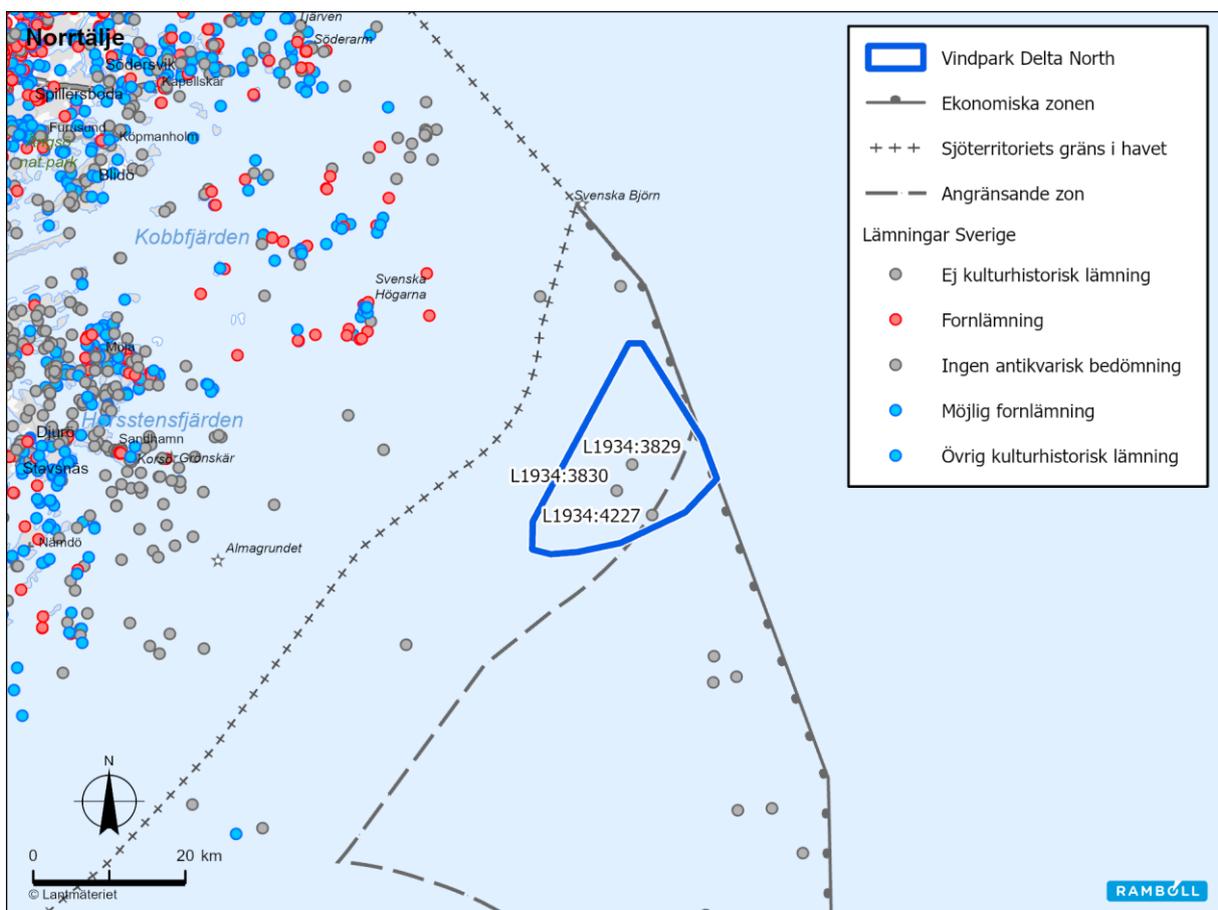


Figure 23: The map shows registered remains within and around the project area (The Swedish National Heritage Board's Cultural Environment Register, 2024).

All remains consist of ship/boat remains that have not been confirmed in the field. They are registered through sonar images from the Swedish Maritime Administration's hydrographic survey in 2009.

In addition to registered remains, Zephyr has drawn attention to a potential ship/boat remains in the project area that has not been assessed for antiquarian purposes, which Zephyr has informed the County Administrative Board in Stockholm about.

Potential environmental impact

Since the identified remains that are registered in the project area do not have an antiquarian assessment, they could constitute ancient monuments. Ancient monuments on the seabed can be affected, especially during the construction and decommissioning phase, as a result of physical influences, but also through sediment deposition.

In the upcoming EIA, the impact on seabed remains within and in the vicinity of the project area will be investigated and potential protective measures will be proposed if these are deemed necessary.

5.8 Landscape

The visibility of offshore wind turbines from the surrounding country depends on a number of different factors such as e.g. distance, rotor size, altitude at the observation point, topography, current visibility conditions and weather. As a result of the curvature of the Earth, there is also a maximum limit to how far an object is visible above the horizon. In general, it can be said that the human eye has the ability to see a wind farm at sea up to about five miles away during the daytime, provided that the visibility is good, that there is no haze and that the contrast between the wind turbines and the sky behind is high.

