



Netherlands Commission for
Environmental Assessment

Cumulative effects Wadden Sea World Heritage site

Advice on the draft scoping report

16th of April 2026 / project number: 3986



1 Advice on the contents of the scoping report

In September 2023, the World Heritage Committee (WHC) requested a joint Strategic Environmental Assessment (SEA) for the Wadden Sea World Heritage site. The site includes part of the coast of Denmark, Germany and the Netherlands (see Figure 1). The purpose of this joint SEA is *'to assess the cumulative impacts of existing and/or proposed extraction and infrastructure developments'* within and around the Wadden Sea taking climate change into account.¹ In 2024, the WHC added to this request to *'ensure that the focus of the SEA is on the potential impacts on the attributes which convey the OUV [Outstanding Universal Value²] of the property, as well as other heritage/conservation values'*.³

In response to these requests, the Trilateral Wadden Sea Cooperation (TWSC) committed itself to the creation of the requested joint SEA.⁴ This joint SEA aims to provide information on the impacts (including the cumulative impacts) of proposed developments (plans, programs and projects) in the three countries on the Outstanding Universal Value (OUV) of the Wadden Sea (see Figure 2). The trilateral Wadden Sea Board (WSB) asked the Netherlands Commission for Environmental Assessment (NCEA) for an independent advice on the forthcoming joint SEA report, based on the draft scoping report⁵. To do this, the NCEA formed an international expert group with members from each of the involved countries.

Essential information for the joint SEA report

The NCEA agrees with the necessity of a joint SEA in which the cumulative impacts on the Wadden Sea World Heritage site are assessed. The joint SEA provides an excellent and needed opportunity to identify the largest threats to the OUV on a trilateral scale and find ways to ensure the protection of the natural heritage values of the Wadden Sea. The NCEA emphasizes that to answer the request(s) by the WHC, the joint SEA should follow best practice SEA principles.

The NCEA deems the following aspects to be essential in the joint SEA report. In other words, for a complete and methodologically correct assessment, the joint SEA must at least contain the following information:

- **A clear focus.** Provide an overview of the questions that need to be answered in the joint SEA. These questions determine the appropriate approach to assess the cumulative impacts on the Wadden Sea.
- **Alignment of different legal frameworks.** The joint SEA will be predominantly based on European Directives. The implementation of these Directives differs in the three countries. Alignment of these differences needs to be reached and agreed upon.
- **An agreed upon baseline.** The WHC requires that the moment of inscription on the World Heritage List (2009 for the Dutch and German part, 2014 for the Danish part) should be

¹ See [Decision WHC/23/45COM/7B.23](#).

² Outstanding Universal Value (OUV) is the cultural or natural significance that makes a site a World Heritage site. It is deemed so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. For more information, see [website of the UNESCO World Heritage Centre](#).

³ See [Decision WHC/24/46COM/7B.51](#).

⁴ This commitment was made and recorded in the [2024 State of Conservation Report](#).

⁵ Trilateral Cooperation on the Protection of the Wadden Sea (TWSC) and Task Group World Heritage (TG-WH). 2025. *Joint Strategic Environmental Assessment on cumulative effects: Draft Scoping Report Wadden Sea World Heritage Site*. Common Wadden Sea Secretariat (CWSS), Wilhelmshaven, Germany.

used as the baseline study. For a data-based approach, the current state of the Wadden Sea (including trends) is a more appropriate and manageable baseline. Use the current situation as the baseline for the data-based approach to assess the cumulative impacts of the different scenarios and supplement this with an assessment in broader terms of the trends and impacts since the inscription. This approach to the baseline requires agreement between the three countries involved and with the WHC.

- **Agreement on assessment approach.** The assessment focuses on both the cumulative impacts of all current developments on the OUV and future scenarios up to 2050. A manageable selection is needed of the plans, programs and projects to be considered at a national level. Use a well-substantiated prioritization system for this that is aligned with the three involved countries. Select a data-driven approach to identify the human pressures on the Wadden Sea. The outcome of the national components needs to be jointly compared and aligned throughout the process in order to strengthen the integration of the national contributions in the final report.
- **Widening of the assessed topics.** In the Integrated Management Plan for One Wadden Sea World Heritage (SIMP)⁶, five key topics have been identified that form the foundation of the focus of the joint SEA in combination with climate change, according to the scoping report. These topics are: fisheries, tourism, shipping/ports, energy and coastal protection. This focus will most likely result in lacunae of other activities with substantial (cumulative) impact. At a minimum, the assessment should also include agricultural and industrial activities, military activities, marine litter and invasive species.
- **Additional scenario.** The scoping report identified three scenarios to be researched in the joint SEA. Add an additional scenario with a regulated decline of or changes in human activities that ensures a decrease in the current cumulative impacts. Base these activities on the highest (human) pressures on the OUV in order to enhance the OUV.
- **Ownership of joint SEA results and monitoring.** The joint SEA is conducted without a specific plan, program or project attached to it. While understandable given the context of this joint SEA (requested by the WHC), this does make agreement on ownership of the results of the joint SEA essential. Clear ownership is important for accountability, follow-up, monitoring and to ensure the outcomes of the joint SEA actually contribute to achieving the intended objectives.

Decision-makers and stakeholders primarily read the summary of the joint SEA report. That is why this section merits special attention. The summary should be comprehensible as a standalone document and should represent the content of the entire joint SEA report.

In the forthcoming sections, the NCEA will elaborate on the specific details that must be included in the joint SEA report. This advisory report builds on the contents of the draft scoping report. It only revisits points raised in the scoping report when this is required for a proper understanding of the advisory report, or when suggesting modifications to elements of the approach.

⁶ Common Wadden Sea Secretariat. 2023. *The SIMP Integrated Plan for ONE Wadden Sea Heritage*. Wilhelmshaven, Germany.

