ANNEXES
to
EVALUATION of TMAP DATA HANDLING
for
THE TRILATERAL WADDEN SEA COOPERATION

Prepared by

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ANNEX 1: PERSONS CONTACTED

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Dr Sylvia Schikhof	Ministry of Traffic and Water Management, Den Haag	(email)

ANNEX 2: REFERENCE DOCUMENTS

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- April 2002 (02-1)
- September 2002 (02-2)
- March 2003 (03-1)
- October 2003 (03-2)
- March 2004 (04-1)

TMAG minutes:

- 2002/1
- 2002/2
- 2002/3
- 2003/1
- 2003/2
- 2003/3
- 2004/1

QSR Management Team Minutes 2004-1

Newsletters:

- #27 2002-2
- #28 2003-1
- #29 2003-2

ANNEX 3: TOP-DOWN ANALYSIS OF MANDATE FOR TMAP DATA HANDLING

Date	Document/Decision	Relevant Text	Implications for TMAP Data Handling
1982	Joint Declaration on the Protection of the Wadden Sea	"recognizing their responsibilities for the conservation of the ecosystem and their biological values of this region and its components as well as natural beauty" "to consult with each other in order to coordinate their activities and measures to implement … legal instruments with regard to the comprehensive protection of the Wadden Sea region as a whole including its fauna (marine terrestrial and avian) and flora with special emphasis on … seals and waterfowl" "to this end to intensify and broaden contacts, … results of consultations will be examined and, … decided upon at Dutch-German-Danish meetings on governmental level…"	Establishes future cooperation and consultation Implies need for collecting data on biological values
1988	5th Trilateral Governmental Conference	"To continuously evaluate the ecological state of the Wadden Sea as a whole in order to be able to decide on relevant trilateral policy measures"	Establishes need to measure ecological state
1991	6th Trilateral Governmental Conference	"To cooperate in scientific research and monitoring with respect to the Wadden Sea by: - elaborating a harmonized program of studies on items of special interest and in particular with respect to the common protection of the area; - welcoming the recommendations of the working group on the development of a common Wadden Sea Monitoring Program and instructing the Trilateral Working Group (TWG) to further implement the Program in accordance with the terms of reference as elaborated by the Trilateral Working Group; - designating sufficiently large areas, spread evenly over the Wadden Sea, where all exploitation and all disturbing activities are banned and which can serve as reference areas for scientific purposes; - cooperating in the evaluation and publication of the results of all international waterfowl counts …"	Establishes need for monitoring programme Identifies need for harmonisation First identification of specific needs for data – "bird counts"
1993	Integrated Monitoring System of the Wadden Sea Ecosystem (TMEG Report)	Integrated Monitoring Program for the Wadden Sea Ecosystem	Following the above, defines the concept of an integrated programme, requiring harmonisation and similar activities in each country Concluded that preferable option for trilateral data handling is a decentralised approach

Date	Document/Decision	Relevant Text	Implications for TMAP Data Handling
1994	7th Trilateral Governmental Conference	Principles and outline of joint monitoring programme and associated data management- concept adopted. "Being aware that the Trilateral Integrated Monitoring Program of the Wadden Sea Ecosystem, which was elaborated following the decisions of the Esbjerg Declaration, started in January 1994 to take the following steps:…" "To note with satisfaction the start of the implementation of the Integrated Monitoring and Assessment Program of the Wadden Sea Ecosystem." "To carry out an overall evaluation of the program in 1997 and to decide on the basis of this evaluation about further steps concerning the further development of the program (including the program of ecological research concomitant with the monitoring program) and the development of the program in order to be able to assess the progress made in realizing the targets; - the organization of processing the trilateral data; – established Ecological Targets (Annex 1)"	Established need for a data management system to accompany the monitoring programme Established ecological targets based on priority issues – hence a basis for identifying what variables should be measured.
1996	Final report of Definition Phase of DEMOWAD	"a) Networking provides connections to different data locations and allows interactive communication and data transfer. To keep the system open for further development the Internet with its extensive different network services was chosen. b) A data catalogue system, which is an integrated part of the commonly structured trilateral database, gives an overview of available data and its processing state at each TMAP data location. c) The trilateral database itself covers a harmonized and standardized data exchange format, which allows simple distribution and comparison of data from different sites."	Confirmed concept of decentralised data units. Confirmed concept of common data catalogue and standardized exchange (output) format for data
1997	8th Trilateral Governmental Conference Stade Declaration - Trilateral Wadden Sea Plan	Common Package of 28 TMAP parameters defined "The Ministers AGREE to adopt the Wadden Sea Plan in Annex I, elaborated in accordance with the Leeuwarden Declaration, entailing the common policies, measures, projects and actions of the countries for their joint efforts to fulfill the Targets."	Identifies parameters to be measured and hence held in the data management system. This was based on considerable scientific analysis of the minimum data required to support assessment of the Targets.

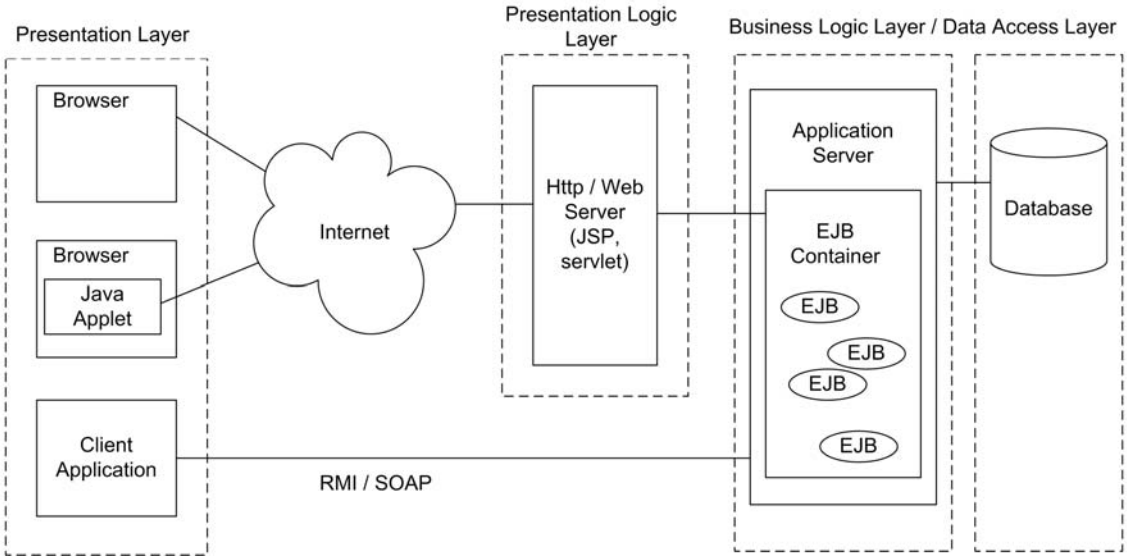
Date	Document/Decision	Relevant Text	Implications for TMAP Data Handling
1997	TMAP Implementation Plan	"A redefinition of the Terms of Reference of the TMAG is necessary taking into account that the TMAG is a coordination and supervision body at the meta level. This should also be reflected in the membership in the TMAG. As a consequence the TMAP should delegate tasks to the expert level as much as possible. This in turn implies that sufficient expertise must be made available at the national expert level, i.e. participation in expert workshops and ad-hoc expert groups and contributions to the assessment work."	Associated implementation plan that recognizes need to delegate to tasks to expert level
2001	9th Trilateral Governmental Conference - Esbjerg Declaration	"to reiterate their commitment that having trilateral data on the Wadden Sea stands at the core of the trilateral cooperation , and therefore to finalize the work on the Common Package by implementing the remaining parameters of the TMAP Common Package and establishing an operational data handling system by the end of 2002". "To further optimize the TMAP for future requirements in particular with regard to the Targets, the EU habitats Directive and the EU water framework directive"	Strengthens need for data "core" of Trilateral Cooperation, and for "operational" data handling system Introduced need for TMAP to also address EU Habitats and Water Framework Directive
2001	TMAP Evaluation Report	Recommendations "- To implement five priority projects to meet the requirements of the Wadden Sea Plan Targets - To instruct the TMAG to investigate possibilities to further improve the TMAP Common Package with regard to the Targets and the EU Habitat Directive - To maintain and continue the existing TMAP work structure. - To employ data handling persons at each national database (at least part-time, depending on the individual data unit) and a data handling coordinator at the CWSS (full-time) on a longterm basis. - To agree that it is necessary to develop a TMAP information system to make the TMAP results easier and faster available to relevant authorities, interest groups and local citizens and to instruct the TMAG to investigate the possibility to develop such a system entailing a comprehensive assessment and publication procedure."	Need for national data units and central CWSS coordination. Establishes need to make TMAP data available more widely
2002	TMAP Data Handling Manual	Continuously updated – includes objectives and guidelines	Establishes scope and level of harmonisation

ANNEX 4: CONSIDERATIONS FOR FUTURE TECHNICAL DEVELOPMENT

This Annex summarises some ideas that were discussed as this report was being compiled and which may be of interest in considering future technical development paths.

A. Re System Architecture

It would be useful to revisit the overall system architecture of TMAP system and split out the layers as shown in Figure 1 below: Presentation Layer, Presentation Logic Layer, Business Logic Layer and Data Access Layer.



EJB: Enterprise Java Beans
JSP: Java Server Pages
SOAP: Simple Object Application Protocol
RMI: Remote Method Invocation

Figure 1: Layers in System Architecture

With the advances in browsers over the last few years, the Presentation Layer can today be made to show all of the functionality that was originally built into the Java applet. The Presentation Logic Layer would take care of building the HTML stream and send that stream back to the browser. All of the dynamic data retrieval required to build the HTML page would be performed within the Business Logic Layer, using the Data Access Layer to pull data from the TMAP database.

The use of JSPs and servlets in the Presentation Logic Layer can take advantage of the Java code already developed for the TMAP applet. Frameworks like Cocoon or Velocity or Struts, which are add-ins to a web server, support templates and make it easy to change the presentation layer.

The Presentation Logic Layer can be centralized within the Secretariat web server and provide one common point of access for all TMAP data units. Accessing the other TMAP data units can be done by business logic within the Secretariat server that contacts the other TMAP data unit servers and retrieves the required data from the other server.

Centralizing the Presentation Logic also means changes can be made, and implemented, in one place avoiding the requirement to make changes in each Data Unit. Any update is immediately available when a user accesses that web page through their browser.

Another current method of implementing the Presentation Layer in a browser client, is to define the output page in XML. Once all the elements of a screen are defined in XML, the final screen layout of the elements can be determined by using the Extensible Stylesheet Language

Transformation (XSLT). This transformation will take the XML input and convert it to an HTML stream that can be delivered to the end-user's browser, as shown in the following diagram (Figure 2).

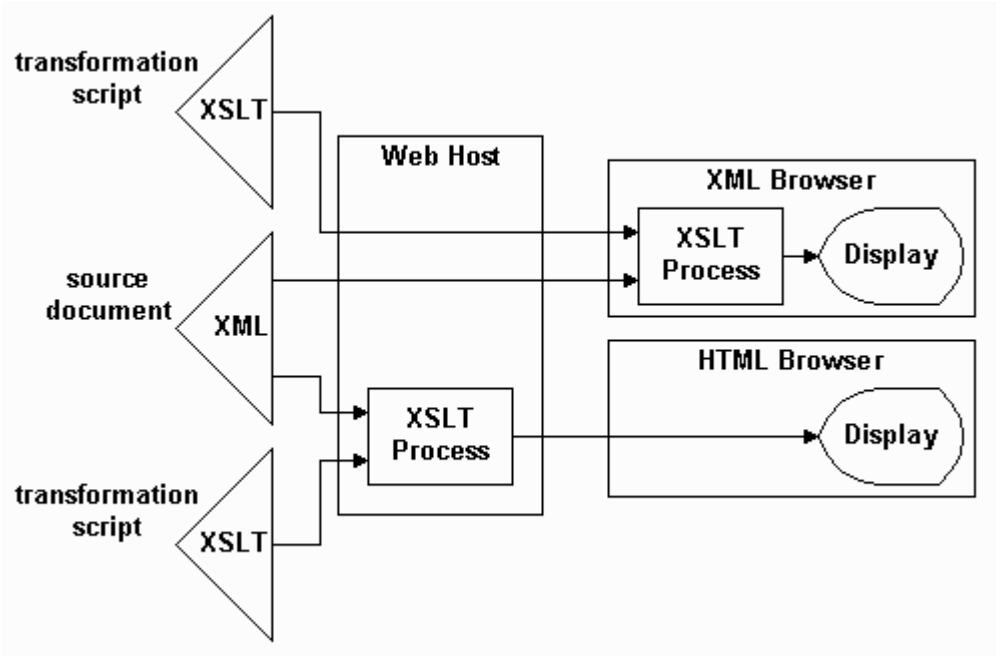


Figure 2: Presentation Layer Delivery

This approach gives the maximum ability to change the browser presentation in the future without making changes to Java code. Changing the presentation is a simple as providing a new transformation (XSLT) file.