For this consultation document, a number of visualizations in the form of photomontages have been made from selected locations along the coast. The sites have been selected based on the criteria that they are popular places where people move in combination with the fact that the possibility of visibility has been high. Examples of photomontages are shown in Figure 24, all montages for the consultation document are available in Appendix 2 and on Zephyr's website www.zephyr.no/se/projekt/delta-north.

Potential impact

A landscape analysis has been produced in 2024 in which photomontages and obstacle light animations have been included. The previous analysis will be updated if necessary and a detailed description of the analysis and any impact on the landscape will be reported in the upcoming environmental impact assessment. In addition to landscape imagery, the consequences of visual impact will be described for e.g. cultural-historical environments, outdoor recreation and for certain areas of national interest where the landscape fulfils a special function.



Figure 24. Photo montage from Storskär, Norrpada archipelago

5.9 Recreation and outdoor recreation

The Stockholm archipelago's high natural and cultural values provide very great experience values. Also the unlimited availability for fishing, boating, canoeing, hiking, mushroom and berry picking. With its unspoiled character, the area can be considered to have a high recreational value. Open spaces and the unexploited nature are of great importance for the experience values and outdoor life in the area.

The outer part of the Stockholm archipelago is designated as a national interest for outdoor recreation (see section 5.3.4) and has good conditions for outdoor activities. Sport fishing is one of Sweden's most important leisure activities, in the Baltic Sea this occurs mainly near the coast. Sailing and travelling in other pleasure boats are largely absent from the wind farm according to observed sea traffic (see, (ICES, 2022)Figure 25: Map for the density of recreational boats in the project area. The dataset was created using EMODnet (2022). 25) . Exceptions apply to the annual ocean race (HELCOM, 2011)Gotland around. The race has been around since 1935 where the course runs from the Stockholm archipelago, south on the open sea to round Gotland and later to the finish line in Sandhamn.