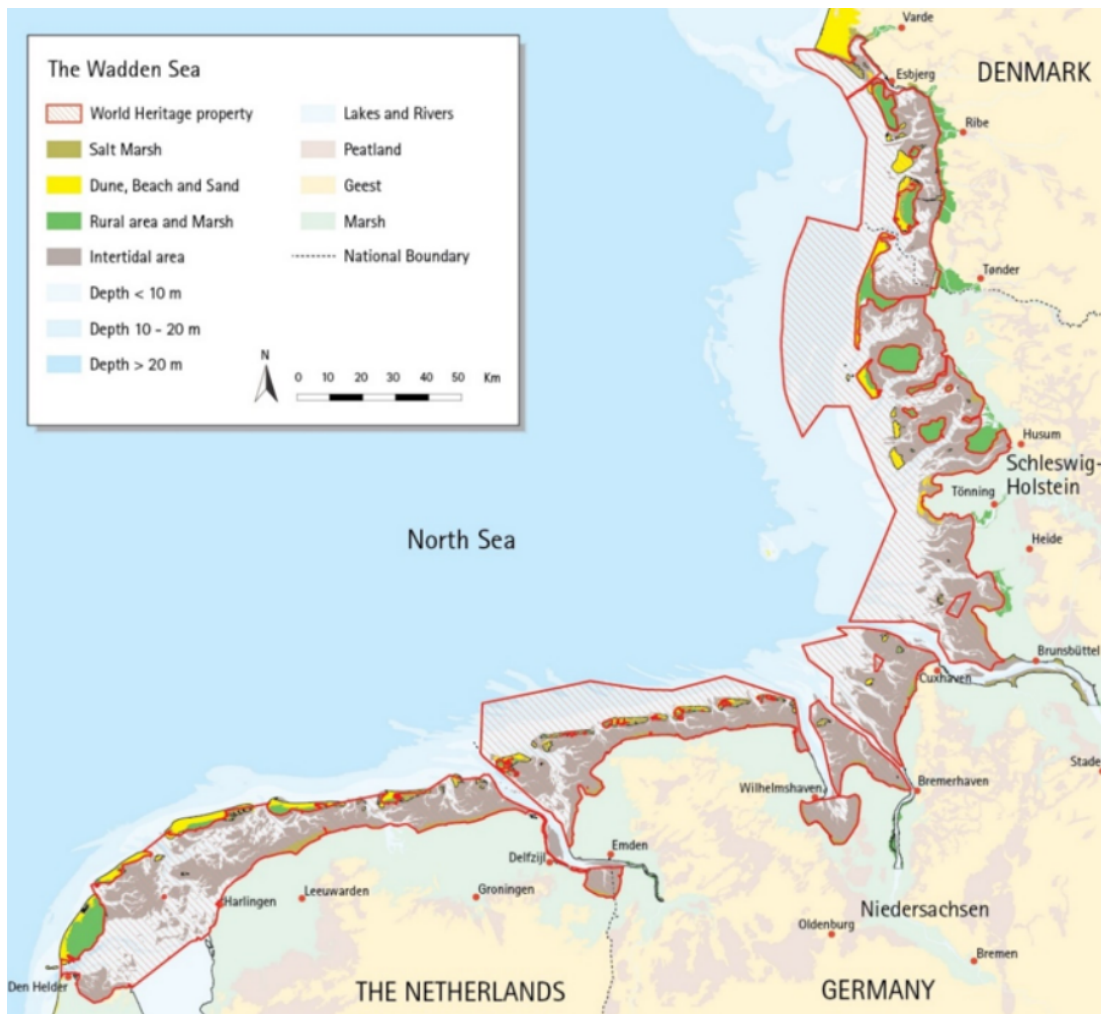


Figure 1: The Wadden Sea World Heritage Site (source: SIMP).

Background to the SEA report

In 2023, the World Heritage Committee (WHC) expressed concern about the development within and around the Wadden Sea World Heritage site and requested the three State Parties (Denmark, Germany and the Netherlands) to conduct a joint Strategic Environmental Assessment (SEA). This joint SEA should assess the cumulative impacts of all existing and planned human activities within and around the property on the OUV of the property and should be in line with the Guidance and Toolkit for Impact Assessments in a World Heritage Context.¹ In 2024, the WHC reiterated this request for a joint SEA and added that this joint SEA should focus ‘on the potential impacts on the attributes which convey the OUV of the property [the Wadden Sea], as well as other heritage/conservation values’.³

Because the joint SEA is made in response to a request by the WHC, it is not connected to a specific plan or program. This means that the joint SEA is not made based on the European SEA Directive (Directive 2001/42/EC). However, the SEA directive is taken as the common legal ground for the joint SEA, taking into account the particularities of this assessment.

The role of the Netherlands Commission for Environmental Assessment (NCEA)

The NCEA is an independent body, established by Dutch law, that is tasked with advising on the content and quality of impact assessment reports. It appoints a working group of independent experts for each project. It does not prepare environmental assessment reports. That responsibility rests with the initiator: in this case the Trilateral Wadden Sea Cooperation.

Annex 1 of this advisory report contains details of the NCEA working group's composition and procedures, as well as additional project details. The project documents used when drafting the advisory report have been made available on the NCEA's website. These can be accessed by entering the number 3986 into the search field at www.commissiener.nl.