B. Re Service Delivery

To facilitate usage of the downloaded exchange format files, a Microsoft Access database that can load the exchange format files, link the tables, and have pre-configured queries and reports and graphs, could be developed and made available from the web.

The users would download the Access database file, open the database in Microsoft Access, point the database application to the exchange format files and import those files into the database. Then the user could then select from the pre-configured reports and graphs to manipulate and analyse the data.

C. Possibility of a Pilot Project

In the 1990s, the then-current metadata standards were assessed for use in the TMAP system, but were not seen to be particularly beneficial nor well-established. Since that time metadata standards have evolved and are used in various software package offerings and in application development. The Data Documentation Initiative (DDI) is a de-facto international metadata standard used for documenting datasets. The standard was developed by an international committee and is in use within European and North American data archives, libraries and official statistics agencies. The DDI is designed to be fully machine-readable and machine processable.

Nesstar Ltd. (www.nesstar.com) has built a software suite based on the DDI standard. The basic approach of the Nesstar suite is built on the following concepts: Discover, Assess, Display and Deliver. The following are the key characteristics of the Nesstar technology:

- web-enabled to provide advanced data analysis capabilities through standard web browsers,
- distributed technology providing integrated access to data stored on separate servers,
- seamless integration between numerical data and metadata,
- supporting exploration of survey-data (questionnaire-type data) as well as aggregated data through a single integrated interface,
- highly efficient calculation engine providing tabulations in split-seconds on multi-million record data sources,
- built on rich metadata standards (DDI/RDF/XML) to support intelligent knowledge management and retrieval,
- one-step publishing into the Nesstar system, from data stored in a variety of formats (SAS, SPSS, Stata, Excel, Dbase, etc.)
- extract data and statistical output into most known formats and systems (SAS, SPSS, Stata, Statistica, Excel, Dbase, etc.)
- highly customizable browser interface to meet specific corporate requirements or to integrate with other services on the Web,
- built on open standards (XML, RDF, DDI, Dublin Core) and state-of-the-art architectural frameworks (J2EE).

The data collected and ultimately stored within the TMAP system can be considered as a DDI dataset. The catalogue data would be mapped to the DDI metadata fields that describe the overall dataset, for a particular data class (i.e. chemical, biological, etc.). The parameter data would be de-normalized and each column would provide the variable level metadata for the dataset.

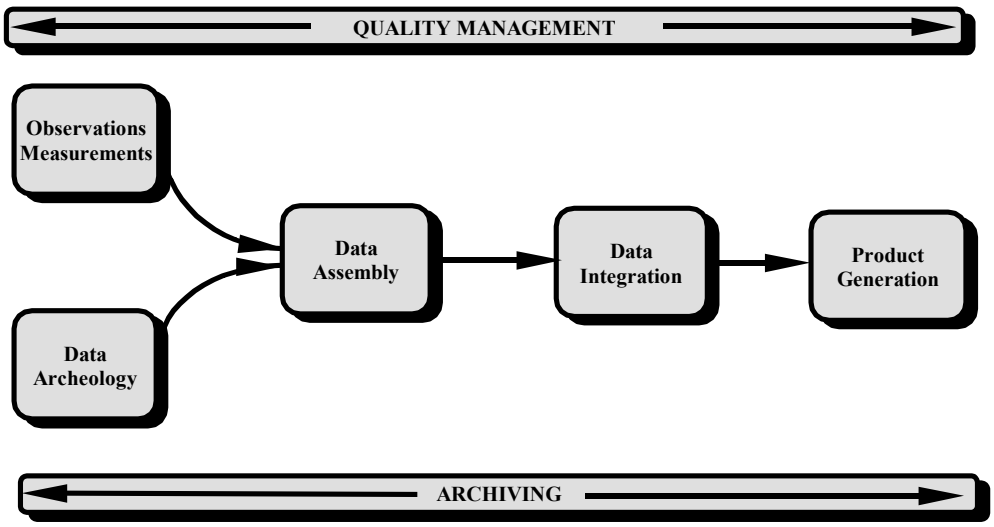
A pilot project could be undertaken with a Nesstar system (or similar product) making a subset of TMAP data available to selected users. This could both assist in defining the user requirements for products, and explore how these needs might be met.

ANNEX 5: END-TO-END DATA MANAGEMENT

This Annex presents a general framework for data management, as an entire "end-to-end" process.

The driving forces behind any data management system are issues – political, scientific, social etc. These define the variables of concern and the required applications i.e. the analysis and processing needed. Measurements are made, i.e. new data collected, through the definition of observing procedures, the types of instruments, required quality control and metadata. Data archaeology is undertaken, i.e. existing data reviewed for its utility. Data is assembled, and integrated into a database (data processed, additional metadata provided, quality control and datasets from separate sources merged). Products are generated, including metadata products, such as data inventories. Archive procedures are undertaken to preserve the various levels of data and information (with the required metadata) for future use.

The figure below shows the end-to-end process, noting that quality management is a continuous process.



Considering the elements of TMAP-DH in this context:

- The observations/measurements are in general undertaken as part of national programmes
- Data archaeology and assembly has been undertaken by the national Data Units
- Data integration is using the TMAP database (harmonised and structured)
- Products available are (very) limited.

Trilateral effort to date has concentrated on providing the database structure enabling the data integration, with an interface through which users can access the data.

ANNEX 6: PRINCIPAL ENVIRONMENTAL INSTRUMENTS RELATED TO THE WADDEN SEA

Instrument	Relevance to TWSC	Date Entered in Force			
		Denmark	Germany	Netherlands	EU
International Convention for the Regulation of Whaling 1946 (ICRW)	Low	23/5/1950	2/7/1982	14/6/1977	
Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (Ramsar Convention)	High	02/01/78	26/06/76	23/09/80	
Convention concerning the Protection of the World Cultural and Natural Heritage 1972 (WHC)	High	25/10/1979	23/11/1976	26/11/1992	
Convention on International Trade in Endangered Species of Wild Fauna and Flora 1973 (CITES)	Low	24/10/1977	20/06/1976	18/07/1984	
Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (Birds Directive)	High	2/4/1979	2/4/1979	2/4/1979	2/4/1979
Convention on the Conservation of Migratory Species of Wild Animals 1979 (CMS/ Bonn Convention)	High	1/11/1983	1/10/1984	1/11/1983	1/11/1983
Convention on the Conservation of European Wildlife and Natural Habitats 1979 (Bern Convention)	Moderate	1/1/1983	1/4/1985	1/6/1982	1/9/1982
Agreement on the Conservation of Seals in the Wadden Sea 1990	High	1/10/1991	1/10/1991	1/10/1991	
Agreement on the Conservation of Bats in Europe 1991 (Eurobats)	Low	5/2/1994	16/1/1994	16/1/1994	

Instrument	Relevance to TWSC	Date Entered in Force			
		Denmark	Germany	Netherlands	EU
Convention on Biological Diversity 1992 (CBD)	Moderate	21/3/1994	21/3/1994	10/10/1994	1/3/1994
Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas 1992 (ASCOBANS)	Moderate	29/3/1994	29/3/1994	29/3/1994	Signed 7/10/1992
United Nations Framework Convention on Climate Change 1992	Low	21/3/1994	21/3/1994	21/3/1994	21/3/1994
Convention for the Protection of the Marine Environment of the North-East Atlantic 1992 (OSPAR Convention)	High	25/3/1998	25/3/1998	25/3/1998	25/3/1998
Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive)	High	21/5/1992	21/5/1992	21/5/1992	21/5/1992
International Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification , particularly in Africa 1994 (Desertification Convention)	Low	26/12/1996	26/12/1996	26/12/1996	
Agreement on the Conservation of African-Eurasian Migratory Waterbirds 1995 (AEWA)	High	1/1/2000	1/11/1999	1/11/1999	Signed 1/9/1997
Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy (Water Framework Directive)	High	22/12/2000	22/12/2000	22/12/2000	22/12/2000

Instrument	Relevance to TWSC	Date Entered in Force			
		Denmark	Germany	Netherlands	EU
International Maritime Organisation – International Convention for the Prevention of Marine Pollution from Ships, 1973 (MARPOL) – PSSA designation	High	1973(?)	1973(?)	1973(?)	

ANNEX 7: REPORTING OBLIGATIONS OF KEY INSTRUMENTS

1. Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)

Purpose: The Ramsar Convention is a treaty for the conservation of wetlands (i.e. shallow open waters and any land regularly or intermittently covered or saturated by water). The original emphasis of the Ramsar Convention was on the conservation and wise use of wetlands primarily to provide habitat for waterbirds. Over the years, however, the Convention has broadened its scope to cover all aspects of wetland conservation and wise use, recognising the fundamental ecological functions of wetlands and their economic, cultural, scientific and recreational value. It provides a framework for international co-operation and, by joining the Convention, Contracting Parties make a commitment to:

- Designate at least one site that meets the Ramsar criteria for inclusion in the List of Wetlands of International Importance;
- Protect the ecological character of listed sites;
- Include wetland conservation within their national land-use planning;
- Establish nature reserves on wetlands and promote wetland training; and
- Consult with other Contracting Parties about the implementation of the Convention.

Geographic Scope: Global

Principal Reporting Obligations:

1. Ramsar National Report

Description: The report is to be considered a national planning tool for the implementation of the Ramsar Convention and should indicate national strategies and action plans, as well as information on listed sites.

Authority: Second Meeting of the Conference of the Contracting Parties, Recommendation 2.1.

Frequency: Three-yearly – at least six months prior to each ordinary meeting of the Conference of the Parties. (The next meeting is in 2005.)

Content: The CoP9 National Planning Tool/National Report Format follows Resolution VIII.26, including the request to incorporate: 1) codified questions on priorities and progress in implementation; 2) precise indicators for the status of, and progress in, implementation; and 3) explanatory text fields for reporting implementation progress since CoP8. It is divided into five distinct parts: Institutional Information Section; Summary of Implementation (optional); Feedback on the National Report Format; and for each Operation Objective, Planning Tool Section and CoP9 Report Section. Thus it includes information under the following headings:

- Institutional Information;
- Summary of Implementation (optional);
- Operational Objective 1: Inventory and Assessment;
- Operational Objective 2: Policies and Legislation, including Impact Assessment and Valuation;
- Operational Objective 3: Integration of Wetland Wise Use into Sustainable Development;
- Operational Objective 4: Restoration and Rehabilitation;
- Operational Objective 5: Invasive Alien Species;
- Operational Objective 6: Local Communities, Indigenous People and Cultural Value;
- Operational Objective 7: Private Sector Involvement;
- Operational Objective 8: Incentives;
- Operational Objective 9: Communication, Education and Public Awareness (CEPA);
- Operational Objective 10: Designation of Ramsar Sites;
- Operational Objective 11: Management Planning and Monitoring of Ramsar Sites;

- Operational Objective 12: Management of Shared Water Resources, Wetland and Wetland Species;
- Operational Objective 13: Collaboration with Other Institutions;
- Operational Objective 14: Sharing of Expertise and Information;
- Operational Objective 15: Financing the Conservation and Wise Use of Wetlands;
- Operational Objective 16: Financing the Conservation and Wise Use of Wetlands;
- Operational Objective 17: Institutional Mechanisms of the Convention;
- Operational Objective 18: Institutional Capacity of Contracting Parties;
- Operational Objective 20: Training;
- Operational Objective 21: Membership of the Convention; and
- Feedback on CoP9 National Report Format.