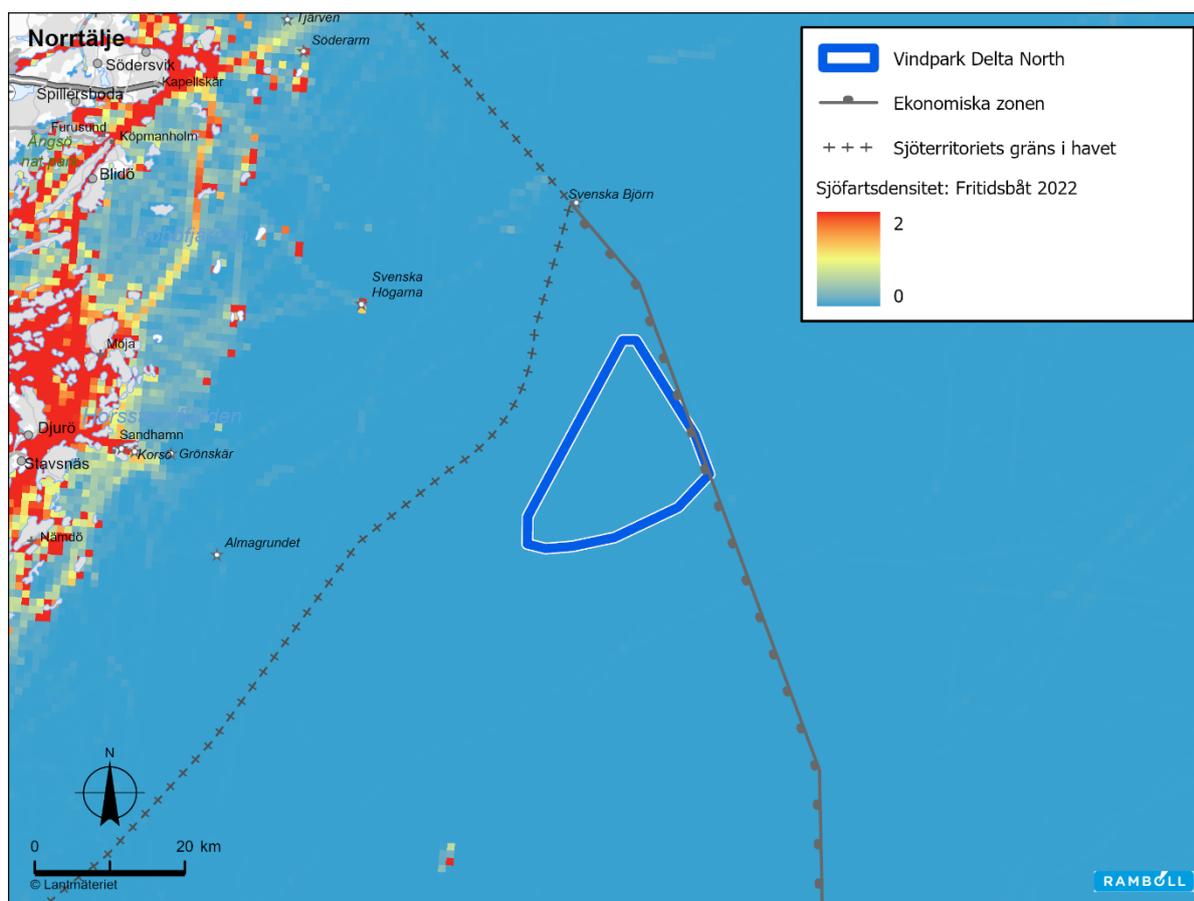


Figure 25: Map for the density of recreational boats in the project area. The dataset was created using EMODnet (2022).

Potential impact

Impact on recreation and outdoor recreation within the project area may arise in the event that recreational fishing or sailing occurs in the area. It is mainly during construction and decommissioning that the impact may arise in the form of limited accessibility as a result of an increased presence of work vessels and that safety zones will prevail around the work area. The impact is only expected to be temporary and during the operating period it will continue to be possible to sail and engage in recreational fishing in the area.

The consequences for recreation and outdoor life as a result of the wind farm will be investigated within the framework of the upcoming EIA.

5.10 Shipping

Shipping currently occurs within and in close proximity to the project area, see Figure 26. The Baltic Sea is of great importance for international trade and is therefore also one of the busiest areas in the world. The majority of the intensive vessel traffic passing through the project area consists of cargo and tanker vessels that go to ports in the Baltic Sea, the Sea of Bothnia, the Gulf of Bothnia and the Gulf of Finland, among others. The area is served by international merchant shipping, which is an important part of the region's maritime transport system. Passenger ferries between Sweden, Finland and Estonia also make up a large part of the traffic. (Havs och vattenmyndigheten, 2019)(EMODnet, 2021)