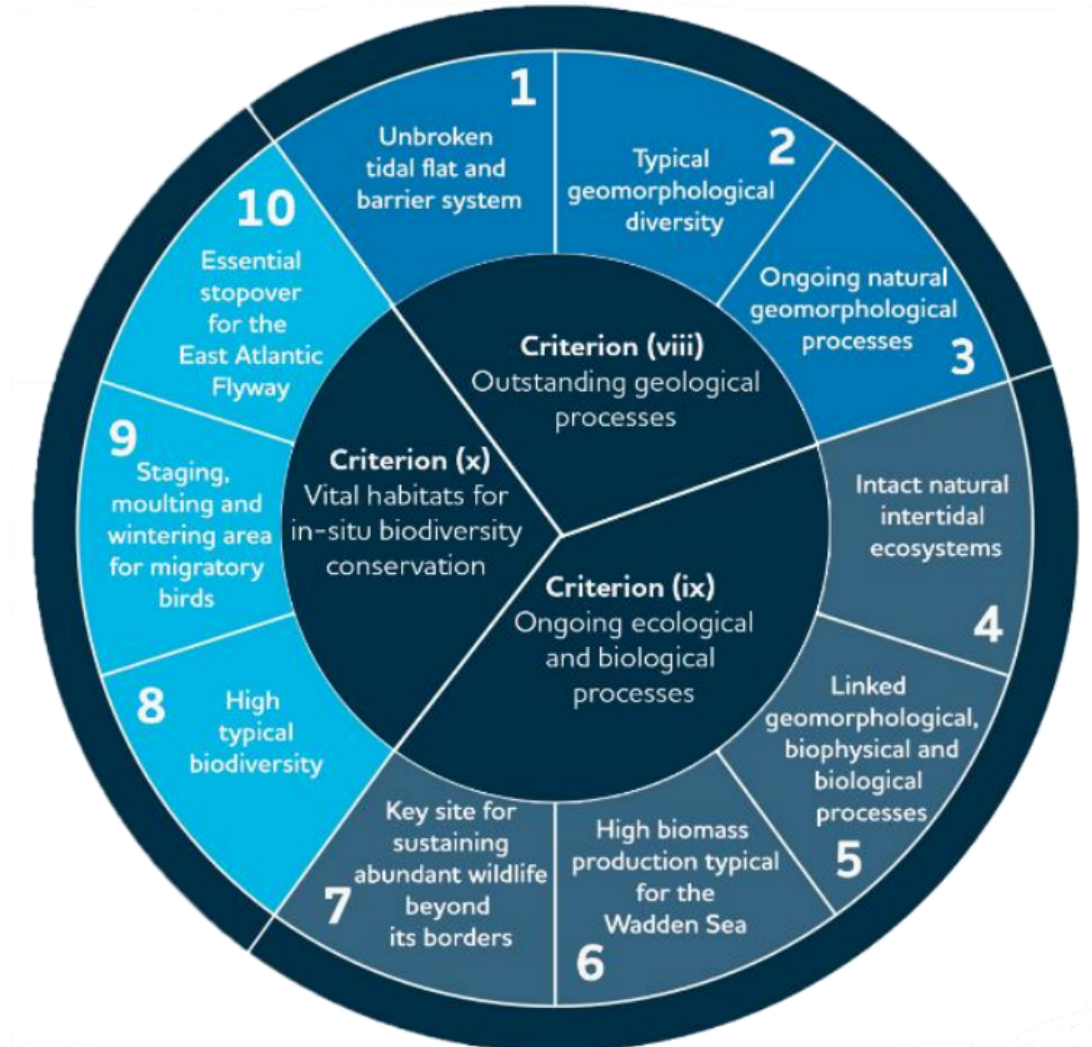


Figure 2: The OUV of the Wadden Sea, subdivided into the three criteria and the respective ten key values (source: scoping document).

2 Background and policy framework

2.1 Background

The scoping report clearly describes the background to the joint SEA. The World Heritage Committee expressed concerns about the different human activities within, near or beneath the Wadden Sea and their impacts. This concern resulted in a request to conduct a joint SEA specifically focused on the cumulative impacts of all existing and/or proposed developments

on the OUV of the Wadden Sea. In 2024, the three involved State Parties (Denmark, Germany and the Netherlands) committed to carrying out this joint SEA. This resulted in a trilateral agreement on the scope of the joint SEA (see pages 5–6 of the scoping report).⁷

The purpose of the joint SEA is, according to the scoping report, to *‘provide a better insight into the proven and expected cumulative pressures on the OUV’* and to *‘provide information that can be used for future decision-making’*. It *‘should further improve the consideration of the OUV and help to reduce cumulative pressures on the OUV attributes and other relevant values of the Wadden Sea’*. The NCEA agrees that a joint SEA can and should provide much valuable and relevant information on the cumulative pressures on the Wadden Sea and advises to clearly describe who is responsible for ‘ownership’ of the results of the joint SEA. The results of the joint SEA need to be taken into account on a case-by-case basis in the three State Parties for all relevant plans, programs and projects.

2.2 Policy and legal framework

The scoping report provides an extensive overview of the relevant legal frameworks in Denmark, Germany and the Netherlands. The NCEA advises to add this overview in the joint SEA. Describe which laws, regulations and policies are relevant for the management of Wadden Sea World Heritage site and what preconditions derive from this. Address at least:

- the World Heritage Convention and its Operational Guidelines, including relevant recent decisions by the World Heritage Committee;
- relevant international treaties, including the 2022 UN Kunming–Montreal Global Biodiversity Framework (GBF)⁸;
- relevant EU Directives, such as the Maritime Spatial Planning Directive (MSPD), the Marine Strategy Framework Directive (MSFD), the Water Framework Directive (WFD), the Habitat Directive and Birds Directive and the Nature Restoration Regulation (NRR). Provide an overview of the national implementation of these in Denmark, Germany and the Netherlands and highlight relevant differences between these implementations (see below);
- national, regional and local frameworks that apply to the Wadden Sea itself (such as designated national parks, nature reserves and archeological protection) and its surrounding area.

Alignment of differences in implementation of the legal frameworks

The scoping report shows (in table 2) a translation of the EU-Directives in the three countries. The NCEA emphasizes that the international and EU legal framework on whether and how cumulative effects should be examined and described is the same, but the implementation and application of these requirements could differ substantially in the three countries. This has to be made explicit, and choices must be made for the SEA process. The NCEA advises that the joint SEA will be coherent with practice in all three countries where possible. The

⁷ In short, the agreed upon scope is: (1) the joint SEA includes all relevant projects, programs and plans and pays specific attention to OUV, (2) the focus is on cumulative effects in a transboundary perspective, (3) the SIMP serves as the basis for identifying relevant projects, programs and plans, (4) existing SEAs and EIAs are used as the basis for information, and (5) EU legislation provides a common basis for the joint SEA.

⁸ See the [website of the European Commission](#).

NCEA also advises that the authorities and stakeholders involved in drafting the joint SEA must be made aware of this and that they cannot on all points follow their 'common practice'.

Pressure on the SEA and EIA process

The NCEA emphasizes that there is a political agenda ongoing in Europe for simplification and shortening of impact assessments which has manifested in a range of EU legal acts.⁹ These acts aim for faster decision making for energy (including power grid) projects and other infrastructure projects. The NCEA stresses that this joint SEA can contribute to providing an overarching framework that can be used effectively for addressing environmental issues for individual plans, programs and projects. In doing so, it can help to combine time efficiency with due diligence by enabling faster decision-making without losing sight of the environmental impacts on the Wadden Sea. Describe in which way(s) this study can help to keep the environmental impacts on the Wadden Sea in scope when taking decisions on these individual plans, programs and projects.

