

# Particularly Sensitive Sea Area (PSSA) – Wadden Sea Feasibility Study

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At the Stade Conference 1997, the Wadden Sea Ministers endorsed a study on the possibilities for a proposal to the IMO to designate the Wadden Sea and an adjacent zone as Particularly Sensitive Sea Area (PSSA) (§ 25 Stade Declaration). The PSSA feasibility study has been prepared by the Marine Research Center, Southampton Institute, UK and submitted to the Trilateral Cooperation in May/July 2001 in the preparation of the Esbjerg-II-Conference on October 31, 2001. The main results of the study are summarized below.

## Significance and Vulnerability of the Wadden Sea

The Wadden Sea is an exceptional, highly dynamic tidal ecosystem of world importance. Biophysically it represents an interconnected morphological system with the adjacent North Sea, significant in terms of unique ecological, socio-economic, scientific and cultural characteristics. Wadden Sea characteristics of particular significance include biomass productivity, habitats and species, spawning and breeding grounds, tourism and recreational activities, shipping, fisheries, scientific research and cultural heritage. Together these constitute a unique resource, worthy of the highest order of conservation, use management and stewardship.

Environmental protection of the Wadden Sea is perceived as a trilateral Governmental responsibility. It is currently achieved by national and international environmental protection legislation and designation; regulation of maritime and terrestrial activities; and a high level of coordinated management. The Wadden Sea Conservation Area has been recommended for nomination as a World Heritage Site, subject to a consultation process

Nevertheless, the integrity of the Wadden Sea remains vulnerable to the impact of international maritime activities. This is the case both in terms of the volume of maritime traffic using the southern North Sea and given that the Wadden Sea naturally functions as an importing system with a water circulation that contains contaminants in a zone a few dozen kilometers wide along the coast. Evidence suggests that the Wadden Sea

coast is adversely affected by operational marine pollution as well as being vulnerable to accidental pollution impacts. Furthermore, the most likely origin of such pollution is the adjacent North Sea, which is one of the most frequented sea areas worldwide. A large oil or chemical spill would have potentially disastrous and long-term effects on the Wadden Sea ecosystem. Any such incident would also be difficult and costly to remediate.

## Wadden Sea Eligibility for PSSA Designation

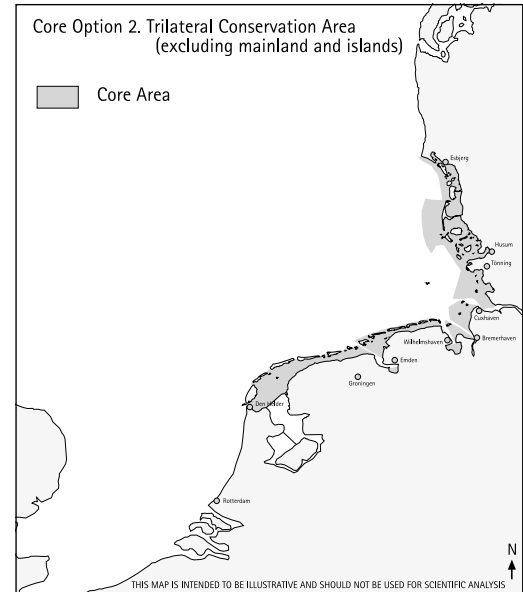
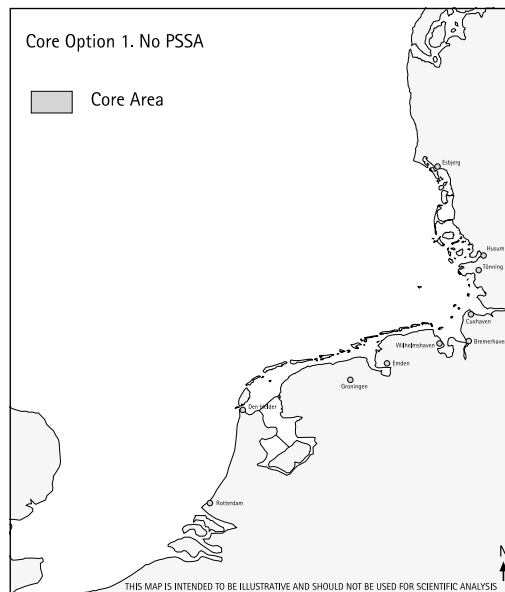
The Wadden Sea and an adjacent zone of the North Sea qualifies for Particularly Sensitive Sea Area (PSSA) status under the IMO criteria expressed in A.720(17) amended by A.885(21). It also qualifies under new guidelines, which have been approved in principle by the Marine Environmental Protection Committee. Although the IMO Guidelines require that the area need qualify for identification as a PSSA under only one of the categories of criteria, the Wadden Sea is significant for socio-economic, and scientific, and arguably for full ecological reasons as well.