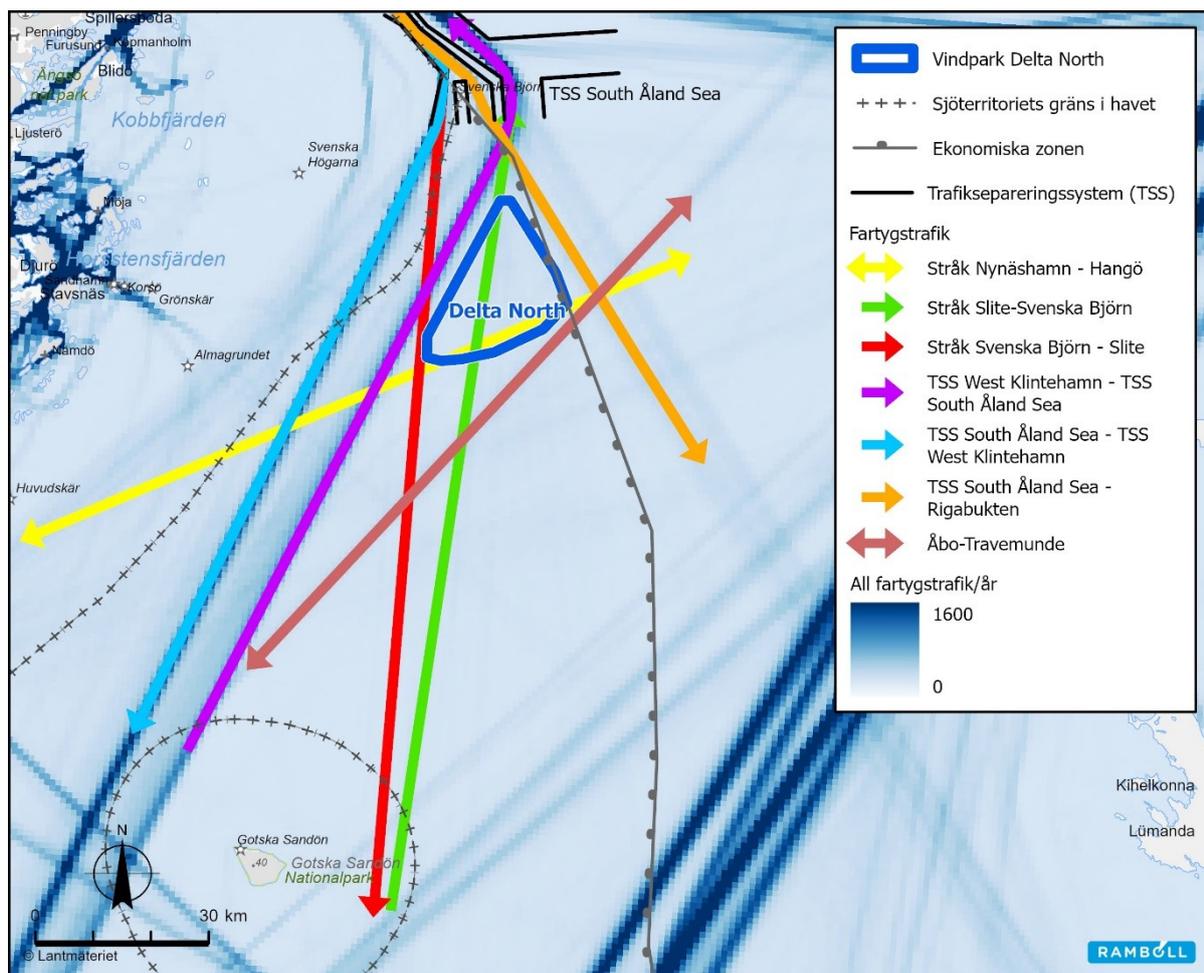


Figure 26: The map shows the main shipping routes in and around the Delta North project area.

Potential impact

The wind farm may pose a safety risk to shipping in established traffic routes. The expansion of offshore wind power can lead to impacts in the form of changed traffic patterns, obscuring shipping markings, radar interference or increasing the risk of collision and allision (collision between a ship and a fixed installation). If adjustments are required to existing traffic routes and routes, rerouting of maritime traffic may be necessary which could lead to an increase in total distance sailed and thus increased fuel consumption resulting in increased emissions from the ships. At the construction and decommissioning phase, extensive planning to reduce the impact on ship traffic in the area will be required.

A traffic analysis has been produced and forms the basis for a nautical risk analysis that has been carried out in 2022. The previous analysis will be updated if necessary, and a detailed description of the analysis and any impact on shipping will be reported in the upcoming environmental impact assessment. The need for any protective measures will also be made and reported.

5.11 Aviation

The airspace around the world is divided into flight information regions (FIRs) where Sweden stands for its own airspace, Sweden FIR. In addition to the regional divisions of airspace, it is divided into controlled and uncontrolled air. In controlled airspace, air traffic is controlled by air traffic control. The controlled airspace extends between 3,000–20,000 meters altitude in Sweden FIR and at

major airports. The uncontrolled airspace extends from 0-3,000 meters in Sweden FIR and here the pilot is responsible for avoiding collisions. (LFV, Luftrum, 2022a)

To avoid collisions with tall objects during approach, each major airport has a Minimum Sector Altitude (MSA) area, which civilly encompasses a circular area with a radius of 55 kilometers around the airport. For military MSA areas, a circular area with a radius of 46 kilometers is covered. Within this area, approach shall take place with a margin of 300 metres above the highest obstacle. (Boverket, 2021)(LFV, Hinderytor, 2022b)

The closest airport in relation to the project area is Bromma Stockholm Airport, which is located approximately 110 kilometers west of the project area. Arlanda Airport, which is Sweden's largest airport where over 20 million passengers flew in 2023, is located about 120 kilometers west of the project area. The MSA areas covered by the two airports are not affected by the project area, see Figure 27.