Reporting Format: National Planning Tool for the Implementation of the Ramsar Convention on Wetlands.

2. ***Information on the conservation status of coastal wetlands***

Description: Parties are requested to document past losses and the current status and trends of coastal wetlands, including national wetland inventories.

Authority: Eighth meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Resolution VIII.4

Frequency: This is a one-time only reporting requirement. The information is to be included in the National Reports to CoP9, which are to be submitted at least six months prior to CoP9 (2005).

Content: Information on past losses and the current status and trends of coastal wetlands.

Reporting Format: To be accomplished through the National Report to CoP9.

3. ***Information on progress to restore wetland sites***

Description: Parties whose sites are listed and have incurred or are threatened by damage are to report on actions undertaken to safeguard and restore sites

Authority: Third Meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Recommendation 3.9; Fourth Meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Recommendation 4.1; Eighth Meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Resolution VIII.16

Frequency: The information is to be included in the National Reports, which are to be submitted at least six months prior to a CoP (2005).

Content: Information on programmes to implement restoration on sites with the potential for restoration.

Reporting Format: Accomplished through National Reports.

4. ***Information on temporary pools***

Description: Resolution VIII.33 calls on Parties to renew efforts to work in collaboration with local communities and indigenous people to designate examples of temporary pools for the List of Wetlands of International Importance. Parties are requested to report to CoP9 (through the National Report) on their progress.

Authority: Eighth Meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Resolution VIII.33

Frequency: This is a one-time-only reporting requirement. The information is to be included in the National Reports to CoP9, which are to be submitted at least six months prior to CoP9 (in 2005).

Content: Information on progress with the designation for the List of Wetlands of International Importance sites including temporary pools.

Reporting Format: To be accomplished through the National Report to CoP9.

5. ***Information on the application of participatory environmental management (PEM) strategies***

Description: Parties are urged to inform CoP9 (via the National Report) of progress and successful experiences in applying PEM strategies.

Authority: Eighth Meeting of the Conference of the Contracting Parties to the Wetlands Convention, Resolution VIII.36

Frequency: This is a one-time-only reporting requirement. The information is to be included in the National Reports to CoP9, which are to be submitted at least six months prior to CoP9 (in 2005).

Content: Information on progress and successful experiences in applying PEM strategies.

Reporting Format: To be accomplished through the National Report to CoP9.

6. ***Information Sheet on Ramsar Wetlands***

Description: Data sheet providing baseline information on a wetland site upon its designation. In recognition that the status of designated Ramsar sites can and does change, both in terms of their ecological character, the threats to this character, and the conservation management process and actions underway, Resolution VI.13 urges Contracting Parties to revise the data provided in the RIS at least every six year or as necessary.

Authority: Ramsar Convention, Article 2(5)

Frequency: As required - An RIS should be submitted whenever a site is designated. Resolution VI.13 provides that Parties must verify the data provided every six years (i.e. every second meeting of the Conference of the Parties) and provide the Ramsar Bureau with updated sheets if necessary. During the intervening period, urgent information on changes at listed sites should be conveyed to the Bureau using day-to-day contacts and the triennial National Reports.

Content: The format takes the form of a list of information headings, as follows:

- Geographical co-ordinates;
- General location;
- Elevation;
- Area (in ha);
- Overview;
- Ramsar Criteria;
- Justification for the application of each Criterion;
- Biogeography;
- Physical features of the site;
- Physical features of the catchment area;
- Hydrological values;
- Wetland types;
- General ecological features;
- Noteworthy flora;
- Noteworthy fauna;
- Social and cultural values;
- Land tenure/ownership;
- Current land (including water);
- Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects use;
- Conservation measures taken;
- Conservation measures proposed but not yet implemented;
- Current scientific research and facilities;
- Current conservation education;
- Current recreation and tourism;
- Jurisdiction;
- Management authority; and
- Bibliographical references.

Reporting Format: Information Sheet on Ramsar Wetlands. An original format for the RIS was provided in Recommendation 4.7. Resolutions V.3, VI.13 and VI.16 provide guidance when sheets are to be submitted. Resolution VIII.10 requests all Parties to use the revised format of the RIS as adopted in Resolution VIII.13 in their designation of new sites, extensions to existing sites and updates of existing sites.

7. ***Information on changes to ecological character***

Description: Parties are to provide information on any ecological change to a wetland site included on the List when the site has changed, is changing or is likely to change as a result of technological developments, pollution and other human interference.

Authority: Ramsar Convention, Article 3(2)

Frequency: As required. Information should be provided whenever a site has changed, is changing or is likely to change. Parties are required to provide this information "without delay". In addition, Resolution VIII.8 states that Parties should report on such changes in their National Reports for each meeting of the Conference of the Parties.

Content: Information on Ramsar sites that have changed, are changing or are likely to change as a result of technological developments, pollution or other human interference. Recommendation 3.9 calls upon the Parties concerned report on actions taken to safeguard these sites.

Reporting Format: There is no specified format for information provided between Conferences of the Parties. May be accomplished through National Reports.

8. ***Information changes to ecological character caused by dams***

Description: Parties to provide information on dams that have changed, are changing or are likely to change the ecological character of Ramsar sites

Authority: Eighth Meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Resolution VIII.2

Frequency: May be accomplished through the provision of information on changes to ecological character.

Content: Information on dams that have changed, are changing or are likely to change the ecological character or Ramsar sites.

Reporting Format: This reporting requirement is accomplished through the provision of information on changes to ecological character.

9. ***Information on the impact of dams on wetlands***

Description: Parties are urged to report on the impacts of dams on wetlands in their territories.

Authority: Eighth Meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Resolution VIII.2

Frequency: The information is to be included in the National Reports to CoP9, which are to be submitted at least six months prior to CoP9 (in 2005).

Content: Information on the impacts of dams on wetlands

Reporting Format: To be accomplished through the National Report to CoP9.

10. ***Information on the impacts of drought and other natural disasters***

Description: Parties report on the impacts of drought in areas on the ecological character of Ramsar sites and other natural disasters on the ecological character of Ramsar sites.

Authority: Eighth Meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Resolution VIII.35

Frequency: Resolution VIII.35 states that information on the impacts of drought and other natural disasters on the ecological character of sites and on the livelihoods of local communities should be sent to the Ramsar Bureau so that this information can be made available to the

Scientific and Technical Review Panel to assist in its reporting to CoP9. Information on the impacts of drought and other natural disasters on the ecological character of sites may be accomplished through the provision of information on changes to ecological character and should be provided as required.

Content: 1) Information on the impacts of drought in areas where it is not normally experienced, and other natural disasters, on the ecological character of Ramsar sites and other wetlands and on the livelihoods of local communities and indigenous peoples dependent on these wetlands within their territory. 2) Information on the impact of drought and other natural disasters on the ecological character of Ramsar sites, including the consequences of people's responses to natural disasters.

Reporting Format: No format is specified for the provision of information on the impacts of drought and other natural disasters on the ecological character of sites and on the livelihoods of local communities. The requirement for information on the impacts of drought and other natural disasters on the ecological character of sites is accomplished through the provision of information on changes to ecological character.

11. *Information on invasive alien species*

Description: Parties to provide information on the presence of invasive alien species in Ramsar sites and other wetlands in their territories, the threats they pose to the ecological character of these wetlands, and the actions underway or planned for their prevention, eradication or control.

Authority: Eighth Meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Resolution VIII.18

Frequency: As required. Resolution VIII.18 states that this information should be provided "without delay". May be accomplished through the provision of information on changes to ecological character.

Content: Information on the presence of invasive alien species in Ramsar sites and other wetlands in the territory, the threats they pose to the ecological character of these wetlands, including the risk of invasions by such species not yet present within each site, and the actions underway or planned for their prevention, eradication or control.

Reporting Format: This reporting requirement is accomplished through the provision of information on changes to ecological character.

12. *Information on mangrove ecosystems*

Description: Parties to provide information on mangrove ecosystem cover and their conservation status, as well as the forms and levels of their use.

Authority: Eighth Meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Resolution VIII.32

Frequency: Information should be provided in time for the Scientific and Technical Review Panel to produce its report on the status and trends in the ecological character of sites for consideration by CoP9, and also for subsequent meetings of the Conference of the Parties (as called for in Resolution VIII.8)

Content: Information on mangrove ecosystem cover and their conservation status, as well as the forms and levels of their use.

Reporting Format: This reporting requirement is accomplished through the provision of information on changes to ecological character.

13. *Montreux Record Questionnaire*

Description: Provision of information to confirm whether adverse ecological change has occurred, is occurring or is likely to occur on a site, prior to listing as a priority site on the Montreux Record, and to assess the possible removal of a site from the Montreux Record.

Authority: Fourth meeting of the Conference of the Contracting Parties to the Ramsar Convention, Recommendation 4.8; Fifth meeting of the Conference of the Contracting Parties to the Ramsar Convention, Resolution V.4

Frequency: As required. A questionnaire should be completed when a Party is requesting the inclusion of a site in the Montreux Record and when considering the removal of a site from the Record.

Content: The format is divided into two sections. The first section calls for information for assessing possible inclusion of a listed site in the Montreux Record, and is itself divided into essential items and additional items which may be included:

- Ramsar Criteria for listing the site as internationally important;
- Nature of change in ecological character/potential for adverse change;
- Reason(s) for adverse change, or potential adverse change, in ecological character;
- Date Information Sheet on Ramsar Wetlands submitted;
- Date and source of Information Sheet updates;
- Benefits and values derived from the site;
- Extent to which values and benefits derived from the site have decreased or changed;
- Monitoring programme in place at the site, if any;
- Assessment procedures in place, if any;
- Ameliorative and restoration measures in place or planned;
- List of attachments provided by the Contracting Party (if applicable); and
- List of attachments provided by the Ramsar Bureau (if applicable).

The second section is concerned with information for assessing the possible removal of a listed site from the Montreux Record:

- Success of ameliorative, restoration or maintenance measures;
- Proposed monitoring and assessment procedures;
- Extent to which the ecological character, benefits and values of the site have been restored or maintained;
- Rationale for removing the site from the Montreux Record;
- List of further attachments (if applicable)

Reporting Format: Guidelines for Operation of the Montreux Record

14. *Information on sites in the Montreux Record*

Description: Information on the conservation status of any sites included in the Montreux Record.

Authority: Sixth Meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Resolution VI.1, Annex, section 3; Eighth Meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Resolution VIII.8, paragraph 23.

Frequency: The information is to be included in the National Reports to each meeting of the Conference of the Parties.

Content: Information on conservation status and the progress made in taking action to address the issues for which the Ramsar site(s) were listed on the Montreux Record

Reporting Format: Accomplished through the National Report.

2. Convention concerning the Protection of the World Cultural and Natural Heritage (WHC)

Purpose: The World Heritage Convention recognises that parts of the cultural and/or natural heritage are of outstanding interest and should be preserved as part of the world heritage of mankind as a whole. Its primary mission is to define and conserve this heritage, by drawing up a list of sites of outstanding value and to ensure their protection through a closer co-operation among nations. By signing the Convention, each country pledges to conserve the sites situated on its territory, some of

which may be recognised as World Heritage. Their preservation for future generations then becomes a responsibility shared by the international community as a whole.

Geographical Scope: Global

Principal Reporting Obligations:

1. ***Tentative List***

   Description: An inventory of property forming part of the cultural and natural heritage in a national territory and considered suitable for inclusion in the World Heritage List. The purpose of these tentative lists is to enable the World Heritage Committee to evaluate within the widest possible context the "outstanding universal value" of each property nominated to the List.

   Authority: World Heritage Convention, Article 11(1).

   Frequency: One time only - upon accession.

   Content: Information should be provided under the following headings: 1) name of the property; 2) the geographical location of the property; 3) a brief description of the property; and 4) a justification of the "outstanding universal value" of the property in accordance with the criteria and conditions of authenticity or integrity set out in paragraphs 24 and 44 of the Operational Guidelines, taking account of similar properties both inside and outside the boundaries of the State concerned.

   Reporting Format: A standard format (Model for Presenting a Tentative List) is attached as Annex 1 to the Operational Guidelines.