In particular this study suggests that the Wadden Sea qualifies as a PSSA on the basis of ecological uniqueness, critical habitat, dependency, productivity, spawning and breeding grounds, ecological vulnerability and economic benefit, recreation human dependency, research, baseline and monitoring studies, and education. These criteria relate to PSSAs within and beyond the limits of the territorial sea but may also be used by national administrations to identify PSSAs within their territorial seas.

The overriding benefit of the Australian PSSA designation, which has now been in place for 10 years, is stated to be the recognition of the area by the IMO, enabling Australia to gain acceptance of some management measures by the IMO that might otherwise have been rejected. An analysis of trilateral Wadden Sea discussions over the period 1994–2000 highlighted initial conflict with application for MARPOL 73/78 Special Area status for the North Sea and concerns that the identification of a Wadden Sea PSSA would lead to limitations for shipping and activities in harbors.

Figure 1 (left): Core option 1. No PSSA because there is not a 100% agreement on the value of a PSSA. It requires no change to current maritime activities or management.

Figure 2 (right): Core option 2 (Conservation Area) focuses on the existing area of agreed conservation value. The boundaries are coincident with the marine part of the Wadden Sea Conservation Area and also include the Whale Protection Area.



## Benefits and Burdens

An analysis of stakeholder views drawn from a questionnaire survey has confirmed that the concept of a Wadden Sea PSSA continues to be contentious. However, the weight of subjective opinion was in favour of a PSSA application, and the draft IMO Assembly resolution confirms that a PSSA may be identified within a Special Area and that the criteria with respect to the identification of PSSAs and Special Areas are not mutually exclusive.

The principal benefits of a Wadden Sea PSSA designation are perceived by stakeholders to be:

- Heightened international awareness of environmental value
- Introduction of additional measures to minimize potential environmental damage
- Recognition of local priorities by international interests

The principal burdens are perceived by stakeholders to be:

- Additional costs for commercial interests
- Confusion between navigational safety and environmental protection on charts
- Policing and monitoring responsibilities

It is argued that, on balance, the benefits of Wadden Sea PSSA designation outweigh the burdens. An overriding benefit is considered to be the message that PSSA designation sends out internationally as to the irreplaceable environmental value of the Wadden Sea. It has the potential to provide an incentive for better found ships and their management together with a disincentive to sub-standard shipping in line with the 'polluter pays principle'. It is also considered that PSSA designation

would heighten awareness of enforcement agencies and the judiciary. The PSSA concept recognizes the competence of existing as well as any proposed additional risk management and reduction measures. The criteria also reflect the full range of economic activities associated with the Wadden Sea Area. Furthermore the costs associated with designation and implementation, depending on the associated protective measures involved, are modest.