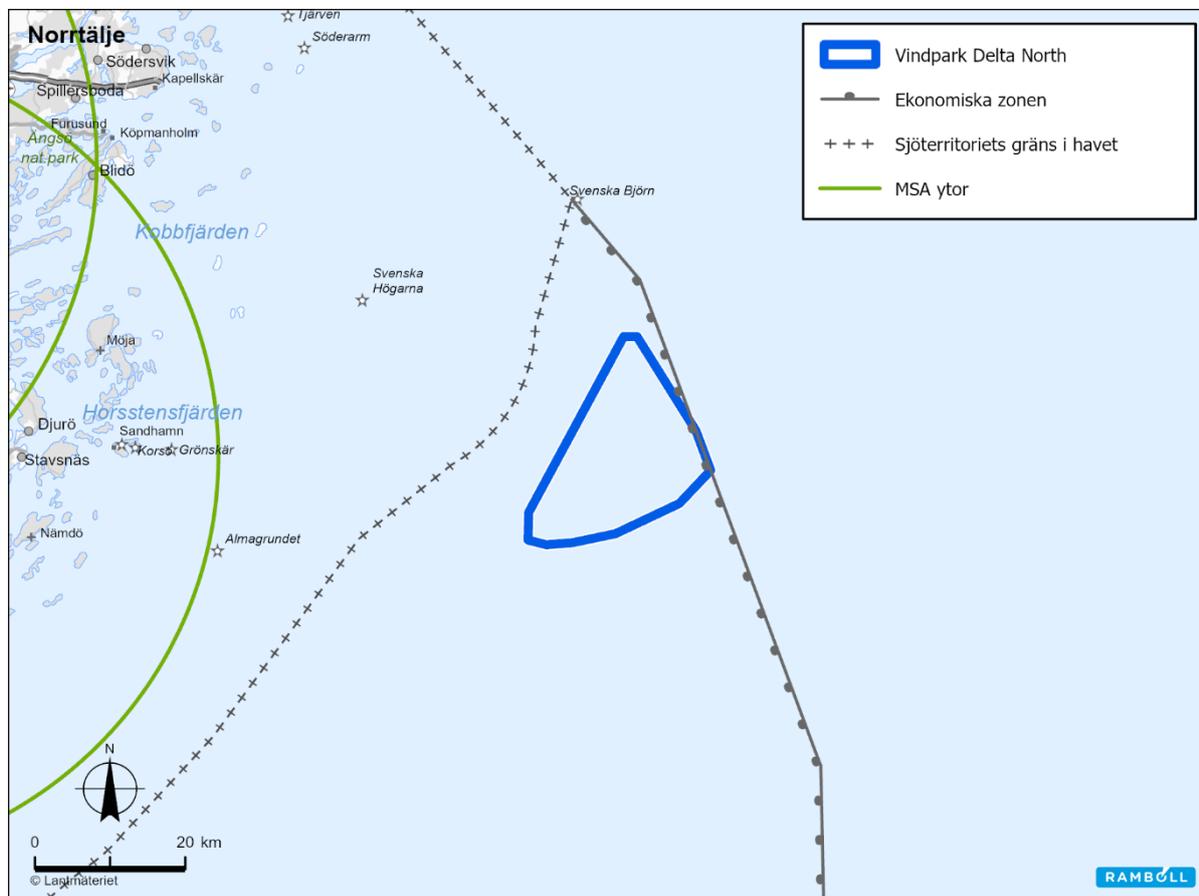


Figure 27. Nearby MSA areas in relation to Delta North.

Potential impact

The project area is not located within any MSA (Minimum Sector Altitude) areas or any national interest for aviation.

Before the establishment of the wind turbines, a flight obstacle notification will be submitted in accordance with Chapter 6. Section 25 of the Aviation Ordinance (2010:770). Any impact on aviation will be analysed and reported in the upcoming Environmental Impact Assessment (EIA).

5.12 Commercial fisheries

There is no designated area for commercial fishing within or adjacent to the project area.

(Havs och vattenmyndigheten, 2019)(Havs och vattenmyndigheten, 2019)Commercial fishing in the Baltic Sea takes place on very large areas and the areas used generally change between years and seasons. Pelagic commercial fishing, i.e. fishing in the open water, is carried out throughout the Northern Baltic Sea from the municipality of Värmdö and southwards and in a smaller area in the Southern Kvarken. In the area, mainly herring and sprat are fished by trawling.

Available data from the project area show that the fishing that takes place in the project area's surroundings is mostly done with pelagic trawling and seining, which is most often used to catch herring and sprat. (ICES, 2020)

Potential impact

Fixed facilities, such as a wind farm, can make it more difficult to engage in commercial fishing with trawling.(Havs och vattenmyndigheten, 2019)

A desk study was produced in 2022 with an analysis of the impact on commercial fishing in Sweden, Lithuania, Estonia and Finland. Previous documentation will be updated if necessary and a detailed description of the analysis will be presented in the upcoming EIA. The impact will be investigated further within the framework of EIA.

5.13 Other infrastructure

Two cables have been identified within the project area, see Figure 28. Both cables are reportedly in use. A telecom cable "Estonia – Sweden EE-S 1", which stretches between Tallinn and Stavsnäs, passes through the project area. The owners of the cable are Arelion, Great Nordic and Telia Eesti. The Pangea Baltic Loop is a fiber cable owned by CITIC Telecom CPC and stretches between Kärlda (Estonia) and Santahamina. The cable may pass through the project area, but the exact location is unknown. (Infrapedia, 2024)(CITIC Telecom CPC, 2017)

Zephyr will consult with CITIC Telecom CPC to ensure the geographical location and existing status of the fiber cable.