2. ***Information in support of inscription of a property***

   Description: The nomination dossier serves two main purposes: 1) to describe the property in a way which brings out the reasons it is believed to meet the criteria for inscription and to enable the property to be assessed against those criteria; and 2) to provide basic data about the property, which can be revised and brought up-to-date in order to record the changing circumstances and state of conservation of the property.

   Authority: World Heritage Convention, Article 11(1).

   Frequency: Parties can choose to nominate a particular site and submit a nomination for inscription at any time. However, only nominations received by the Secretariat before 1st July each year will be considered by the World Heritage Committee during the following year.

   Content: The format takes the form of a list of information that should be provided, under eight headings:

   - identification of the property;
   - justification for inscription;
   - description;
   - management;
   - factors affecting the property;
   - monitoring;
   - documentation; and
   - signature on behalf of the State.

   Reporting Format: Format for the nomination of cultural and natural properties for inscription on the World Heritage List (At its twentieth session in 1996, the World Heritage Committee adopted a format and explanatory notes for the nomination of cultural and natural properties for inscription on the World Heritage List.).

3. ***Periodic National Report***

   Description: Reports to provide information on the legislative and administrative provisions the Party has adopted and other actions taken to apply the Convention, including the state of conservation of the World Heritage properties located on its territories. The aims of periodic reporting are to assess the overall application of the World Heritage Convention by States Parties, as well as to assess whether the World Heritage value(s) for which a property was inscribed on

the World Heritage List is/are maintained over time. The reports also provide a mechanism for regional co-operation and exchange of information and experiences between State Parties.

Authority: World Heritage Convention, Article 29.

Frequency: Six-yearly. To be examined region-by-region according to a pre-established schedule.

Content: The format is divided into two sections. Section I constitutes the State Party's report on the application of relevant articles of the World Heritage Convention, including those referring to the identification of properties of cultural and/or natural value; protection, conservation and presentation of the cultural and natural heritage; international co-operation and fund-raising; and, education, information and awareness-building. Section II refers to the state of conservation of specific World Heritage properties located on the State Party's territory. In addition, State Parties are requested to provide up-dated information on the management factors affecting the property and monitoring arrangements. In conclusion, information should be provided under the following headings:

- General Information;
- National inventories;
- Tentative list;
- Nominations;
- General policy development;
- Status of services for protection, conservation and presentation;
- Scientific and technical studies and research;
- Measures for identification, protection, conservation, presentation and rehabilitation;
- Training;
- International co-operation and fund-raising;
- Education, information and awareness-building; and
- Conclusions and recommended action.

For each property:

- General information;
- Statement of significance;
- Statement of authenticity/integrity;
- Management;
- Factors affecting the property;
- Monitoring; and
- Conclusions and recommended action.

Reporting Format: Format for the periodic reporting on the application of the World Heritage Convention (adopted by the World Heritage Committee, at its twenty-second session in December 1998).

4. *Reactive monitoring*

Description: Specific reports and impact studies each time exceptional circumstances occur or work is undertaken which may have an effect on the state of conservation of a listed World Heritage Site.

Authority: World Heritage Convention, Article 11.

Frequency: 21 February each year.

Content: Information on changes that have occurred or work that is being undertaken which may have an effect on the state of conservation of a listed World Heritage Site.

Reporting Format: Reactive Monitoring is specifically mentioned in paragraph 68 of the Operational Guidelines. No specific format is provided. The form and content depends upon circumstances and may be subject to further clarification in the future.

3. Convention on the Conservation of Migratory Species of Wild Animals (CMS or Bonn Convention)

Purpose: The Bonn Convention aims to conserve terrestrial, marine and avian migratory species throughout their range. Parties to the Convention work together to conserve migratory species and their habitats by: providing strict protection for the endangered migratory species listed in Appendix I of the Convention; concluding multilateral Agreements for the conservation and management of migratory species listed in Appendix II; and undertaking co-operative research activities.

It does not seem that any of the species that are monitored under TMAP are also currently listed on Appendix I. However, there is a significant overlap between the species listed on Appendix II and those species monitored under TMAP. These include the following:

***TMAP Parameter 7.1 (Numbers and distribution of breeding birds)*:**

Eurasian Spoonbill, *Platalea leucorodia*
Shelduck, *Tadorna tadorna*
Hen Harrier, *Circus cyaneus*
Avocet, *Recurvirostra avosetta*
Great Ringed Plover, *Charadrius hiaticula*
Kentish Plover, *Charadrius alexandrinus*
Northern Lapwing, *Vanellus vanellus*
Dunlin, *Calidris alpine shinzii*
Ruff, *Philomachus pugnax*
Common Snipe, *Gallinago gallinago*
Black-tailed Godwit, *Limosa limosa*
Eurasian Curlew, *Numenius arquata*
Common Redshank, *Tringa tetanus*
Mediterranean Gull, *Larus melanocephalus*
Sandwich Tern, *Sterna sandvicensis*
Common Tern, *Sterna hirundo*
Arctic Tern, *Sterna paradisaea*
Little Tern, *Sterna albifrons.*

***TMAP Parameter 7.4 (Monitoring of migratory birds)*:**

Barnacle Goose, *Branta leucopsis*
Brent Goose, *Branta bernicla*
Shelduck, *Tadorna tadorna*
Wideon, *Anas Penelope*
Teal, *Anas crecca*
Mallard, *Anas platyrhynchos*
Pintail, *Anas acuta*
Shoveler, *Anas clypeata*
Avocet, *Recurvirostra avosetta*
Ringed Plover, *Charadrius hiaticula*
Golden Plover, *Pluvialis apricaria*
Grey Plover, *Pluvialis squatarola*
Lapwing, *Vanellus vanuellus*
Knot, *Calidris canutus*
Sanderling, *Calidris alba*
Curlew Sandpiper, *Calidris ferruginea*
Dunlin, *Calidris alpine*
Ruff, *Philomachus pugnax*
Bar-tailed Godwit, *Limosa lapponica*
Whimbrel, *Numenius phaeopus*
Curlew, *Numenius arquata*
Spotted Redshank, *Tringa erythropus*
Redshank, *Tringa tetanus*
Greenshank, *Tringa nebularia*

***TMAP Parameter 8.1 (Seal populations)*:**

Common Seal (*Phoca vitulina*) (only Baltic and Wadden Sea populations are listed on Appendix II)

Geographic Scope: Global

Principal Reporting Obligations:

1. ***National Report***

Description: On accession to the Convention, Parties that are Range States for migratory species listed in the Appendices to the Convention are required to provide information on the status and population of these species and on the measures they are taking to protect the species and their habitats (Art. VI(2), Bonn Convention). Thereafter, Parties are required to update the information provided on accession or in the previous triennial report (Art. VI(3), Bonn Convention).

Authority: Article VI, Bonn Convention.

Frequency: Upon accession and thereafter at least six months prior to each ordinary triennial meeting of the Conference of the Parties.

Content: Information is required under the following headings:

- General Information (including participation in associated Agreements and Memoranda of Understanding);
- Appendix I bird species;
- Appendix I marine mammals;
- Appendix I marine turtles;
- Appendix I terrestrial mammals (other than bats);
- Appendix I bats;
- Appendix I – other taxa;
- Information on Appendix II species (questions on CMS Agreements);
- National and regional priorities;
- Protected areas;
- Policies on satellite telemetry;
- Membership;
- Global and national importance of CMS;
- Mobilisation of resources;
- Implementation of CoP Resolutions and Recommendations; and
- Annex - questions on specific Appendix II species.

Reporting Format: Format for Reports of Parties on Implementation of the Convention on the Conservation of Migratory Species of Wild Animals (formally adopted at the 26th meeting of the Standing Committee in July 2003.)

2. ***Information on exceptions to the taking of Appendix I species (endangered migratory species)***

Description: Article III(5) provides that Range States of a migratory species listed in Appendix I shall prohibit the taking of animals belonging to such a species. However, exceptions to the prohibition can be made in certain circumstances (listed in Article III(5)). Article III(7) requires Parties to inform the Secretariat of any such exceptions made.

Authority: Article III(7), Bonn Convention.

Frequency: Article III(7) states that Parties should inform the Secretariat of exceptions "as soon as possible". However, in practice, this reporting requirement is satisfied through submission of the triennial National Report, which contains specific questions relating to such exceptions.

Content: Article III(5) of the Convention states that Parties that are Range States of a migratory species listed in Appendix I shall prohibit the taking of animals belong to such species. However, exceptions may be made in certain specified circumstances. Article III(7) requires that Parties inform the Secretariat of any exceptions made pursuant to Article III(5).

Reporting Format: Accomplished through the National Report.

4. Agreement on the Conservation of Seals in the Wadden Sea 1990

Purpose: The aim of the Agreement is to co-operate closely in achieving and maintaining a favourable conservation status for the common seal population of the Wadden Sea. The Agreement provides for the co-ordination of research and monitoring, a prohibition on taking (subject to several exceptions), habitat protection, reduction of pollution and public awareness initiatives. It also provides for the development of a conservation and management plan which is based on scientific knowledge and outlines the specific efforts that are needed to implement various aspects of the Agreement, outlines activities currently being undertaken, and prescribes future activities which should be undertaken by the Parties in order to achieve the aims of the Agreement. The Seal Management Plan (SMP) (2001-2006) focuses on conservation and management measures regarding habitats, pollution control, research and monitoring, taking and exemptions of taking, and public information.

It should be noted that the Wadden Sea Seal Agreement and the Conservation and Management Plan for the Wadden Sea Seal Population 1991-1995 were concerned only with the common seal (*Phoca vitulina*). However, since the Seal Management 1996-2000, additional measures for the protection of the grey seal (*Halichoerus grypus*) in the Wadden Sea are also included.

Geographic Scope: Wadden Sea (defined in Article 2(b) of the Agreement)

Principal Reporting Obligations:

The SMP 2001-2006 states that the Common Wadden Sea Secretariat shall be informed of all developments and activities which concern the conservation and management of the Wadden Sea Seal population. Under the SMP the following reporting requirements are specified:

1. reporting of numbers of common and grey seals found dead, taken or released in the Wadden Sea Area;
2. reporting of detailed information from all seals taken, such as number, age (length), sex, time and location found, and time and location of release of rehabilitated seals;
3. reporting of the number of seal species (other than common and grey seals) found dead in the Wadden Sea;
4. reporting of the number of seal species (other than common and grey seals) kept in the Wadden Sea seal centres; and
5. reporting on the independent check of seal station records.

The results of the aerial surveys conducted each year (under TMAP parameter 8.1) are reported to the Common Wadden Sea Secretariat and are published in the Wadden Sea Newsletter.

5. Convention for the Protection of the Marine Environment of the North-East Atlantic 1992 (OSPAR Convention)

Purpose: The OSPAR Convention aims to prevent and eliminate pollution and requires Contracting Parties to take necessary measures to protect the marine environment against the adverse effects of human activities so as to safeguard human health and to conserve marine ecosystems and, when practicable, restore marine areas which have been adversely affected. It is comprehensive, covering all forms of pollution to the sea, including pollution from land-based sources, pollution by dumping or incineration, and pollution from offshore sources. Parties are required to undertake joint assessments of the quality status of the marine environment, and the Convention provides for co-operation in prescribing measures, procedures and standards to protect the marine environment against pollution and to collaborate in scientific and technical research. The Convention includes five Annexes as follows:

- Annex I – on the prevention and elimination of pollution from land-based sources;
- Annex II – on the prevention and elimination of pollution by dumping or incineration;
- Annex III – on the prevention and elimination of pollution from offshore sources;
- Annex IV – on the assessment of the quality of the marine environment;

- Annex V – on the protection and conservation of the ecosystems and biological diversity of the maritime area.

Strategies to direct its future work have been developed and adopted in the following five main areas:

- protection and conservation of ecosystems and biological diversity;
- hazardous substances;
- radioactive substances;
- eutrophication; and
- offshore oil and gas industry.

Geographic Scope: The sea beyond and adjacent to the territorial sea under the jurisdiction of the coastal state, and the high seas situated within the following limits:

- those parts of the Atlantic and Arctic Oceans and their dependent seas which lie north of 36 north latitude and between 42 west longitude and 51 east longitude, but excluding: 1) the Baltic Sea and the Belts lying to the south and east of lines drawn from Hasenore Head to Gniben Point, from Korshage to Spodsbjerg and from Gilbjerg Head to Kullen; and 2) the Mediterranean Sea and its dependent seas as far as the point of intersection of the parallel of 36 north latitude and the meridian of 5 36' west longitude;
- the Atlantic Ocean north of 59 north latitude and between 44 west longitude and 42 west longitude.