2.3 Official decision(s)

The joint SEA is made in response to the request(s) by the WHC. There is no clear plan or program to which the joint SEA is connected. The NCEA advises to clarify how the outcomes of the joint SEA will be materialized. Describe this on:

- the national level in each involved country, for example in decisions for plans, programs and projects that might affect the OUV;
- the trilateral level, for example in the next update of the management plan of the Wadden Sea World Heritage site.

The NCEA also emphasizes that alignment is needed with the responsible national and sub-national (regional and local) competent authorities of the different human activities that might have (cumulative) impacts on the OUV of the Wadden Sea. Competent authorities on a sub-national level are often responsible for decisions on plans, programs and projects, and the implementation of mitigation measures.

3 Process and scenarios

3.1 Working structure for the joint SEA

The scoping report provides a working structure for the joint SEA that consists of three steps (see Figure 3). These steps are:

- 1) agreement on the methodology for the trilateral approach. This methodology includes the principles of the Guidance and Toolkit by UNESCO and IUCN¹⁰;
- 2) agreement on the three national components of the joint SEA;

⁹ See for example articles 15a ff and 16a ff Directive 2018/2001 (Renewable Energy Directive), which have been introduced by Directive [2023/2413](#) (Red III), the [proposal for a regulation on speeding-up environmental assessments](#), and articles 6 and 7 of EU [Regulation 2022/869 \(Nature Restoration Regulation\)](#).

¹⁰ UNESCO, ICCROM, ICOMOS, IUCN. 2022. [Guidance and Toolkit for Impact Assessments in a World Heritage Context](#).

3) trilateral integration of these national components in the joint SEA.
The NCEA addresses these steps below.

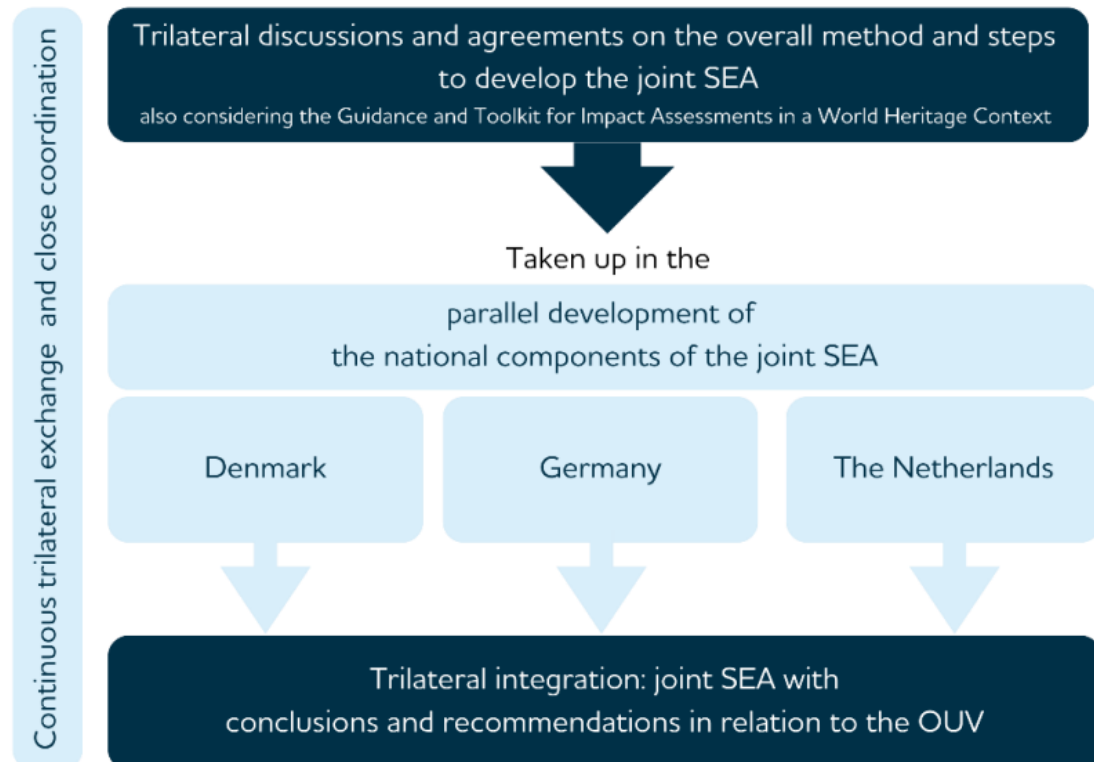


Figure 3: Proposed working structure for the joint SEA (source: scoping report).

Agreement on methodology

The NCEA advises to clearly define the questions that need to be answered by the joint SEA. These questions determine the most appropriate approach and methods for the assessment (see chapter 4.2 of this advice). For example, the goal of the joint SEA can be to:

- qualitatively summarize the existing SEAs and EIAs for all relevant plans, programs and projects in the three countries and, then, analyze in both a qualitative and quantitative way the possible combined cumulative impacts on the Wadden Sea's OUV using a data- and tool-based approach;
- identify the most important (human) pressures on the OUV and map out hot spots in order to identify mitigation measures.

The NCEA highlights that the selection of the appropriate scale/resolution is important and depends on the question raised and the data available.¹¹ The NCEA also emphasizes that the joint SEA should specify how the defined goal contributes to answering the request(s) by the WHC.

Integration national SEAs into joint SEA

The joint SEA is focused on cumulative effects on OUV, is trilateral, includes transboundary effects and is not related to a specific plan, program or project. This makes this joint SEA

¹¹ In June 2026 the pressure assessment for Europe based on the EEA data set will be published. This data set could be used for the Wadden Sea, but it needs downscaling. Some aspects also need to be included, such as marine litter and some other data layers might be needed.

different from what is usually done in an SEA process. The NCEA emphasizes that these differences need constant attention when drafting the joint SEA. An important side-effect of this can be a mutual learning process on differences and best practices which may benefit all three countries, their governments and stakeholders involved. However, this requires that the joint SEA is understood as a truly joint and collaborative exercise that goes beyond stapling data and reports from three countries. The NCEA advises to jointly assess, compare and (to the extent possible) align the national contributions to the final joint report. This will save time, improve its quality and increase the effectiveness of integrating the national contributions.

3.2 Scenarios

Table 1 of the scoping report describes three scenarios for 2050 that will be assessed in the joint SEA. These scenarios are:

- 1) reference scenario: no new human use activities are introduced, existing pressures and trends from the baseline continue unchanged;
- 2) projected development: all reasonably foreseeable future human use activities (including plans, programs, and projects) are implemented without foreseeable conservation measures (WFD, MSFD, Natura 2000, NRR);
- 3) regulated development: all reasonably foreseeable future human use activities (including plans, programs and projects) are implemented, along with foreseeable conservation measures (WFD, MSFD, Natura 2000, NRR).