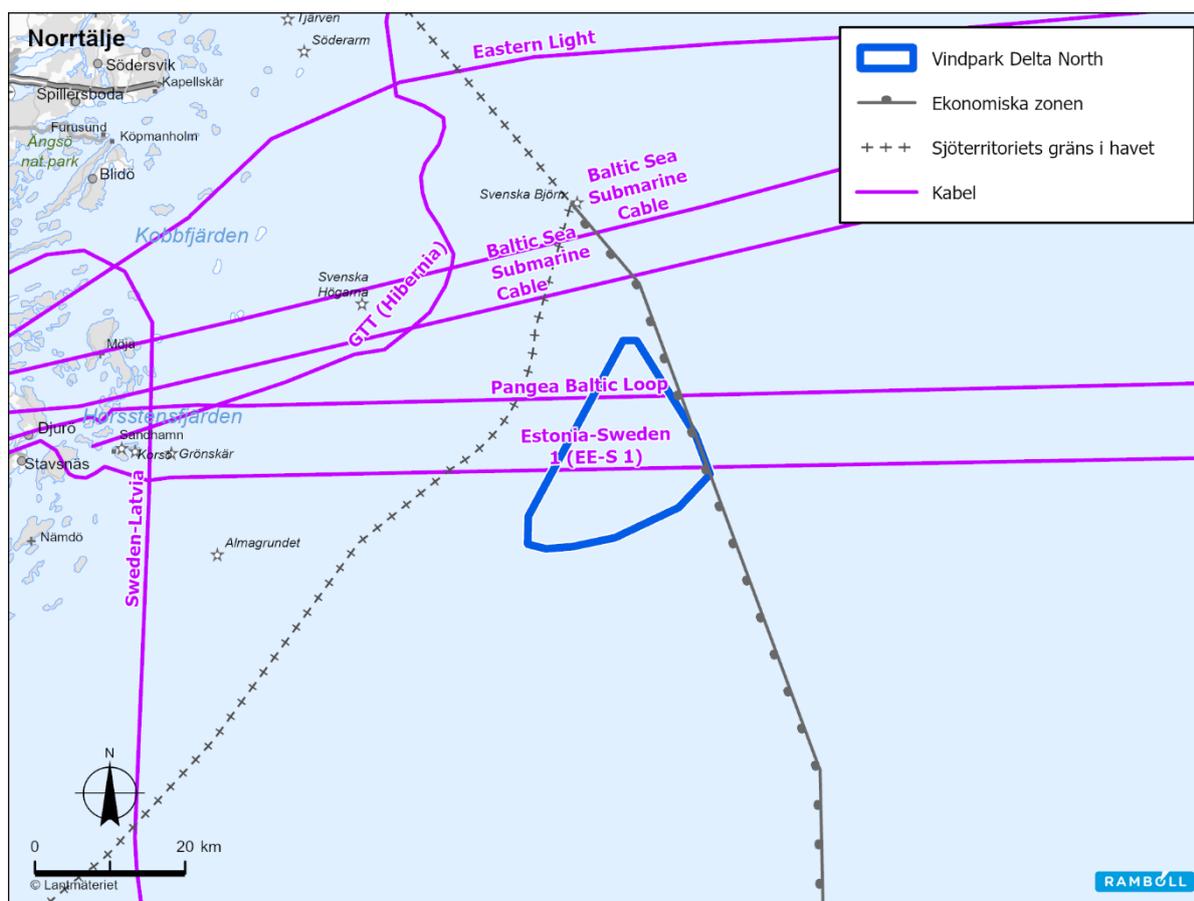


Figure 28: Existing and planned subsea cables within and around the project area. However, the exact location of the cables is unknown due to safety reasons. (Infrapedia, 2024)

Potential impact

When planning marine work in the project area, such as foundation laying or cabling, the possible presence of existing cables should be considered. To avoid damage to the remaining infrastructure, the owners of the cables will be consulted and the necessary agreements will be signed. The historical route and status of the cables will be included in the technical planning and reported in the upcoming environmental impact assessment.

5.14 Sound

Wind turbines in operation emit two different types of sound, aerodynamic and mechanical. Sound of an aerodynamic nature can be described as a hissing sound that occurs when the rotor blades pass through the air. The aerodynamic sound is determined based on blade shape, blade tip speed and meteorological conditions. The mechanical sound is generated from the gearbox and generator, among other things, and is only perceived near the wind turbine. According to guideline values from the Swedish Environmental Protection Agency, the noise from wind turbines must not exceed 40 dB(A) equivalent outdoor noise level at residential buildings. (Naturvårdsverket, 2020)

As a result of the wind farm being planned at large distances from land, the guideline value is expected to be below by a good margin, but the impact will be investigated further in the upcoming environmental impact assessment.

Low-frequency noise and infrasound

Low-frequency noise is sound in the frequency range of 20–200 Hertz. Sound below 20 Hertz is called infrasound and is usually not audible. The rotation of wind turbines gives rise to infrasound that is often around 1 Hertz, and in that frequency range a level of about 120 dB is required to see an impact on people. The possible impact of low-frequency sound and ultrasound that the project may have will be reported in (Naturvårdsverket, 2020) upcoming environmental impact assessment.

Underwater noise

During the different phases of the wind farm, it is mainly impulsive noise from piling of monopiles and pile anchors at the construction that is expected to generate significant levels of underwater noise, followed by noise from work vessels and general construction noise. Certain geophysical survey methods, which precede the construction work, can also have an impact through sound generation. During the operational phase, the wind turbines emit a low-frequency underwater noise where the operating noise is generally low and the area of impact is small. Underwater noise from ships and from sonars may also occur in the area during the operational phase. Sensitivity to underwater noise differs between different marine organisms and is highly species-dependent. The impact of underwater noise will be further investigated within the framework of the upcoming environmental impact assessment.