Principal Reporting Obligations:

The Convention contains the following reporting requirements:

1. National Report on Implementation

Article 22 of the Convention provides that Contracting Parties shall report to the Commission at regular intervals on:

- the legal, regulatory, or other measures taken by them for the implementation of the provisions of the Convention and of decisions and recommendations adopted thereunder, including in particular measures taken to prevent and punish conduct in contravention of those provisions;
- the effectiveness of the measures referred to in subparagraph (a) of this Article;
- problems encountered in the implementation of the provisions referred to in subparagraph (a) of this Article.

2. Information on dumping

Article 4(3) of Annex II (on the Prevention and Elimination of Pollution by Dumping or Incineration) requires each Party to record and submit to the Commission records of the nature and the quantities of wastes or other matter dumped in accordance with Article 4(1), and of the dates, places and methods of dumping. (Article 4(1) provides that no wastes or other matter listed in Article 3(2) of Annex II shall be dumped without authorisation by their competent authorities, or regulation.)

3. Notification of dumping in cases of force majeure

Article 7of Annex II provides that the provisions of the Annex concerning dumping shall not apply in case of force majeure, due to stress of weather or any other cause, when the safety of human life or of a vessel or aircraft is threatened. Such dumping shall be so conducted as to minimise the likelihood of damage to human or marine life and shall immediately be reported to the Commission, together with full details of the circumstances and of the nature and quantities of the wastes or other matter dumped.

4. Notification of steps taken to dispose of waste which it is prohibited to dump

Article 9 of Annex II provides that, in an emergency, if a Contracting Party considers that wastes or other matter the dumping of which is prohibited under this Annex cannot be disposed of on land without unacceptable danger or damage, it shall forthwith consult other Contracting Parties with a view to finding the most satisfactory methods of storage or the most satisfactory means of destruction or disposal under the prevailing circumstances. The Contracting Party shall inform the Commission of the steps adopted following this consultation.

5. Information on Disused Offshore Installations and Pipelines

Article 5(4) of Annex III (on the Prevention and Elimination of Pollution from Offshore Sources) provides that each Contracting Party shall keep, and report to the Commission, records of the disused offshore installations and disused offshore pipelines dumped and of the disused offshore installations left in place in accordance with the provisions of Article 5, and of the dates, places and methods of dumping.

6. Notification of dumping of wastes from offshore installations or disused offshore installations or pipelines in the case of force majeure

Article 6 provides that Articles 3 and 5 of Annex III do not apply in case of force majeure, due to stress of weather or any other cause, when the safety of human life or of an offshore installation is threatened. Such dumping shall be so conducted as to minimise the likelihood of damage to human or marine life and shall immediately be reported to the Commission, together with full details of the circumstances and of the nature and quantities of the matter dumped.

In accordance with Article 22 of the Convention, the following measures applicable under the Ospar Convention have implementation reporting requirements:

Implementation reporting requirements related to OSPAR measures addressing activities under Annex II and Annex V of the Convention (biodiversity and ecosystems):

- OSPAR Recommendation 2003/2 on an OSPAR Framework for Reporting Encounters with Marine Dumped Conventional and Chemical Munitions.
- OSPAR Recommendation 2003/3 on a Network of Marine Protected Areas.

Implementation reporting requirements related to OSPAR measures addressing discharges, emissions and losses of nutrients from various sources:

- PARCOM Recommendation 88/2 on the Reduction in Inputs of Nutrients to the Paris Convention Area.
- PARCOM Recommendation 89/4 on a Coordinated Programme for the Reduction of Nutrients
- PARCOM Recommendation 92/7 on the Reduction of Nutrient Inputs from Agriculture into Areas Where these Inputs are Likely, Directly or Indirectly, to Cause Pollution

Implementation reporting requirements related to OSPAR measures addressing discharges, emissions and losses from, inter alia, the production and application of hazardous substances in industrial sectors:

- PARCOM Recommendation 92/2 Concerning Limitation of Pollution from New Primary Iron and Steel Production Installations
- PARCOM Recommendation 93/1 on the Limitation of Pollution from Existing Primary Iron and Steel Production Installations
- PARCOM Recommendation 91/3 on Measures to be Taken and Investigations to be Carried out in order to Reduce Pollution from Secondary Iron and Steel Production
- PARCOM Recommendation 92/3 Concerning Limitation of Pollution from New Secondary Steel Production and Rolling Mills
- PARCOM Recommendation 92/4 on the Reduction of Emissions from the Electroplating Industry
- PARCOM Decision 96/1 on the Phasing Out of the Use of Hexachloroethane in the Non-Ferrous Metal Industry
- PARCOM Recommendation 92/1 on Best Available Technology for Plants Producing Anodes and for New Electrolysis Installations in the Primary Aluminium Industry
- PARCOM Recommendation 94/1 on Best Available Techniques for New Aluminium Electrolysis Plants
- PARCOM Recommendation 96/1 on Best Available Techniques and Best Environmental Practice for Existing Aluminium Electrolysis Plants
- OSPAR Recommendation 98/2 on Emission and Discharge Limit Values for Existing Aluminium Electrolysis Plants

- OSPAR Recommendation 2002/1 On Discharge Limit Values for Existing Aluminium Electrolysis Plants
- OSPAR Recommendation 98/1 concerning Best Available Techniques and Best Environmental Practice for the Primary Non-Ferrous Metal Industry (Zinc, Copper, Lead and Nickel Works)
- PARCOM Decision 90/3 on Reducing Atmospheric Emissions from Existing Chlor-Alkali Plants
- PARCOM Recommendation 97/2 on Measures to be Taken to Prevent or Reduce Emissions of Heavy Metals and Persistent Organic Pollutants Due to Large Combustion Plants (≥ 50 MWth)
- PARCOM Recommendation 94/4 on Best Available Techniques for the Organic Chemical Industry
- PARCOM Recommendation 89/5 Concerning Refineries
- PARCOM Recommendation 96/2 Concerning Best Available Techniques for the Manufacture of Vinyl Chloride Monomer
- OSPAR Decision 98/4 on Emission and Discharge Limit Values for the Manufacture of Vinyl Chloride Monomer (VCM) including the Manufacture of 1,2-dichloroethane (EDC)
- PARCOM Recommendation 96/3 Concerning Best Available Techniques for the Manufacture of Suspension-PVC from Vinyl Chloride Monomer
- OSPAR Decision 98/5 on Emission and Discharge Limit Values for the Vinyl Chloride Sector, Applying to the Manufacture of Suspension-PVC (s-PVC) from Vinyl Chloride Monomer (VCM)
- OSPAR Recommendation 99/1 on Best Available Techniques for the Manufacture of Emulsion PVC (e-PVC)
- OSPAR Recommendation 2000/3 on Emission and Discharge Limit Values for the Manufacture of Emulsion PVC (e-PVC) from Vinyl Chloride Monomer
- PARCOM Recommendation 92/5 Concerning Best Available Technology in the Pharmaceutical Manufacturing Industry
- PARCOM Recommendation 94/5 on Best Available Techniques and Best Environmental Practice for Wet Processes in the Textile Processing Industry
- PARCOM Recommendation 97/1 Concerning Reference Values for Effluent Discharges for Wet Processes in the Textile Processing Industry
- PARCOM Decision 92/1 on the Reduction of Discharges of Chlorinated Organic Substances from the Production of Bleached Kraft and Sulphite Pulp
- PARCOM Decision 96/2 on The Phasing-Out of Processes Using Molecular Chlorine (Cl_2) in the Bleaching of Kraft and Sulphite Pulp
- PARCOM Recommendation 94/3 on Best Available Techniques and Best Environmental Practice for the Integrated and Non-Integrated Kraft Pulp Industry
- PARCOM Decision 95/3 on Discharge and Emission Limit Values for the Integrated and Non-Integrated Kraft Pulp Industry
- PARCOM Recommendation 94/2 on Best Available Techniques and Best Environmental Practice for the Integrated and Non-Integrated Sulphite Paper Pulp Industry
- PARCOM Decision on 95/2 on Discharge and Emission Limit Values for the Integrated and Non-Integrated Sulphite Paper Pulp Industry

Implementation reporting requirements related to OSPAR measures addressing losses from the application of hazardous substances in other activities:

- PARCOM Recommendation 87/1 on the Use of Tributyl-Tin Compounds
- PARCOM Recommendation 88/1 on Measures to Reduce Organotin Compounds Reaching the Aquatic Environment Through Docking Activities
- PARCOM Recommendation 89/3 on Programmes and Measures for Reducing Mercury Discharges from Various Sources
- PARCOM Recommendation 93/2 on Further Restrictions on the Discharge of Mercury from Dentistry
- OSPAR Recommendation 2003/4 on Controlling the Dispersal of Mercury from Crematoria
- PARCOM Decision 92/3 on The Phasing Out of PCBs and Hazardous PCB Substitutes

- PARCOM Recommendation 92/8 on Nonylphenol-Ethoxylates
- PARCOM Recommendation 93/4 on the Phasing Out of Cationic Detergents DTDMAC, DSDMAC and DHTDMAC in Fabric Softeners
- PARCOM Decision 95/1 on the Phasing Out of the Use of Short-Chained Chlorinated Paraffins
- PARCOM Recommendation 96/4 on The Phasing Out of the Use of One-Component Coal Tar Coating Systems for Inland Ships
- PARCOM Recommendation 94/7 on The Elaboration of National Action Plans and Best Environmental Practice (BEP) for the Reduction of Inputs to the Environment of Pesticides from Agricultural Use
- OSPAR Recommendation 2000/1 on Best Environmental Practice (BEP) for the Reduction of Inputs of Agricultural Pesticides to the Environment through the Use of Integrated Crop Management Techniques
- OSPAR Recommendation 2000/2 on Best Environmental Practice (BEP) for the Use of Pesticides on Amenity Areas
- PARCOM Recommendation 94/6 on Best Environmental Practice (BEP) for the Reduction of Inputs of Potentially Toxic Chemicals from Aquaculture Use

Implementation reporting requirements related to OSPAR measures addressing discharges, emissions and losses from the offshore oil and gas industry:

- OSPAR Decision 2000/2 on a Harmonised Mandatory Control System for the Use and Reduction of the Discharge of Offshore Chemicals
- OSPAR Recommendation 2000/4 on a Harmonised Pre-screening Scheme for Offshore Chemicals
- OSPAR Recommendation 2000/5 on a Harmonised Offshore Chemical Notification Format (HOCNF)
- OSPAR Decision 2000/3 on the Use of Organic-phase Drilling Fluids (OPF) and the Discharge of OPF-contaminated Cuttings
- OSPAR Recommendation 2001/1 on the Management of Produced Water from Offshore Installations
- OSPAR Recommendation 2003/5 to Promote the Use and Implementation of Environmental Management Systems

Implementation reporting requirements related to OSPAR measures addressing discharges, emissions and losses of radioactive substances:

- PARCOM Recommendation 91/4 on Radioactive Discharges
- PARCOM Recommendation 93/5 on Increases in Radioactive Discharges from Nuclear Reprocessing Plants
- OSPAR Decision 2000/1 on Substantial Reductions and Elimination of Discharges, Emissions and Losses of Radioactive Substances, with Special Emphasis on Nuclear Reprocessing

Implementation reporting requirements related to OSPAR measures addressing monitoring and assessment:

- OSPAR Recommendation 2003/1 on the Strategy for the Joint Assessment and Monitoring Programme

Joint Assessment and Monitoring Programme (JAMP)

The 1992 OSPAR Convention contains a general obligation to collaborate in regular monitoring and assessment of the state of the marine environment in the maritime area. Annex IV to the Convention provides for cooperation in monitoring programmes, joint quality assurance arrangements, the development of scientific assessment tools, such as modelling, remote sensing and risk assessment strategies, and the preparation of assessments. In 1995 a Joint Assessment and Monitoring Programme was agreed to provide the basis for a comprehensive quality status report. In 2003, the Ministerial Meeting of the Commission adopted a new Strategy for the Joint Assessment and Monitoring Programme (JAMP). This sets out the overall strategy, gives a strategic overview of the assessments that are intended to be produced, and sets out, for each of the six themes (i.e. the general

quality status of the OSPAR maritime area and other general issues, protection and conservation of the ecosystems and biological diversity of the maritime area, combating eutrophication, hazardous substances, environmental goals and management mechanisms for offshore activities, and radioactive substances), the issues to be addressed, the tools to be developed, the data collection to be undertaken and the assessments to be produced. The Strategy provides for the preparation and publication of a series of thematic assessments, leading to a further comprehensive assessment in 2010. The JAMP sets out a framework for assessment and monitoring by OSPAR based upon tools, information collection systems and assessments. It will be implemented through the use of a variety of information collection systems, rather than one system of reporting. In many cases OSPAR Committees are still defining how these products will be prepared and considering what data will be available and how it can be made available. Thus the complete reporting requirements of the JAMP are still under development. Activities where Contracting Parties already report to OSPAR will form building blocks under the JAMP. Examples of these are the:

- the Co-ordinated Environmental Monitoring Programme (CEMP);
- the Co-ordinated Atmospheric Atmospheric Monitoring Programme (CAMP); and
- the Riverine and Direct Inputs Monitoring Programme.