## Adequacy of Existing Measures

In addition to meeting at least one of the ecological, socio-economic or scientific criteria for the identification of a PSSA, IMO guidelines call for consideration of a combination of vessel traffic characteristics and natural factors. In both these areas it can be demonstrated that the Wadden Sea Area is at risk from international shipping. A combination of the exceptional density of commercial shipping, the presence of fishing vessels and recreational craft, and the quantity of harmful substances carried result in the heightened probability of a pollution incident. This is combined with the changing nature of shoals and banks that extend well offshore, numerous wrecks, frequent poor visibility and onshore gales. Proposed offshore wind farms, high speed ships and Wadden Sea port expansion plans will exacerbate the situation.

Subject to questions of risk acceptability, the evidence suggests that significant measures are in place to help ensure the safety of shipping and to integrate shipping and other activities in the Wadden Sea and adjacent North Sea. Prospective

future international measures, regional agreements and local initiatives (harmonization) are set to further improve this situation.

The potential benefits and costs of introducing any additional associated protective measures to regulate international shipping activities, associated with PSSA designation, are disputed by stakeholders. It is argued, however, that since the benefits to the environment are largely unquantifiable, the principal determinant of which measures should be considered is the benefit to shipping safety against the cost of implementation. Further consideration of a limited package of additional measures, which would need trigovernmental agreement, is proposed.

Three associated protective measures, within the purview of IMO, are considered particularly appropriate. A vessel traffic management system (VTMS) for the Wadden Sea would entail implementation and operational costs for government; the cost of mandatory reporting for certain vessels is deemed to be negligible; and compulsory pilotage for certain vessels would pass additional costs onto the international shipping community. None of these measures would necessarily serve to reduce the competitiveness of the Wadden Sea ports to any great extent; they would all reduce the risk to the Wadden Sea environment posed by international shipping; and they all complement and enhance existing national and international protective measures as well as prospective future international measures. However, a detailed cost benefit risk assessment would need to be carried out before any such measures could be formally proposed.

## Delimitation of a Wadden Sea PSSA

The pros and cons of a series of boundary delimitation options for a Wadden Sea PSSA designation have been evaluated. These have taken into account existing levels of protection, vulnerability, stakeholder views on benefits and burdens and the need to protect higher risk areas. Boundary considerations were further informed by a Clarification and Consensus meeting of a limited number of mainly German stakeholders in Hamburg on 4<sup>th</sup> April, 2001. A matrix of core and buffer areas is presented (Fig. 1 - 4). However, the decision as to what is an acceptable environmental risk, and therefore the delimitation of a PSSA, is ultimately a political one.

A case is made for defining the Wadden Sea Conservation Area as the PSSA core area, with a buffer zone contiguous to core area extending offshore to include areas of hazard. The extent of the recommended buffer zone (Fig. 5) is also partly determined by the prevailing direction of wind and currents, that combine to send any accidental or operational pollutants in the direction of the most environmentally significant parts of the Wadden Sea resource. It is argued that any additional associated protective measures are generally appropriate for the buffer zone rather than the core area, the latter being well served by existing measures.

Although several of the combinations have merit, it is the view of the research team that a core consisting of the Wadden Sea Conservation Area (Core Option 2) and a buffer consisting of the Risk Area (Buffer Option 3) presents the most viable and justifiable combination.