All scenarios will take climate change into account according to the scoping report. The NCEA emphasizes that scenario 2 is already not realistic for the Danish, Dutch and German context, because various conditions in the Wadden Sea already do not meet legal standards or policy requirements.¹² This does not mean that scenario 2 should not be researched, because clarity on this will help decision making to take appropriate action. The NCEA also emphasizes that a clear definition of 'conservation measures' is needed to create a useful distinction between scenarios 2 and 3. Make clear if this includes 'nature management' and/or 'nature facilitation'.

Scenario to enhance OUV

The NCEA highlights that the joint SEA should follow best practice SEA principles in order to answer the request(s) by the WHC. This means that the joint SEA should not only focus on projected and regulated development, but should also focus on ways to enhance the OUV of the Wadden Sea. Such a focus on enhancing OUV also follows from the 2022 UN GBF and the connected requirement to 'do good'¹³, which has been signed by each of the three involved countries. It also is needed in response to not meeting legal standards and policy requirements (see previous paragraph).

¹² See for example the Danish report [Vurdering af tilstanden i danske havområder for Havstrategi D8](#), the Dutch reports [Staat van de Waddenzee 2025](#) (which is currently being translated in English) and [Beleidskader Natuur Waddenzee – Advies over de ecologische onderbouwing](#), the German report [Zustand der deutschen Nord- und Ostseegewässer 2024](#) and the [Synthesis Report of the 16th International Scientific Wadden Sea Symposium](#).

¹³ For more information, see IUCN. September 2025. [The nature-positive goal and the mitigation hierarchy](#).

In this context, the joint SEA provides the perfect opportunity to also research a scenario in which there is a regulated decrease in the effects of certain human activities to enhance the OUV. This scenario could also be connected to the implementation of the MSFD, WFD and NRR in the spirit in which they were adopted. This means that, in response to the baseline study (see chapter 4.1 of this advice), a scenario should be added in which the human activities with the highest pressures on the OUV could be reduced in such a way that the key values of the OUV are improved and enhanced. The NCEA advises to distinguish mitigation measures and compensation to be implemented for the short, medium and long term. The NCEA also advises to add a SWOT analysis or a cost–benefit analysis for these measures. This provides an overview of the effectiveness and costs of ways to enhance the OUV.

The following examples of mitigation measures and compensation could be considered to include in this scenario:

- (increased) connectivity to fresh–marine ecosystems;
- establishment of free–flowing rivers and/or the creation of fish migration rivers;
- seagrass rehabilitation;
- extension of nature areas through conversion of land use;
- (local) restrictions to touristic and recreational activities;
- removal of ammunition without environmental conflicts;
- changes in ways of transportation in the area, such as tide–based/restricted (commercial) shipping access to ports, changes in the use of international shipping lanes and transport options for local inhabitants/visitors to the islands that requires less dredging.

Suggested additional (Dutch) scenario

The scoping report states that an additional scenario might be added in the Dutch national component of the joint SEA. This is in response to the report by Bastmeijer et al. (2024)¹⁴ that concluded that better implementation of international agreements is needed in the Netherlands. The scoping report suggests that Danish and German legislation are sufficient. The NCEA emphasizes that this cannot be definitively concluded based on only Bastmeijer et al. (2024) as the scoping report seems to suggest. Similar (or other) shortcomings might be found in Denmark and Germany if a similar assessment would be made.¹⁵ The NCEA advises to reflect on the extent in which the points raised by Bastmeijer et al. (2024) about the Dutch context might also be applicable in the Danish and German context. Substantiate the conclusions of this reflection. The NCEA advises not to make a separate scenario from these shortcomings, but to integrate this into the scenarios described above where needed.

3.3 Comparison scenarios

The cumulative impacts of the scenarios need to be compared with the baseline (see chapter 4.1 of this advice) and with each other. The goal of this comparison is to show to what extent the scenarios have different impacts. This comparison should preferably be based on quantitative information. Include the goals and set norms from environmental policies and discussed in scientific research.

¹⁴ Bastmeijer et al. 2024. [The Status of the Wadden Sea under European and International Law](#). Waddenacademie.

¹⁵ See for example the conclusions of Andersen et al. 2023. [Are European Blue Economy ambitions in conflict with European environmental visions?](#)

4 Baseline and environmental impacts

4.1 Baseline

Describe the current situation of the Wadden Sea. The scoping report provides a clear overview of the OUV of the Wadden Sea. The Wadden Sea has been inscribed on the World Heritage list based on criterion viii (outstanding geological processes), ix (ongoing ecological and biological processes) and x (vital habitats for in-situ biodiversity conservation). The OUV based on these criteria has been subdivided into ten so-called key values. These key values have then been translated into attributes in Annex 2 of the scoping report. The NCEA emphasizes that these attributes need to be further translated into parameters in both a qualitative and quantitative way.

In addition, the following 'other heritage conservation values' have been identified that will be included in the assessment: scenic beauty, landscape and culture, silence, air quality, water quality, darkness, recreational values and climate change mitigation potential. In accordance with the Guidance and Toolkit, the baseline should therefore include the Wadden Sea's OUV, other heritage/conservation values, the attributes, boundary, buffer zone and wider setting.