The JAMP Implementation Plan sets out the work to take place between 2003 and 2009 on (i) monitoring and other data collection, (ii) the assessment of the aspects of the marine environment and (iii) the evaluation of the implementation of the thematic strategies in order to prepare for the 2010 Quality Status Report.

Reporting under OSPAR can be organised along a number of different lines, for example:

- For some aspects of the JAMP, OSPAR relies on contracts with other organizations for management of the data submitted by Contracting Parties, i.e. for the Co-ordinated Environmental Monitoring Programme (CEMP), ICES act as data managers.
- For other aspects of the JAMP, the OSPAR Secretariat manage the data submitted by Contracting Parties, e.g. Riverine and Direct Inputs Programme.
- For reporting on the implementation of measures, OSPAR relies on lead countries to whom Contracting Parties provide national reports. The lead countries prepare an overview report on the implementation of the measure in the Convention area.

Monitoring data and information is generally gathered in accordance with agreed OSPAR guidelines and procedures. These include the following:

- The OSPAR Guidelines for monitoring contaminants in sediments are employed in the implantation of the CEMP and concern techniques for sampling of sediments and their analysis for contaminants.
- The OSPAR Guidelines for Harmonised Quantification and Reporting Procedures for Nutrients (HARP-NUT) are employed in reporting on the implementation of PARCOM Recommendation on the reduction in inputs of nutrients to the Paris Convention area.

6. Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA)

Purpose: AEWA aims to conserve migratory waterbirds and their habitats. The AEWA covers 235 species of birds ecologically dependent on wetlands for at least part of their annual cycle (listed in Annex 2). The Agreement provides for co-ordinated and concerted actions to be taken by the Range states throughout the migration systems of the waterbirds to which it applies. Parties to the Agreement are called upon to engage in a wide range of conservation actions which are described in a comprehensive Action Plan (Annex 3). This detailed plan addresses such key issues as species and habitat conservation, management of human activities, research and monitoring, education and information, and implementation. One of the fundamental activities undertaken is a regular review of the status of each migratory waterbird population within the Agreement area.

Geographic Scope: Article 1(1) of AEWA provides that the geographic scope of the Agreement is "the area of the migration systems of African-Eurasian waterbirds, as defined in Annex 1 to this Agreement". Encompasses 117 countries from Europe, parts of Asia and Canada, the Middle East and Africa.

Principal Reporting Obligations:

1. ***Triennial National Report***

   Description: Report on the implementation of the Agreement with reference to conservation measures undertaken by each Party with respect to migratory waterbirds.

   Authority: AEWA Agreement, Article V(1)(c)

   Frequency: Every three years - to be submitted before each Meeting of the Parties. (The next Meeting of the Parties is to be held at the end of 2005 or early in 2006.

   Information Content: The reporting format is divided into three sections: 1) overview of Action Plan implementation; 2) structured questions related to each of the Action Plan headings; and 3) a series of appendices e.g. a list of sites of international importance for waterbird conservation. Parties are encouraged to describe progress made in implementing the Action Plan and to identify a programme of targets setting out future priorities for migratory waterbird conservation (optional). Information is to be provided under the following headings:

   - Overview of Action Plan implementation;
   - Species conservation – legal measures, single species action plans, emergency measures, re-establishments, introductions
   - Habitat conservation – habitat inventories, conservation of areas, rehabilitation and restoration
   - Management of human activities – hunting, eco-tourism, other human activities;
   - Research and monitoring – status of research and monitoring programmes for species;
   - Education and information – training and development programmes, raising public awareness;
   - Final comments; and
   - Progress to implement Resolutions and Recommendations of the Meeting of the Parties.

   Reporting Format: Resolution 3 of the First Meeting of the Parties (1999) adopts the format for the triennial national reports, which is presented in Document MoP1.14 Rev.1 (Format for Reports of the Parties).

2. ***Information on exemptions to the prohibition on the taking of listed bird species***

   Description: Parties with populations listed in Table 1 of Annex 3 are required to provide protection to those populations in accordance with paragraphs 2.1.1 and 2.1.2 of Annex 3. However, paragraph 2.1.3 provides that Parties may grant exemptions to the prohibitions in certain circumstances, and Parties are required to inform the AEWA Secretariat when any such exemptions are granted.

   Authority: AEWA Agreement, Annex 3, para. 2.1.3

   Frequency: The information should be provided as soon as possible. However, this reporting requirement is in fact satisfied through the triennial national report.

   Content: Exemptions to the prohibitions may be granted, where there is no other satisfactory solution, for the following purposes: 1) to prevent serious damage to crops, water and fisheries; 2) in the interests of air safety or other overriding public interests; 3) for the purpose of research and education, of re-establishment and for the breeding necessary for these purposes; 4) to permit under strictly supervised conditions, on a selective basis and to a limited extent, the taking and keeping or other judicious use of certain birds in small numbers; and 5) for the purpose of enhancing the propagation or survival of the populations concerned. Parties are required to provide information on any such exemptions that have been granted.

   Reporting Format: This reporting requirement is satisfied through the triennial national report, which includes a specific question on exemptions to the prohibition on the taking of listed bird species.

3. ***Notification of re-establishment programmes***

   Description: When re-establishing a population listed in Table 1 of Annex 3, Parties are required to develop and follow a detailed re-establishment plan based on appropriate scientific studies.

Parties are required to inform the AEWA Secretariat in advance, of all re-establishment programmes for populations listed in Table 1.

Authority: AEWA Agreement, Annex 3, para. 2.4

Frequency: Parties are required to notify the AEWA Secretariat in advance. However, this reporting requirement is in fact satisfied through the triennial national report.

Content: Parties are required to inform the AEWA Secretariat of all re-establishment programmes for populations listed in Table 1 of Annex 3.

Reporting Format: This reporting requirement is satisfied through the triennial national report, which includes a specific question on re-establishment programmes.

4. ***Information on hunting legislation***

Description: Parties are required to inform the AEWA Secretariat about their national legislation relating to the hunting of populations listed in Table 1 of Annex 3.

Authority: AEWA Agreement, Annex 3, para. 4.1.2

Frequency: The AEWA Secretariat must be kept informed (AEWA Agreement, Annex 3, para. 4.1.2), and this reporting requirement is in fact satisfied through the triennial national report.

Content: Information on national hunting legislation.

Reporting Format: This reporting requirement is satisfied through the triennial national report.

5. ***Estimates relating to total annual take for each population***

Description: Parties are required to provide the Secretariat with estimates, when available, of the total annual take for each population of species listed in Table 1 of Annex 3 to the Agreement.

Authority: AEWA Agreement, Annex 3, para. 4.1.3

Frequency: Annual reporting is implied, but paragraph 4.1.3 of Annex 3 of the AEWA Agreement state that information should be provided when available. However, this reporting requirement may be satisfied through the triennial national report.

Content: Estimates of the total annual take for each population listed in Table 1 of Annex 3.

Reporting Format: There is no specific format or method indicated. It may be that this reporting requirement is satisfied through the triennial national report.

6. ***Information on eco-tourism***

Description: Parties, in co-operation with competent international organisations, should endeavour to evaluate the costs, benefits and other consequences resulting from eco-tourism at selected wetlands with concentrations of populations listed in Table 1 of Annex 3. Parties are required to communicate the results of such evaluations to the AEWA Secretariat.

Authority: AEWA Agreement, Annex 3, para. 4.2.2

Frequency: May be accomplished through the triennial national.

Content:

Reporting Format: No specific format or method is indicated. May be accomplished through the triennial national report, which contains questions on eco-tourism.

7. ***Information on the damage caused by waterbird populations***

Description: Information about damage, in particular to crops, caused by populations listed in Table 1 of Annex 3.

Authority: AEWA Agreement, Annex 3, para. 4.3.2

Frequency: May be accomplished through the triennial national report.

Content: Parties shall endeavour to gather information on the damage, in particular to crops, caused by populations listed in Table 1 of Annex 3, and should report the results to the AEWA Secretariat.

Reporting Format: No format or method is indicated. May be accomplished through the triennial national report.

8. ***Report on progress made to phase out lead shot***

Description: Parties are required to report to each ordinary Meeting of the Parties on progress made to phase out lead shot in accordance with self-imposed and published timetables, and to specify how they plan to overcome any problems encountered.

Authority: Second Meeting of the Parties to AEWA, Resolution 2

Frequency: Every three years (approximately), at the ordinary Meeting of the Parties.

Content: Information on progress made to phase out lead shot in accordance with self-imposed and published timetables, and information on how it is planned to overcome any problems encountered.

Reporting Format: No format is provided. This reporting requirement may be satisfied through the triennial national report.

7. MARPOL Particularly Sensitive Sea Areas (PSSAs)

Purpose: In accordance with Annexes I, II and V of the International Convention for the Prevention of Marine Pollution from Ships, 1973 as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), certain sea areas can be defined as "special areas" in which, for technical reasons relating to their oceanographical and ecological condition and to their sea traffic, the adoption of special mandatory methods for the prevention of sea pollution is required. Under the Convention, these special areas are provided with a higher level of protection than other areas of the sea.

A Particularly Sensitive Sea Area (PSSA) is an area that needs special protection through action by IMO because of its significance for recognized ecological or socio-economic or scientific reasons, and which may be vulnerable to damage by international maritime activities. The criteria for the identification of PSSAs and the criteria for the designation of special areas are not mutually exclusive. In many cases a PSSA may be identified within a Special Area and vice versa.

There are currently six designated PSSAs:

- the Great Barrier Reef, Australia (designated a PSSA in 1990);
- the Sabana-Camagüey Archipelago in Cuba (1997);
- Malpelo Island, Colombia (2002);
- Around the Florida Keys, United States (2002);
- the Wadden Sea, Denmark, Germany, Netherlands (2002); and
- Paracas National Reserve, Peru (2003).

Guidelines on designating a PSSA are contained in resolution A.927(22) (*Guidelines for the Designation of Special Areas under MARPOL 73/78 and Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas*). These guidelines include criteria to allow areas to be designated a PSSA if they fulfil a number of criteria, including:

- ecological criteria, such as unique or rare ecosystem, diversity of the ecosystem or vulnerability to degradation by natural events or human activities;
- social, cultural and economic criteria, such as significance of the area for recreation or tourism; and
- scientific and educational criteria, such as biological research or historical value.

The purpose of the PSSA Guidelines is to provide guidance to IMO Member Governments in the formulation and submission of applications for designation of PSSAs; ensure that in that process all interests - those of the coastal State, flag State, and the environmental and shipping communities - are thoroughly considered on the basis of relevant scientific, technical, economic, and environmental

information regarding the area at risk of damage from international shipping activities and the protective measures to minimize that risk; and provide for the assessment of such applications by the IMO.

When an area is approved as a particularly sensitive sea area, specific measures can be used to control the maritime activities in that area, such as routeing measures, strict application of MARPOL discharge and equipment requirements for ships, such as oil tankers; and installation of Vessel Traffic Services (VTS). The designation provides an opportunity to utilise existing powers more effectively, regulate the passage of shipping through territorial sea and establish a managerial framework to address unacceptable environmental impacts.