6. Environmental quality standards

Environmental quality standards are a legal instrument that is used, among other things, in the marine environment administration in Sweden. The purpose of the standards is to ensure that good environmental status is maintained or achieved. Through the Marine Environment Ordinance (2010:1341), the Water Management Ordinance (2004:660) and the Swedish Agency for Marine and Water Management's regulations (HVMFS 2012:18 and HVMFS 2013:19), the Marine Environment Directive (Framework Directive on a Marine Strategy, 2008/56/EC) and the Water Framework Directive (Water Framework Directive 2000/60/EC) have been introduced into Swedish legislation.

The project area for the Delta North wind farm is located within the offshore waters of the N Gotland Sea. . Any impact on environmental quality standards for the sea area will be assessed in the upcoming environmental impact assessment.(Vatteninformationssystem Sverige (VISS), 2025)

7. Risk and safety

7.1 General

There are risks associated with wind power, although most of them are very rare. Zephyr will work with risk identification and risk assessment during all phases of the project. Risks that should be taken into account are, for example, blade failure, fire, ice coating, oil leaks, collision and allision, as well as unexploded ammunition. All risks will be described and evaluated in the environmental impact assessment and in the upcoming work. Below is a more detailed description of collisions,

collisions and mine risk areas as these are considered to be of particular importance for the project in question.

7.2 Shipping lanes and shipping

The planned wind farm is located adjacent to established maritime traffic routes, which means that ship traffic regularly occurs in its immediate area. The construction of the wind turbines may have some impact on shipping, mainly through a potentially increased risk of collision between ships and allision, i.e. collision between ships and fixed installations. The project may also affect the navigation conditions in the area, especially in the vicinity of existing shipping lanes.

In view of the proximity of the fairways, it may be necessary to apply safety distances to the wind turbines to ensure safe passage. The risks to shipping can be minimized by introducing traffic restrictions within the project area, establishing safety zones, and installing obstacle lighting in accordance with current regulations.

An assessment of the impact of and need for any protective measures will be made and reported in the upcoming environmental impact assessment.

7.3 Mine-risk areas

In the Baltic Sea, there are areas with a risk of the presence of dumped ammunition and a risk of the presence of sunken mines from the Second World War (Swedish Agency for Marine and Water Management, 2019c). Just west and southwest of the project area's boundary, there are three areas with a low to medium risk of the presence of mines, see Figure 29. The closest known area for dumped ammunition is south of Gotland. During the continued planning of Delta North, investigative investigations will be carried out to identify any ammunition and mines within and adjacent to the project area.(EMODnet, 2021)