The area of the Wadden Sea World Heritage site is well-defined. The joint SEA should at least include a clear map of the area that makes clear which areas are included and which areas are excluded from the World Heritage site (for example, in the Dutch case the barrier islands are not part of it). Use the most recent (scientific) literature for the baseline and for current trends.¹⁶

The NCEA emphasizes that in order to meet the criteria for SEA from UNESCO, the baseline needs to be described at the time of inscription.¹⁷ This means 2009 for the Dutch and German part of the Wadden Sea and 2014 for the Danish part. The NCEA agrees that using this baseline seems logical to assess to which extent the current state of the Wadden Sea still meets the criteria for which it was inscribed. However, the NCEA also points out that using the 2009/2014 baseline in data-driven approaches (see chapter 4.2 of this advice) to analyze the cumulative impacts towards 2050 is very difficult (given the possible lack of available data, different years of inscription and different jurisdictions). The NCEA advises to use the current situation for the cumulative impact analysis of the different scenarios towards 2050. This can then be supplemented with an analysis in broader terms of the trends and impacts (based as much as possible on available data) up until this baseline from inscription onwards. The NCEA also advises to discuss this with UNESCO and IUCN in order to ensure the baseline

¹⁶ The NCEA points out that there are many examples of data sources that can be used for the joint SEA. These include for trilateral data: the [Wadden Sea Quality Status Report](#), the [TrilaWatt project](#) and the upcoming reports by the [European Environment Agency \(EEA\)](#) 'Multiple Pressures II' and 'Marine Messages III' (both to be published on June 30th, 2026). For the national level, these include: for the Netherlands: [Monitoring data by Datahuis Wadden, publications by the Waddenacademie](#) (including [PhD theses about the Wadden Sea](#)) and <https://basismonitoringwadden.nl/datahuis/> [System reports by Deltares](#). The NCEA emphasizes that the examples in this list is only a suggestion as a starting point and should not be seen as a complete/exhaustive list. For the joint SEA a selection of appropriate databases and information needs to be made and substantiated.

¹⁷ This was (re)confirmed during the [47 COM 7](#) Decision (paragraph 25) and is also stated in the Guidance and Toolkit document by UNESCO.

is used that meets the criteria for cumulative impact analysis on OUV. Substantiate the chosen baseline in the SEA report.

The scoping report describes the inclusion of 'foreseeable' plans, programs and projects (see page 17). The NCEA advises to further operationalize this and streamline this between the three countries to prevent differences in the national components. For example, describe whether this includes only plans, programs and projects that have already been formally decided upon or if this also includes plans, programs and projects of which the decision-making process is still ongoing.

4.2 Approach and methods

Page 22 of the scoping report states: '*For the implementation of the joint SEA, analysis, forecasting and assessment techniques should be chosen for their efficiency, ensuring they achieve the objectives with minimal resources and personnel expenditure.*' The NCEA advises to add the aspect of 'quality' and 'appropriateness' to the selection of the analysis, forecasting and assessment techniques and the overall implementation of the joint SEA.

Assessment of cumulation

The scoping report defines cumulative effects (on page 15) as: '*the sum of past and present effects of implemented and planned activities, possibly in combination with other external pressures such as climate change.*' The NCEA points out that this definition does not refer to future effects, which is an essential element of the joint SEA.¹⁸

The scoping report refers to Lambrecht & Trautner (2007) and Uhl et al. (2018) for methods to be used to assess cumulative impacts. The NCEA acknowledges that these methods are a good foundation. However, Lambrecht & Trautner (2007) is developed specifically for the Natura 2000 context under the Habitats Directive and might not be fully applicable in the context of the joint SEA focused on OUV. The NCEA also points to the approach by Halpern et al. (2008)¹⁹, which is seen as a global standard for Cumulative Impact Analysis and has been applied in the Wadden Sea several times.

Assessment techniques

The scoping report describes on page 22 that the prediction, analysis and evaluation techniques for the assessment of cumulative impacts on the OUV of the Wadden Sea *may* include:

- 'expert judgment' (including informed stakeholders);
- risk-based analysis of cause-effect chains related to OUV;
- overlay or constraints maps;
- GIS applications;
- alternative future scenario analysis;
- multi-criteria analysis and evaluation.

¹⁸ For more information on cumulative impacts, see Bastmeijer et al. 2024. [Cumulative effects in the Wadden Sea Region](#) and Kraetzschmer et al. 2021. [UVP Practical Tip 02: Cumulative Effects: For Consideration in Strategic Environmental Assessment](#).

¹⁹ Halpern et al. 2008. [A Global Map of Human Impact on Marine Ecosystems](#).

The NCEA points out that there are different data-driven approaches that can be used for assessing the cumulative impacts on the OUV of the Wadden Sea. The above mentioned approach by Halpern et al. (2008) has been used by the HELCOM Spatial Pressure and Impact Assessment²⁰, Symphony²¹ and the European Economic Area. Other assessment methods include the ODEMM method adopted in ICES Ecosystem Overviews Technical Guidelines²², the cumulative effect assessment for OSPAR²³ and the Spatially explicit Cumulative Impact Assessment Method (SCAIRM)²⁴. Each assessment method has advantages and disadvantages.²⁵ The appropriateness of these assessment methods depends on the specific questions that the joint SEA aims to address (see chapter 3.1 of this advice). For example, for mapping (in hotspots) and ranking different cumulative pressures, an approach based on Halpern et al. (2008) is more suitable than SCAIRM. The NCEA advises applying one of the data-driven approaches that is most suitable for answering the questions addressed in the joint SEA. Substantiate the chosen approach in the joint SEA.

Role of climate change

The effects of climate change will be very important when assessing ‘cross-over’ cumulative impacts. The scoping report indicates that climate change will be included in the joint SEA as an external pressure. Climate change is already part of (some of) the aforementioned methods and techniques for assessing cumulative impacts. The NCEA emphasizes that climate change models often contain several different scenarios. Alignment is needed between the three countries which model/scenario is used in the joint SEA. One way to integrate this is to provide a bandwidth in the assessment based on the climate model. The NCEA advises to use the most recent IPCC scenarios as a starting point. These scenarios should be down-scaled from global to a regional and – as a last step – national or local scale. Alignment of the way this down-scaling is done is needed between the three countries to ensure coherent climate scenarios.²⁶

Focus on five key topics

In the scoping report, five key topics are identified based on the SIMP of which the cumulative impacts will be assessed. These five topics are: (1) fisheries; (2) tourism; (3) shipping/ports; (4) energy and (5) coastal protection. In addition, the interaction of these five topics with climate change effects will be included. The NCEA stresses that this focus will most likely result in lacunae of other activities with substantial (cumulative) impact, for example on nutrients and eutrophication, microplastics, thermal pollution, hazardous substances, ammunition and resource extraction (such as mud, sand and gravel). Other assessments

²⁰ See HELCOM. 2023a. [HELCOM Thematic assessment of spatial distribution of pressures and impacts 2016–2021](#) and HELCOM. 2023b. [State of the Baltic Sea. Third HELCOM holistic assessment 2016–2021](#).

²¹ See Wählstrom et al. 2020. [Bringing climate change into ecosystem based management of the sea: data and methods for the Symphony framework](#).