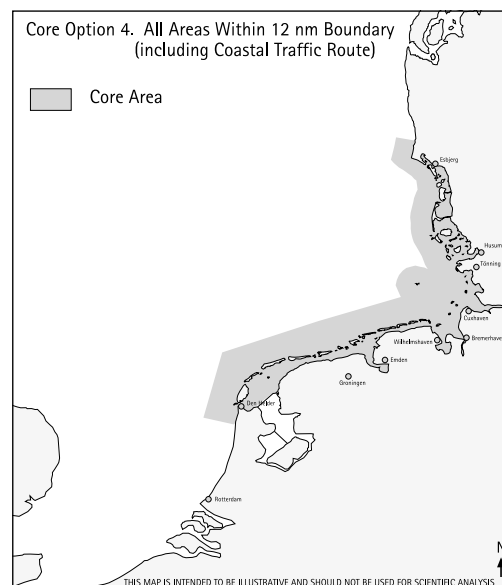
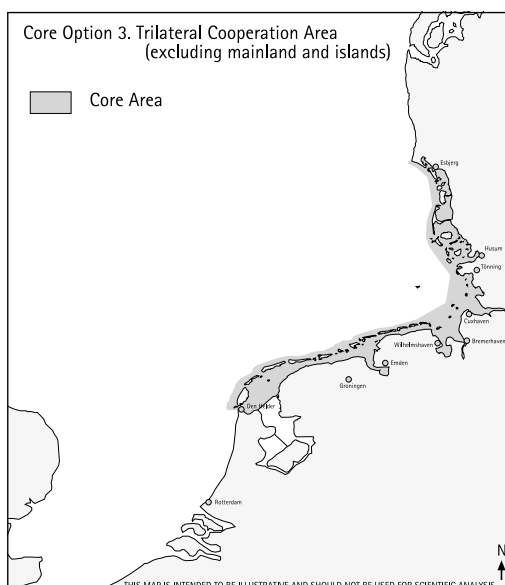
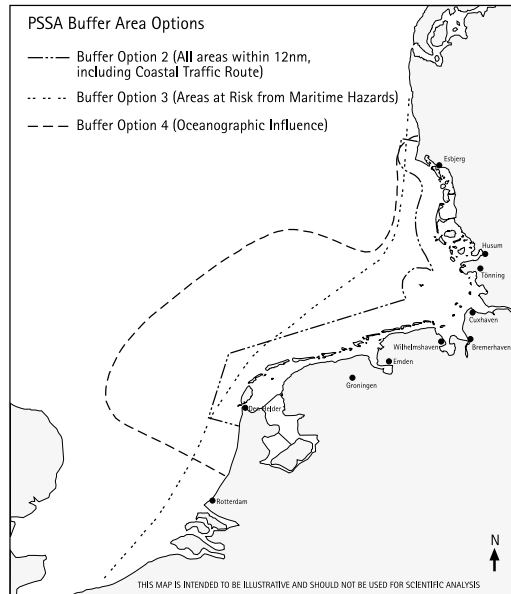


Figure 3 (left): Core option 3 is coincident with the boundary of the marine part of the Trilateral Cooperation Area. It is suggested as an option as it includes a larger area of environmental value and extends further seaward than the previous options to include part of the Inshore Traffic Zone.

Figure 4 (right): Core option 4 includes a greater area of environmental importance as well as a greater area of maritime hazard. The 12 nautical mile presents a manageable and appropriate zone.

**Figure 5:** Buffer options are possible delimitations of areas contiguous to the core areas that would contribute to the adequate protection of the core options (Buffer option 1 is no buffer and requires no change of current maritime activities or management).



## Recommendations

The principal recommendation of this feasibility study is therefore that an application for PSSA designation, based on these findings and containing those associated protective measures confirmed as advantageous and achievable, should be made to IMO. An application for Wadden Sea PSSA designation could go forward on the basis of no additional associated protective measures. However, as stated earlier, the preferred option suggested by this feasibility study includes consideration of additional associated protective measures. If an application is put forward on this basis, associated protective measures either need to be agreed in advance of an application (and thus the reasons why the proposed associated protective measures are the preferred method for providing

protection for the area to be identified as a PSSA must be explained) or a proposal for at least one protective measure must be submitted within two years of the approval in principle of the PSSA.

It is also recommended that research is commissioned to quantify operational pollution throughout the Wadden Sea Area. Such information would provide a basis on which to determine the effectiveness of protective measures and their enforcement.

Finally it is recommended that any action taken to progress a PSSA application should take account of the need for wider understanding and acceptance of the concept. Any such initiative should be targeted at decision-makers and regulators; the international shipping community; and the local Wadden Sea population.

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The full report can be ordered at the Common Wadden Sea Secretariat or be downloaded as PDF file from the website of the secretariat.