Principal Reporting Obligations:

There are reporting requirements and monitoring responsibilities as a consequence of designation as a PSSA. These are, however, not clearly defined at the current time. The Southampton Institute feasibility study for the Wadden Sea PSSA designation indicated reporting requirements as a potential burden but with no clarity on the nature of reporting. The likelihood is that it would involve identification of restrictions and measures taken for enforcement, and reporting of pollution events or other incidents relating to shipping.

8. Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (Birds Directive)

Purpose: The aim of the Birds Directive is to provide for the protection, management and control of all naturally occurring wild birds and their nests, eggs and habitats within the European Union. It serves to ensure that all wild birds receive basic protection from trapping and killing; that sufficient habitat is protected to assure the survival of threatened and migratory species; that large-scale or non-selective means of taking birds are prohibited; and that the exploitation, sale or commercialisation of most species is prevented. Certain exceptions are made for legitimate sporting and hunting practices, and to allow governments to take action when birds pose serious risks for human health and safety, crops, livestock, fisheries, forests, water, or other flora and fauna. In particular, it seeks to protect all wild birds and the habitats of listed species through the designation of specially protected areas (SPAs), which are incorporated in the Natura 2000 network established by the Habitats Directive 92/43/EEC.

Article 4(1) provides that the species mentioned in Annex I shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution. There is considerable overlap between the species listed in Annex I and those that are monitored by TMAP. Under TMAP parameter 7.1 (numbers and distributions of breeding birds), several Annex I-listed species have been monitored, including:

- Shelduck, *Tadorna tadorna*;
- Hen Harrier, *Circus cyaneus*;
- Avocet, *Recurvirostra avosetta*;
- Kentish Plover, *Charadrius alexandrinus*;
- Dunlin, *Calidris alpine shinzii*;
- Ruff, *Philomachus pugnax*;
- Mediterranean Gull, *Larus melanocephalus*;
- Little Gull, *Larus minutes*;
- Gull-billed Tern, *Gelochelidon nilotica*;
- Sandwich Tern, *Sterna sandvicensis*;
- Common Tern, *Sterna hirundo*;
- Arctic Tern, *Sterna paradisaea*;
- Little Tern, *Sterna albifrons*; and
- Short-eared Owl, *Asio flammeus*.

Several Annex I-listed species have also been monitored under TMAP parameter 7.4 (monitoring of migratory birds). These include the following:

- Barnacle Goose, *Branta leucopsis*;

- Avocet, *Recurvirostra avosetta*;
- Golden Plover, *Pluvialis apricaria*;
- Ruff, *Philomachus pugnax*; and
- Bar-tailed Godwit, *Limosa lapponica.*

Geographic Scope: Europe (European Union)

Principal Reporting Obligations:

1. ***Information on protected species and areas***

   Description: Provision of all relevant information on protected species and areas to ensure the areas form a coherent whole.

   Authority: Birds Directive, Article 4(3).

   Frequency: One time only.

   Content: All relevant information on special conservation measures concerning the habitat of bird species listed in Annex I and similar measures for regularly occurring migratory bird species not listed in Annex I.

   Reporting Format: No format is specified. Accomplished through the Natura 2000 Questionnaire (see below).

2. ***Triennial Report***

   Description: Triennial report on the implementation of national provisions for the conservation of wild birds and their habitats.

   Authority: Birds Directive, Article12(1)

   Frequency: Every three years.

   Content: Information on the implementation of national provisions.

   Reporting Format: There is no specified format. This report tends to be submitted as a textual, article by article update on implementation progress.

3. ***Information on the practical applications of hunting regulations***

   Description: Member States must send all relevant information on the practical application of hunting regulations.

   Authority: Birds Directive, Article 7(4)

   Frequency: No specific reporting period is mentioned. Accomplished through the Triennial Report.

   Content: Information on the practical application of national hunting regulations.

   Reporting Format: No format is specified. Accomplished through the Triennial Report.

4. ***National report on derogations***

   Description: Member States must send national reports on derogations permitted under Articles 5, 6, 7 and 8 (that is, on exceptions and licenses granted for the taking or hunting of listed species).

   Authority: Birds Directive, Article 9(3)

   Frequency: Accomplished through the Triennial Report.

   Content: Information on exceptions and licenses granted for the taking or hunting of listed species.

   Reporting Format: Accomplished through the Triennial Report

5. ***Information on research and work required***

Description: Member States to provide information on research and work required for protection, management and use of populations of species referred to in Article 1 (all species of naturally occurring birds in the wild state).

Authority: Birds Directive, Article 10(2)

Frequency: No date is specified in Article 10(2) of the Birds Directive. Accomplished through the Triennial Report.

Content: Information on research and any work undertaken or required, to enable the Commission to take appropriate measures for the co-ordination of research and work required as a basis for the protection, management and use of the population of all bird species referred to in Article 1. Particular attention should be paid to research and work on the subjects listed in Annex V: 1) national lists of species in danger of extinction or particularly endangered species, taking into account their geographical distribution; 2) listing and ecological description of areas particularly important to migratory species on their migratory routes and as wintering and nesting grounds; 3) listing of data on the population levels of migratory species as shown by ringing; 4) assessing the influence of methods of taking wild birds on population levels; 5) developing or refining ecological methods for preventing the type of damage caused by birds; 6) determining the role of certain species as indicators of pollution; and 7) studying the adverse effect of chemical pollution on population levels of bird species.

Reporting Format: No format is specified. Accomplished through the Triennial Report, usually as a bibliography and/or list of published reports and studies.

6. ***Information on laws, regulations and administrative provisions***

Description: Member State to inform the European Commission when it brings into force laws, regulations and administrative provisions necessary to comply with the Birds Directive.

Authority: Birds Directive, Article 18(1)

Frequency: Within two years of the notification of the Directive. Normally accomplished through the Triennial Report.

Content: Information on laws, regulations and administrative provisions adopted to comply with the Birds Directive.

Reporting Format: No format is specified. Normally accomplished through the Triennial Report.

7. ***Information on national laws***

Description: Member States must communicate the texts of the main provisions of national law which they adopt in the field governed by the Birds Directive.

Authority: Birds Directive, Article 18(2)

Frequency: : Continuous. Normally accomplished through the Triennial Report.

Content: The texts of the main provisions of relevant national laws.

Reporting Format: No format is specified. Normally accomplished through the Triennial Report.

9. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive)

Purpose: The Council Directive 92/43/EEC 1992 (EC Habitat Directive) aims at the conservation of habitats of wild flora and fauna in the Member States of the European Union. In the framework of the Habitat Directive, a coherent ecological network, called NATURA 2000, is being established. NATURA 2000 will consist of Special Areas of Conservation (SACs) designated according to the Habitat Directive, and the SPAs of the Bird Directive (see above).

Article 3 of the Habitats Directive provides that the Natura 2000 network will be composed of sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II. Annex I includes salt marshes, beaches and dunes for which data is collected by TMAP (parameter 9.1 and 10.1). Annex II includes the Common Seal (*Phoca vitulina)* and Grey Seal (*Halichoerus grypus*) for which data is collected under TMAP (parameter 8.1).

Geographic Scope: Europe (European Union)

Principal Reporting Obligations:

1. ***Natura 2000 Questionnaire***

   Description: This questionnaire is the means by which Member States provide the necessary information on sites designated as Special Areas of Conservation (SACs) under the Habitats Directive and Special Protection Areas (SPAs) under the Birds Directive, to enable the Commission to create a coherent Natura 2000 Network and to evaluate its effectiveness for the conservation of habitats of migratory bird species.

   Authority: Habitats Directive, Article 4 (provides the legal basis in the Habitats Directive for the provision of information); Birds Directive, Article 4(3) (provides the legal basis in the Birds Directive for the provision of information).

   Frequency: Although indicated as being a "one time" requirement, there is an expectation that regular updating with a similar form will be introduced. Candidate countries will be required to designate Special Protection Areas under the Birds Directive and propose Sites of Community Interest under the Habitats Directive at the time of accession.

   Content: The form is divided into eight sections as follows: 1) site identification; 2) site location; 3) ecological information; 4) site description; 5) site protection status and relation with Corine biotopes; 6) impacts and activities in and around the site; 7) map of the site; and 8) slides. Information should be provided on the following:

   - Site code;
   - Relation with other Natura 2000 sites;
   - Respondent;
   - Site name;
   - Site indication and designation/classification dates;
   - Site centre location;
   - Area;
   - Site length;
   - Altitude;
   - Administrative region;
   - Biogeographic region;
   - Habitat types present on the site and site assessment for them;
   - Bird listed on Annex I of Council Directive 79/409/EEC;
   - Regularly occurring Migratory Birds not listed on Annex I of Council Directive 79/409/EEC;
   - Mammals listed on Annex II of Council Directive 92/43/EEC;
   - Amphibians and Reptiles listed on Annex II of Council Directive 92/43/EEC;
   - Fishes listed on Annex II of Council Directive 92/43/EEC;
   - Invertebrates listed on Annex II of Council Directive 92/43/EEC;
   - Plants listed on Annex II of Council Directive 92/43/EEC;
   - Other important species of flora and fauna;
   - General site character;
   - Quality and importance of site;
   - Vulnerability of site;
   - Site designation;
   - Ownership;
   - Documentation;
   - Designation types at national and regional level;

- Relation of the described site with other sites at national or regional level;
- Relation of the described site with other sites at the international level;
- Relation of the described site with corine biotopes sites;
- Impacts and activities within the site;
- Impacts and activities around the site;
- Body responsible for the site management;
- Site management and plans;
- Information on maps and aerial photographs provided; and
- Information on slides provided.

Reporting Format: Standard Data Form: EUR 15 Version.

2. ***List of sites***

Description: Member States to propose a list of sites indicating which natural habitat types in Annex I and species in Annex II that are native to its territory the sites host.

Authority: Habitats Directive, Article 4(1).

Frequency: Article 4(1) of the Habitats Directive states that the list shall be transmitted to the Commission within three years of the notification of the Directive. However, this reporting requirement is in fact satisfied through the Natura 2000 Questionnaire.

Content: A list of sites indicating which natural habitat types in Annex I and which species in Annex II that are native to its territory the sites host, together with information on each site. The information shall include a map of the site, its name, location, extent and the data resulting from application of the criteria specified in Annex III.

Reporting Format: Article 4(1) of the Habitats Directive states that a format is to be established by the Commission in accordance with the procedure laid down in Article 21. In fact, this reporting requirement is accomplished through the Natura 2000 Questionnaire.

3. Report on Implementation Measures

Description: Report on implementation measures taken under Article 6(1) and evaluation of their impact. (Essentially this is intended to report on all measures taken to implement the provisions of the Habitats Directive, including legislation, monitoring, research and other actions for habitat protection and restoration.)

Authority: Habitats Directive, Article 17

Frequency: A report is required every six years.

Content: The report includes, in particular, information concerning the conservation measures referred to in Article 6(1) of the Directive, as well as an evaluation of the impact of those measures on the conservation status of the natural habitat types of Annex I and the species in Annex II and the main results of the surveillance referred to in Article 11.

Reporting Format: Article 17 states that the Committee (established in accordance with Article 20) is to establish a format. However, the format is still being developed, especially as regards how 'favourable conservation status' will be defined.

4. ***Compensatory measures adopted***

Description: Competent national authorities must communicate to the Commission the compensatory measures adopted whenever a project must be carried out despite negative assessment of implications for the site.

Authority: Habitats Directive, Article 6(4)

Frequency: Continuous reporting requirement. Whenever compensatory measures are adopted. Member States may choose to include this information in the regular Report on Implementation Measures

Content:

Reporting Format: No specific format is provided. Member States may choose to include this information in the regular Report on Implementation Measures.

5. ***Information on surveillance***

Description: Member States to undertake surveillance of the conservation status of the natural habitats and species referred to in Article 2 of the Habitats Directive.

Authority: Habitats Directive, Article 11

Frequency: This is accomplished through the six-yearly Report on Implementation Measures.

Content: Information on surveillance of the conservation status of the natural habitats and species referred to in Article 2, with particular regard to priority natural habitat types and priority species.

Reporting Format: Accomplished through the Report on Implementation Measures.