²² ODEMM stands for Options for Delivering Ecosystem-Based Marine Management. See ICES. 2023. [Working Group on Cumulative Effects Assessment Approaches in Management \(WGCEAM\)](#).

²³ See OSPAR. 2023. [OSPAR CEMP Guideline. Cumulative effects assessment for the QSR 2023 \(Bow Tie Analysis\)](#).

²⁴ See Piet et al. 2023. [SCAIRM: A spatial cumulative assessment of impact risk for management](#). This method was applied in the Dutch part of the Wadden Sea by Wageningen University and Research, see Piet et al. 2026. [Toekomstige ontwikkelingen in de Nederlandse Waddenzee: Een Cumulatieve Impact Analyse met SCAIRM](#). The NCEA emphasizes that the focus of this study was primarily on aquatic ecology and not on terrestrial systems, such as salt marshes and dunes. It also did not include tidal inlets between the islands and the North Sea coastal zone. For more information see also the [report by the Dutch Ecologische Autoriteit about the Wadden Sea](#).

²⁵ For an evaluation of the five mentioned cumulative impact assessment methods, see the [ICES Special Request Advice](#) from November 5th 2025.

²⁶ One possible data set is the data by the [Copernicus Marine Service](#).

include more types of pressures. For example, the MSFD assessments use 17 types of pressures based on available data. In addition, the Dutch Wadden Academy and the Dutch Central Bureau for Statistics used 238 indicators to assess the current state of the Dutch Wadden Sea based on existing data sets and current monitoring programs.

The NCEA advises to explain in the joint SEA how the five key topics were identified. Indicate how the focus on these five topics fully answers the request(s) by the WHC. Expand the focus if this is not the case. The NCEA advises to at least add the following topics to the assessment²⁷:

- agricultural and industrial activities in areas adjacent to the Wadden Sea, as well as other sources of water and air pollution;
- marine litter, including microplastics;
- invasive species;
- military activities and ammunition.

Selection of plans, programs and projects

The scoping report indicates that the joint SEA will make use of SEAs and EIAs that have been made in the past. The NCEA acknowledges that this is a good starting point, but emphasizes that these SEAs and EIAs may not have been drafted according to the standards and the methodology agreed upon for this joint SEA. For example, in the Netherlands, effects of past and existing activities usually are considered as being incorporated in the description of the current state against which the (cumulative) effects of the plan or project are assessed. They are not considered as aspects that should be taken into account in an analysis of the cumulative effects. The approach in Denmark and Germany on this issue is different. Similar discrepancies might occur in other aspects.

The NCEA also emphasizes that in the analysis of the conducted SEAs and EIAs, it needs to be taken into account that these reports:

- may not have focused specifically on all aspects of the OUV and might not have focused on all relevant cumulative impacts;
- (might) vary in quality. For the Dutch SEAs and EIAs, the advises by the NCEA on these reports should be included (if applicable) into the analysis. This will help in determining the quality of the information provided.

For some relevant human activities, there might not be an SEA or EIA available. This can be the case for activities for which the permits had already been given prior to the inscription on the World Heritage List or projects that had already been finished before 2009/2014 but of which the impacts are still occurring. Provide a reflection on these activities and include them in the assessment where needed.

The NCEA advises to keep the selection of plans, programs and projects manageable. This can be done by developing a priority-system. For example, a selection can be made for each key topic (the five identified ones in the SIMP and the additional ones mentioned above) based on the scale, severity of their impact and cause-effect relationships. In addition, overarching plans can be included in which a select few of the concrete projects are used as reference for the impacts associated. Justify the chosen priority-system in the joint SEA to make clear that choices have been made and why.

²⁷ The Nature NGO's Wadden Sea Team also asked to widen the scope of the activities that the joint SEA will focus on.

Wider setting

The NCEA acknowledges the difficulty to define a radius for topics in the 'wider setting'. The scoping report states correctly that the study area depends on the (external) effects of plans, programs and projects and, therefore, will differ depending on the kind of activity which is assessed. The suggested functional definition of the territorial scope is an adequate approach. However, the scoping report provides little guidance on how this functional definition can and will be concretized and should be applied. To avoid significant differences in the application of the functional definition, the process of defining the study area for the different activities in the three legal orders should be synchronized.

The NCEA advises to provide an overview and list of the subjects that fall in this category (wider setting) and to use a cartographic representation of the study area for each subject. This means aspects with impact on the Wadden Sea but with an origin outside the World Heritage site. Examples include:

- Impacts of river basins/discharge and national and regional water management policies and its effects on fresh water discharge to the Wadden Sea. The NCEA emphasizes that the Wadden Sea is more or less an estuarine system and this system needs a regular supply of fresh water. Large fluctuations in fresh water supply may have a considerable impact on the ecosystem.
- Tourism on the islands. The annual 'flow' of tourists to, for example, the island of Ameland is only possible due to large dredging efforts in the navigation channel. To illustrate this: 2 – 3 m³ of sediment has to be dredged and redistributed in the water system for every passenger crossing.
- Risks of container transport and cargo vessels. Container transport and other cargo vessels in the navigation channels of the North Sea form a risk for and potential impact on the Wadden Sea. An example is the disaster with MSC Zoe, where the ship lost more than 300 containers with hazardous cargo north of the Wadden islands.
- Multiple plans, programs and projects (such as dike reinforcement and energy-related projects) disturb resting and foraging areas and/or high-water refuge areas for birds (permanently or temporarily). Scientific literature shows that the resulting diversion of birds results in energy and time loss and, during very high water, competition and/or lack of space. This means that diversion to other refuge areas can result in increases in mortality and/or leaving the Wadden Sea area or shorting their stay.

Transboundary impacts

The scoping report indicates that transboundary impacts will be taken into account in the joint SEA. The NCEA emphasizes that this includes activities that are beyond the boundaries of the three involved countries. Examples of this are impacts on river basins and impacts from beyond national waters, such as international shipping lanes.

An example of a relevant transboundary aspect is the transfer of water and (suspended) sediment such as silt and clay (mud) over boundaries of tidal basins and countries with a major source in the southwestern North Sea and sinks in the trilateral Wadden Sea. Mud extraction is already implemented or being planned at various locations in the system. This mud is important for the ecological functioning of the system (for example in providing substrate and nutrients). It also plays an important role in deposition to compensate sea level rise. The joint SEA has to provide an assessment of the (potential) effects of mud extraction on the ecological and sedimentological system of the Wadden Sea.