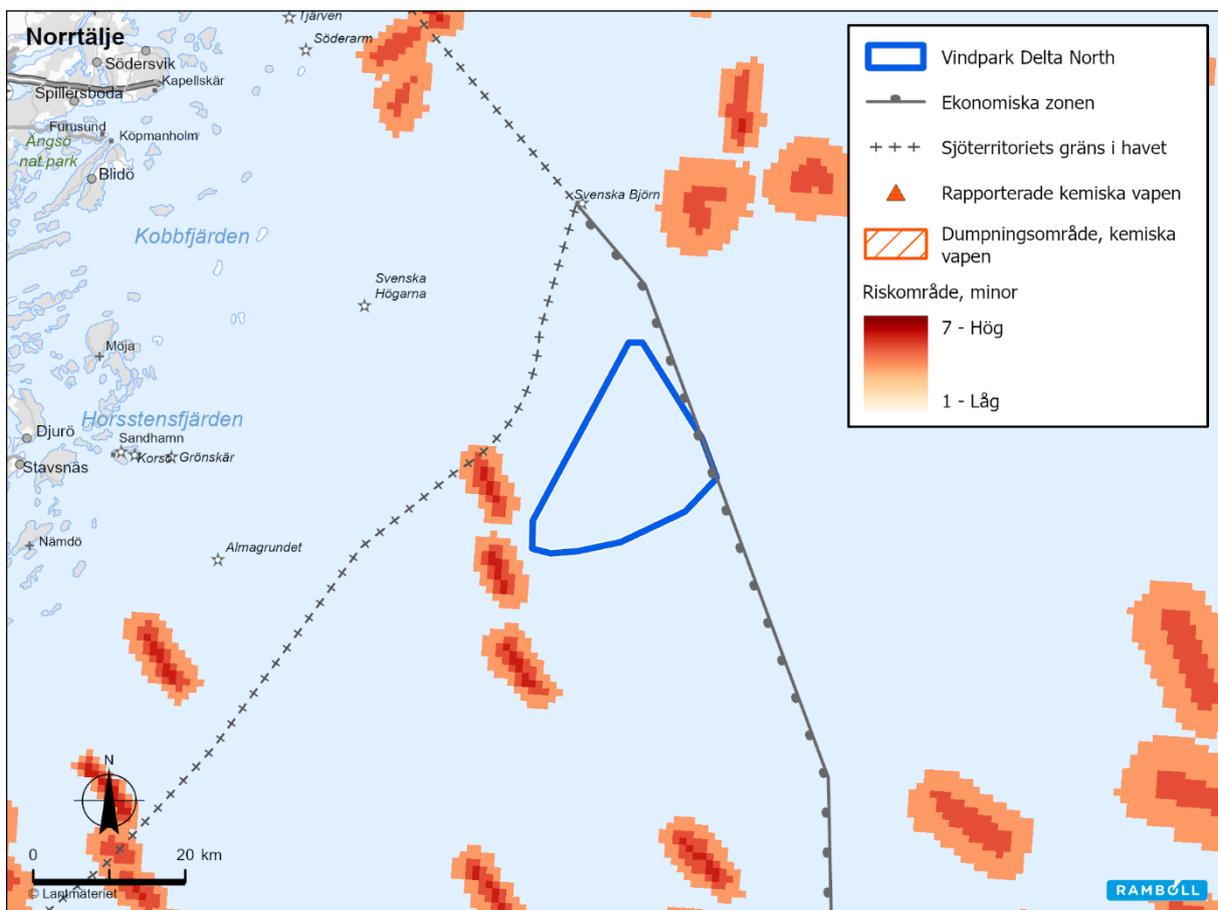


Figure 29. The map shows areas and points where munitions can be expected or found. (HELCOM, 2022)

8. Cumulative effects

Cumulative effects arise from the interaction of several different effects. For example, it can be environmental effects that arise from one and the same activity or measure, or if environmental effects arise due to collaboration between several different activities. When assessing cumulative effects, parameters that are relevant and possible to assess are analyzed. Cumulative effects will be investigated in the upcoming EIA and relate to (i) operations in operation, (ii) licensed operations or (iii) others that have been approved and may be commenced, in accordance with Section 18, Section 6 p. of the Environmental Assessment Ordinance. In the upcoming environmental impact assessment, cumulative effects will be investigated.

9. Cross-border impact

Cross-border impacts may potentially arise and thus consultations will be carried out in accordance with Chapter 6. Section 33 MB in order to meet the requirements for cross-border consultation in directives 2011/92/EU (the "EIA Directive") and the Convention on Environmental Impact Assessment in a cross-border context (the 'Espoo Convention').

Cross-border impacts can be linked to e.g. protected areas, marine mammals, birds, commercial fisheries, shipping or military training areas.

10. Continued work

10.1 Environmental impact assessment

An EIA will be established in accordance with Chapter 6, Sections 35–36 MB and 15–19 Sections of the Environmental Assessment Ordinance and form the basis for future permit applications. The EIA shall identify and describe the direct and indirect effects that planned activities or measures may entail, both on people, animals, plants, the seabed, water, air, climate, landscape and cultural environment, as well as on the management of land, water and the physical environment in general. Furthermore, the EIA will contain the information prescribed according to the MB and have the level of detail that is reasonable with regard to prevailing knowledge and assessment methods. The overall purpose is to create an overall assessment of the significant environmental effects that the activities can be assumed to entail. During the consultation process, Zephyr will seek views on the work with EIA and its delimitation in terms of content and scope. Proposals for the content of the EIA are presented below.

Proposal for content in EIA

- Non-technical summary - Introduction
- Permits and consultations - Delimitations in EIA
- Method of assessment - Activity description
- Influencing factors
 - Construction phase
 - Operation
 - Decommissioning
 - Summary of influencing factors
- Alternative accounting
- In-depth description of the area
 - Introduction
 - Depth conditions
 - Bottom structure
 - Meteorological conditions
 - Oceanographic conditions
 - Description of the current situation, effects, consequences and project adaptations and protective measures
 - Benthic community
 - Fish
 - Marine mammals
 - Birds
 - Bats
 - Cultural environment
 - Landscape
 - Recreation and outdoor life
 - Commercial fishing
 - Shipping and shipping lanes
 - Other business and infrastructure
 - Overall assessment
- National interests
- Protected areas/Natura 2000

- Environmental quality standards
- Climate and life cycle assessment
- Marine traffic analysis and risk assessment
- Cross-border impact
- Safety, environment and health
- Cumulative impact
- Competence among EIA authors
- References

10.2 Indicative timetable

The timeline for realizing Delta North is estimated to be around 10 years. An overall distribution between different project phases up to completion is given below in Table 5.

Table 5. Preliminary timetable for permit process, investigations and implementation.

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Consultation under the Environmental Code	█											
Permit process and investigations	█	█	█	█	█							
Design, procurement & financing						█	█	█				
Construction grid connection									█	█		
Construction of wind farm										█	█	█

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