6. ***Biennial Report on Derogations***

Description: Report on derogations (that is, on exceptions and licenses granted for the taking or hunting of listed species).

Authority: Habitats Directive, Article 16(2).

Frequency: A report should be submitted every two years.

Content: Information on derogations from the provisions of Articles 12, 13, 14 and 15 (a) and (b), in accordance with Article 16(1). Article 16(3) states that the reports shall specify: a) the species which are subject to the derogations and the reason for the derogation, including the nature of the risk, with, if appropriate, a reference to alternatives rejected and scientific data used; b) the means, devices or methods authorised for the capture or killing of animal species and the reasons for their use; c) the circumstances of when and where such derogations are granted; d) the authority empowered to declare and check that the required conditions obtain and to decide what means, devices or methods may be used, within what limits and by what agencies, and which persons are to carry out the task; and e) the supervisory measures used and the results obtained.

Reporting Format: Article 16(2) states that the Committee (set up in accordance with Article 20 of the Habitats Directive) shall establish the format for reports.

7. ***Information on research***

Description: Member States and the Commission to exchange information on research and scientific work (on habitat protection and restoration) in order to co-ordinate research at Member State and Commission level.

Authority: Habitats Directive, Article 18(1)

Frequency: This is a continuous reporting requirement. Accomplished through the national Report on Implementation Measures.

Content: Research and scientific work having regard to the objectives set out in Article 2 (conservation of natural habitats and of wild fauna and flora) and the obligation to undertake surveillance of the conservation status of natural habitats and species (Article 11).

Reporting Format: No format is specified. Accomplished through the Report on Implementation Measures.

8. ***Information on the deliberate introduction of species***

Description: Member States to assess the deliberate introduction into the wild of any non-native species to ensure that it is not prejudicial to natural habitats, fauna and flora.

Authority: Habitats Directive, Article 22(b)

Frequency: Information should be provided whenever a deliberate introduction of a non-native species is being considered/undertaken.

Content: Assessment of the deliberate introduction into the wild of any species which is not native.

Reporting Format: No format is specified.

9. ***Information on laws, regulations and administrative provisions***

Description: Member States to bring into force laws, regulations and administrative provisions necessary to comply with the Directive.

Authority: Habitats Directive, Article 23(1).

Frequency: Member States are required to bring such instruments into force within two years of the notification of the Directive. They are required to inform the Commission forthwith. In practice, this is accomplished through the Report on Implementation Measures.

Content: Notification of the laws, regulations and administrative provisions implemented to comply with the Habitats Directive.

Reporting Format: No format is specified. Accomplished through the Report on Implementation Measures.

10. ***Information on national laws***

Description: Member States shall communicate to the Commission the main provisions of national law which they adopt in the field covered by the Habitats Directive.

Authority: Habitats Directive, Article 23(3)

Frequency: Continuous reporting requirement. In practice, accomplished through the Report on Implementation Measures

Content: Information on the main provisions of national law adopted in the field covered by the Habitats Directive.

Reporting Format: No format is specified. Accomplished through the Report on Implementation Measures.

11. ***Estimates relating to co-financing***

Description: Member states shall send to the Commission their estimates relating to the Community co-financing which they consider necessary to allow them to meet their obligations under Article 6(1) of the Habitats Directive.

Authority: Habitats Directive, Article 8(1)

Frequency: Member States shall send "as appropriate" their estimates relating to Community co-financing.

Content: Member States are required to send estimates relating to the Community co-financing which they consider necessary to allow them to meet their obligations pursuant to Article 6(1).

Reporting Format: No format is specified.

10. Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy (Water Framework Directive)

Purpose: The purpose of the Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which:

- prevents further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems;
- promotes sustainable water use based on a long-term protection of available water resources;

- aims at enhanced protection and improvement of the aquatic environment, inter alia, through specific measures for the progressive reduction of discharges, emissions and losses of priority substances and the cessation or phasing-out of discharges, emissions and losses of the priority hazardous substances;
- ensures the progressive reduction of pollution of groundwater and prevents its further pollution, and
- contributes to mitigating the effects of floods and droughts.

Geographic Scope: Europe (European Union)

Principal Reporting Obligations:

1. ***Notification of an issue which has an impact on water management***

   Description: Where a Member State identifies an issue which has an impact on the management of its water but cannot be resolved by that Member State, it may report the issue to the Commission and any other Member State concerned and may make recommendations for the resolution of it.

   Authority: EU Water Framework Directive, Article 12(1).

   Frequency: As required.

   Content: Information on an issue which has an impact on the management of water and recommendations for its resolution.

   Reporting Format: No format is specified.

2. ***River Basin Management Plans***

   Description: Copies of river basin management plans for (a) for river basin districts falling entirely within the territory of a Member State, all river management plans covering that national territory and published pursuant to Article 13; or (b) for international river basin districts, at least the part of the river basin management plans covering the territory of the Member State.

   Authority: EU Water Framework Directive, Article 15(1)

   Frequency: Under Article 13(6), river basin management plans should be published at the latest nine years after the date of entry into force of the Directive (i.e. by 20 December 2009). Copies of the plans should be sent to the Commission within three months of their publication.

   Content: Annex VII lists the information that should be included in the plans:

   1. a general description of the characteristics of the river basin district required under Article 5 and Annex II. This shall include:
   1.1. for surface waters:
   - mapping of the location and boundaries of water bodies,
   - mapping of the ecoregions and surface water body types within the river basin,
   - identification of reference conditions for the surface water body types;
   1.2. for groundwaters:
   - mapping of the location and boundaries of groundwater bodies;
   2. a summary of significant pressures and impact of human activity on the status of surface water and groundwater, including:
   - estimation of point source pollution,
   - estimation of diffuse source pollution, including a summary of land use,
   - estimation of pressures on the quantitative status of water including abstractions,
   - analysis of other impacts of human activity on the status of water;
   3. identification and mapping of protected areas as required by Article 6 and Annex IV;
   4. a map of the monitoring networks established for the purposes of Article 8 and Annex V, and a presentation in map form of the results of the monitoring programmes carried out under those provisions for the status of:
   4.1. surface water (ecological and chemical);
   4.2. groundwater (chemical and quantitative);
   4.3. protected areas;

5. a list of the environmental objectives established under Article 4 for surface waters, groundwaters and protected areas, including in particular identification of instances where use has been made of Article 4(4), (5), (6) and (7), and the associated information required under that Article;
6. a summary of the economic analysis of water use as required by Article 5 and Annex III;
7. a summary of the programme or programmes of measures adopted under Article 11, including the ways in which the objectives established under Article 4 are thereby to be achieved;
7.1. a summary of the measures required to implement Community legislation for the protection of water;
7.2. a report on the practical steps and measures taken to apply the principle of recovery of the costs of water use in accordance with Article 9;
7.3. a summary of the measures taken to meet the requirements of Article 7;
7.4. a summary of the controls on abstraction and impoundment of water, including reference to the registers and identifications of the cases where exemptions have been made under Article 11(3)(e);
7.5. a summary of the controls adopted for point source discharges and other activities with an impact on the status of water in accordance with the provisions of Article 11(3)(g) and 11(3)(i);
7.6. an identification of the cases where direct discharges to groundwater have been authorised in accordance with the provisions of Article 11(3)(j);
7.7. a summary of the measures taken in accordance with Article 16 on priority substances;
7.8. a summary of the measures taken to prevent or reduce the impact of accidental pollution incidents;
7.9. a summary of the measures taken under Article 11(5) for bodies of water which are unlikely to achieve the objectives set out under Article 4;
7.10. details of the supplementary measures identified as necessary in order to meet the environmental objectives established;
7.11. details of the measures taken to avoid increase in pollution of marine waters in accordance with Article 11(6);
8. a register of any more detailed programmes and management plans for the river basin district dealing with particular sub-basins, sectors, issues or water types, together with a summary of their contents;
9. a summary of the public information and consultation measures taken, their results and the changes to the plan made as a consequence;
10. a list of competent authorities in accordance with Annex I;
11. the contact points and procedures for obtaining the background documentation and information referred to in Article 14(1), and in particular details of the control measures adopted in accordance with Article 11(3)(g) and 11(3)(i) and of the actual monitoring data gathered in accordance with Article 8 and Annex V.

Reporting Format: A list of the information that should be included is provided in Annex VII.

3. ***Updates of River Basin Management Plans***

Description: Copies of updates to river basin management plans for (a) for river basin districts falling entirely within the territory of a Member State, all river management plans covering that national territory and published pursuant to Article 13; and (b) for international river basin districts, at least the part of the river basin management plans covering the territory of the Member State.

Authority: EU Water Framework Directive, Article 15(1)

Frequency: According to Article 13(7), river basin management plans should be reviewed ad updated at the latest 15 years after the date of entry into force of the Directive (i.e. by 20 December 2015) and every six years thereafter. Copies of the update should be sent to the Commission within three months of their publication.

Content: Annex VII lists the information that should be included in the first river basin management plan (see above). In addition the following information should also be provided:

- a summary of any changes or updates since the publication of the previous version of the river basin management plan, including a summary of the reviews to be carried out under Article 4(4), (5), (6) and (7);
- an assessment of the progress made towards the achievement of the environmental objectives, including presentation of the monitoring results for the period of the previous plan in map form, and an explanation for any environmental objectives which have not been reached;
- a summary of, and an explanation for, any measures foreseen in the earlier version of the river basin management plan which have not been undertaken; and
- a summary of any additional interim measures adopted under Article 11(5) since the publication of the previous version of the river basin management plan.

Reporting Format: A list of the information that should be included is provided in Annex VII.

4. *Summary report of the analyses required under Article 5*

Description: Article 5 requires that each Member State undertakes an analysis for each river basin district or for the portion of an international river basin district falling within its territory. This analysis should be undertaken in accordance with the technical specifications set out in Annexes II and III.

Authority: EU Water Framework Directive, Article 15(2).

Frequency: The review should be completed at the latest four years after the date of entry into force of the Directive (i.e. by 20 December 2004).

Content: Under Article 5, the analysis should include:

- an analysis of its characteristics;
- a review of the impact of human activity on the status of surface waters and on groundwater; and
- an economic analysis of water use.

A summary report of this analysis is required.

Reporting Format: No specific format for the summary report is provided.

5. *Updates of summary report of the analyses required under Article 5*

Description: Article 5 requires that each Member State reviews and, if necessary, updates the analysis undertaken for each river basin district or for the portion of an international river basin district falling within its territory. This analysis should be undertaken in accordance with the technical specifications set out in Annexes II and III.

Authority: EU Water Framework Directive, Article 15(2).

Frequency: The review should be completed at the latest thirteen years after the date of entry into force of the Directive (i.e. by 20 December 2013) and every six years thereafter.

Content: Under Article 5, the updating analysis should include:

- an analysis of its characteristics;
- a review of the impact of human activity on the status of surface waters and on groundwater; and
- an economic analysis of water use.

A summary report of this updating analysis is required.

Reporting Format: No specific format for the summary report is provided.

6. *Summary report of monitoring programmes*

Description: Summary report on the monitoring programmes designed under Article 8 of the Directive undertaken for the purposes of the first river basin management plan.

Authority: EU Framework Directive, Article 15(2).

Frequency: The monitoring programmes outlined in Article 8 should be operational at the latest six years after the date of entry into force of the Directive (i.e. by 20 December 2006). The summary report should be submitted to the Commission within three months of its completion

Content: Under Article 8, monitoring programmes should include the following:
- for surface waters such programmes shall cover:
(i) the volume and level or rate of flow to the extent relevant for ecological and chemical status and ecological potential, and
(ii) the ecological and chemical status and ecological potential;
- for groundwaters such programmes shall cover monitoring of the chemical and quantitative status,
- for protected areas the above programmes shall be supplemented by those specifications contained in Community legislation under which the individual protected areas have been established.

Monitoring programmes should be in accordance with the requirements of Annex V, which is included as Appendix 1.

Reporting Format: No specific format is provided.

7. ***Interim report***

Description: Within three years of the publication of each river basin management plan or update, Member States should submit an interim report describing progress in the implementation of the planned programme of measures.

Authority: EU Water Framework Directive, Article 15(3)

Frequency: Within three years of the publication of each river basin management plan or update.

Content: Information on progress made towards the implementation of the planned programme of measures.

Reporting Format: No format is specified.