The NCEA advises to use a clear physical–morphological definition for sediment (mud) extraction. If the sediment is taken out of the system of the Wadden Sea and used for building material or the elevation of agricultural land, there will be a structural loss of sediment for the Wadden Sea system. However, different parties have different opinions about the definition of extraction. Some (harbor) authorities use dredged material for purposes outside the Wadden Sea system and justify this because the harbor is not part of the Natura 2000 regime, so in their view not part of “the system”.

4.3 Other natural and conservation values

The scoping report lists eight other natural and conservation values that are closely linked to the OUV of the Wadden Sea and will be taken into account in the joint SEA. These values are: (1) scenic beauty, (2) landscape and cultural heritage, (3) silence, (4) air quality, (5) water quality, (6) darkness, (7) recreational values and (8) climate change mitigation potential. The NCEA agrees that these values are important to include. Several of these values are strongly connected (often indirectly) to the OUV of the Wadden Sea, such as silence, landscape, air quality, water quality and darkness, which are important aspects for biodiversity and/or the functioning of the tidal system at large.

For several of the ‘other’ values there is sufficient quantitative data that can be used in the joint SEA. This is the case for air quality, water quality and darkness. Archeology (such as shipwrecks) and built monuments are also often well documented. The NCEA advises to focus on thermal pollution, chemical pollutants and microplastics for the value of water quality. The NCEA also advises to add water quantity to this list with a specific focus on water dynamics. The amount of fresh water is important for (1) the supply of nutrients (like algae) and the food web of the Wadden Sea; (2) attracting migratory fish; and (3) mixing with salt water, creating brackish habitats.

For some values, a quantitative approach is either very difficult or even unwanted given the nature of these values. This includes scenic beauty, landscape, certain heritage aspects (especially intangible heritage) and recreational value. The NCEA advises to assess these values and the (cumulative) impacts on them through expert judgment in combination with stakeholder engagement, such as research on perceptions of these values by local inhabitants and visitors.

5 Other topics

5.1 Knowledge gaps and monitoring

Knowledge gaps

The joint SEA must identify environmental aspects for which the assessed impacts are (highly) uncertain or for which insufficient data is available. Focus the discussion on environmental aspects that play a significant role in subsequent decision–making, so that the consequences

of the shortcoming can be assessed. Indicate whether and how important missing information can be filled in quickly.

Monitoring

The NCEA emphasizes that monitoring of the human pressures on the OUV of the Wadden Sea is essential and clear ownership of this needs to be established. This is an iterative process in which monitoring results can form the foundation for further research, mitigation measures and changes to policies and plans. The NCEA advises to update the monitoring every five years, for example in preparation for the State of Conservation reports. Make use of existing data and monitoring programs where possible. Look at trends and combine data to make the monitoring useful to reach specific goals and to learn lessons.

One way to implement this could be to develop the joint SEA into a so-called 'developing' or 'continuous' SEA. This means to periodically update the joint SEA by adding new plans, programs and projects and by integrating monitoring data. The joint SEA can then be used as a source of baseline information for SEAs and EIAs of future plans, programs and projects. This can improve and fasten the assessment processes in the three countries. Further alignment is needed between the three countries on a national and sub-national level on how this could be implemented and who conducts the monitoring.

5.2 Summary and readability

The summary is the part of the joint SEA that is primarily read by decision-makers and stakeholders. It therefore deserves special attention. The summary must be readable as a standalone document and accurately reflect the content of the joint SEA. It should include the most important aspects, such as:

- a description of the OUV and other values taken into account, and the state of these values;
- the plans, programs and projects included in the assessment;
- the assessment methods and techniques;
- the scenarios;
- the (cumulative) impacts on the OUV and the other values taken into account of these scenarios, including knowledge gaps;
- the comparison of the scenarios.

Readability

Readability of the joint SEA is increased by using clear tables, figures and maps. Ensure:

- an SEA that is as concise as possible by including background information in appendixes rather than in the main text;
- a glossary, a list of abbreviations, and a bibliography;
- up-to-date, easy-to-read maps with a clear legend.

ANNEX 1: Project data

Review by the NCEA

The Netherlands Commission for Environmental Assessment (NCEA) is an independent foundation, established by Dutch law, that is tasked with advising on the content and quality of impact assessment reports. It appoints a working group of independent experts for each project. This working group indicates which topics should be addressed in the Strategic Environmental Assessment (SEA) and to what level of detail. More information about the [NCEA](#) and its [working methods](#) can be found on our website (in Dutch).

Composition of the working group

dr. Jesper Harbo Andersen
prof. dr. Chris Backes
prof. dr. Marie Luise Hanusch
prof. dr. Piet Hoekstra
dr. Ulf Kjellerup Hansen
dr. Patrick Patiwael (technical secretary, pen holder)
prof. prof. h.c. dr. Ursula Siebert
ir. Kees Slingerland (chair)

Why is a strategic environmental assessment being prepared?

During the 45th World Heritage Committee (WHC) Meeting in 2023, the WHC expressed concerns about the cumulative impacts of the plans, programs and projects in and surrounding the Wadden Sea on the Outstanding Universal Value (OUV) of the Wadden Sea World Heritage site. The WHC therefore requested the State Parties (Denmark, Germany and the Netherlands) to make a joint Strategic Environmental Assessment (SEA) in which these cumulative impacts are addressed. The Trilateral Wadden Sea Cooperation committed itself to the preparation of this joint SEA. The Common Wadden Sea Secretariat is the coordinator of the joint SEA procedure.

Due to the nature of the request by the WHC, there is no specific plan, program or project connected to the joint SEA. This means that the joint SEA is not made based on the European SEA Directive (Directive 2001/42/EC). However, this Directive is used as the common legal ground for the joint SEA.

Did the NCEA take public consultation into account in its advisory report?

The draft scoping report of the joint SEA underwent trilateral and national consultation. This consultation was limited to national/federal governments (including the involved German federal states, the Bundesländer) and NGOs from the three State Parties. The NCEA received the reactions from this consultation and incorporated them into the advisory report where relevant.

Where can I find the documents assessed by the NCEA?

The project documents on which the advisory report is based can be accessed by entering project number [3986](#) in the search field at www.commissiemer.nl (website in Dutch).

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