

<b>Institution: Southampton Solent University</b>
<b>Unit of Assessment: Uoa15 – General Engineering</b>
<b>Title of case study: An Evaluation of the Wadden Sea Particularly Sensitive Sea Area</b>
<p><b>1. Summary of the impact</b></p> <p>A Particularly Sensitive Sea Area (PSSA) is defined by the International Maritime Organisation (IMO), as requiring special protection due to its vulnerability to damage from maritime activities and for ecological, socio-economic or scientific significance.</p> <p>The Wadden Sea, in the North Sea, is a dynamic tidal ecosystem and a significant nursery area for commercial fisheries. It is adjacent to one of the world's busiest shipping lanes. It was designated a PSSA following a feasibility study conducted by Southampton Solent University (SSU). SSU later conducted an evaluation of its effectiveness and the report informed the Ministerial Council as the Sylt Declaration.</p>
<p><b>2. Underpinning research</b></p> <p>The maritime environmental research team conducted the evaluation work during 2009 and submitted the final report in January 2010. This report built on previous work carried out by SSU for the Common Wadden Sea Secretariat, which was a feasibility study on the efficacy of designating the area as a PSSA</p> <p>The evaluation study involved:</p> <ul style="list-style-type: none"> <li>• A review of shipping-related regulations and policy, focussing on the key changes with respect to both IMO and the European Union since the designation of the PSSA.</li> <li>• An expert focus group of relevant individuals and stakeholder representatives provided their views on the development and function of PSSAs;</li> <li>• This work provided a context for the specific evaluation of the Wadden Sea PSSA and was used to inform the development of an evaluative framework.</li> </ul> <p>The framework was based on a pressure-state-response approach that necessitated identifying specific and relevant indicators for each of these three areas. Pressure indicators included the number of shipping incidents and the number of reported oil spills; state indicators included TBT levels and the number of invasive species, and response indicators included the development of Associated Protective Measures (APMs) and the level of co-ordination between states.</p> <p>Existing data and risk analyses were used. Whilst there was an extensive range of data available, there was also a lack of coherence within the data, and the sharing of data was found to be limited between the trilateral nations. Available data was plotted onto a GIS model, demonstrating that the inner traffic separation scheme and approaches to the Elbe experience a higher level of incidences than desirable. Stakeholder knowledge and understanding of the function and purpose of PSSAs was obtained through the use of a questionnaire. The survey indicated that the awareness and knowledge of PSSAs, particularly their function and location, was poor or very limited.</p> <p>The key finding of the evaluation was that there was insufficient evidence to support the view that the PSSA designation had been responsible for either an improvement or deterioration in the</p>

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quality of the environment of the Wadden Sea. The following recommendations were made:

1. The current PSSA designated area should be extended to include the inner traffic separation scheme and approach channels to the ports.
2. Extended co-operation and collaboration between the CWSS, DenGerNeth and Bonn Agreement should enable a more effective management approach to be adopted.
3. Collection, interpretation and sharing of environmental and ecological data should be co-ordinated to enable a more cohesive and effective monitoring programme.
4. A central shipping incident reporting database should be developed specifically for the Wadden Sea PSSA.
5. There should be a concerted effort amongst all states to raise the level of awareness and education about the PSSA to all stakeholders, including mariners.
6. The development of a TSS along the shipping corridor from the Weser/Elbe into the Danish sector should be considered.

### 3. References to the research

R1 Gallagher, A., Butt, N., Thatcher, K., and Vigar, N. and Wright, P., (2010) Evaluation of the Wadden Sea Particularly Sensitive Sea Area (PSSA). Common Wadden Sea Secretariat. Wilhelmshaven: Germany [online]. Available from:

<http://www.waddensea-secretariat.org/management/shipping-particularly-sensitive-sea-area-pssa>

R2 Butt, N. (2010). Is compliance enough? The gap between training and education. Sustainable Ocean Summit: Session 11. Environmental education and training for marine professionals. World Ocean Congress. [online]. Available from:

<http://www.oceancouncil.org/site/pdfs/11%20Mariner%20Education%203-Butt.pdf>

R3 Task Group Shipping/ Common Wadden Sea Secretariat (2011) Particularly Sensitive Sea Area (PSSA) Wadden Sea: Towards a Vision for the Wadden Sea PSSA. Trilateral Workshop on the Wadden Sea PSSA. [online] Available from: [http://www.waddensea-secretariat.org/sites/default/files/downloads/report\\_pssa\\_workshop\\_11-09-07\\_final-clean.pdf](http://www.waddensea-secretariat.org/sites/default/files/downloads/report_pssa_workshop_11-09-07_final-clean.pdf)

### 4. Details of the impact

The final evaluation report was disseminated through the CWSS and formed the basis for considering shipping and safety in the Wadden Sea during the Trilateral Government Conference on the Protection of the Wadden Sea at Sylt. The research findings were considered by Ministers from Germany, Denmark and the Netherlands and informed the resulting Ministerial Council Declaration, known as The Sylt Declaration.

The Declaration agreed to address issues identified within the SSU recommendations, with the exception of those pertaining to extending the PSSA (Recommendations 1 and 6). It instructed the Wadden Sea Board, to progress implementation of the recommendations with the relevant authorities and to develop a vision on the impact of shipping and ship's safety on the Wadden Sea PSSA. The resulting appointment of a Shipping Task Group by the Wadden Sea Board represents

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a major impact of the research, since for the first time participants from the Waterways and Shipping Directorate North-West and North were to be included. The Task Group organized, in cooperation with the CWSS, a workshop to present the PSSA evaluation study and discuss the results with representatives from national competent authorities and key stakeholders.

This Trilateral Workshop, 'Particularly Sensitive Sea Area (PSSA) Wadden Sea: Towards a Vision for the Wadden Sea PSSA' took place in Hamburg in May 2011, with 34 delegates representing the competent authorities in the fields of maritime shipping and nature conservation, maritime shipping companies, harbour authorities, nature conservation organizations and recreational boating. Members of the maritime research team presented their findings and the Evaluation Report was published on the Task Group website. The meeting agreed that awareness enhancing and data alignment of shipping and environment were priority areas, and these are currently being progressed. The development of a 'Vision' for the Wadden Sea PSSA as a first step..

In addition to the impact of the research and subsequent developments with regard to the Wadden Sea, the research results have had wider dissemination and fed into the broader context of seafarer awareness. Research team member Nickie Butt presented the findings relating to education and training at the World Ocean Council, Sustainable Ocean Summit in Belfast in June 2010. .

### 5. Sources to corroborate the impact

#### **Reports:**

C1 Common Wadden Sea Secretariat, 2010. Sylt Declaration. Ministerial Council Declaration of the Eleventh Trilateral Governmental Conference on the Protection of the Wadden Sea. Common Wadden Sea Secretariat, Wilhelmshaven, Germany [online]. Available from: <http://www.waddensea-secretariat.org/sites/default/files/downloads/sylt-md-complete-final-11-02-08-web.pdf>

C2 Enemark, J. (2005) The Wadden Sea protection and management – towards an integrated coastal management approach. *Ocean and Coastal Management*, 48, 996-1015

C3 Johnson, D., Lewey, S., Park, P., Hoar, J., Pourzanjani, M., Fletcher, S., and Tarver, S. (2001) *Particularly Sensitive Sea Area (PSSA), Wadden Sea Feasibility Study: Advice to the Trilateral Wadden Sea Cooperation*. Common Wadden Sea Secretariat. Wilhelmshaven: Germany [online] Available from: <http://www.waddensea-secretariat.org/management/shipping-particularly-sensitive-sea-area-pssa>

#### **Individual users:**

1. Jens Enemark: Secretary, Head of the Common Wadden Sea Secretariat
2. Professor David Johnson: Seascope Consultants (Formerly Executive Secretary, OSPAR Commission)
3. Lindy S. Johnson: Attorney-Advisor International Law, National Oceanographic and Atmospheric Administration (NOAA)
4. Dr Simon Walmsley: Marine Manager, WWF International

**Trilateral Government representatives and Ministers:**

1. Federal Republic of Germany: Ursula Heinen-Esser, Parliamentary State Secretary
2. Federal Republic of Germany: Dr Bernd Scherer, Deputy Director General, Ministry of Agriculture, Environment and Rural Areas, Schleswig-Holstein.
3. Kingdom of Denmark :Karen Ellemann, Minister for the Environment
4. Kingdom of Netherlands: Gerda Verburg, Minister of Agriculture, Nature and Food Quality