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Working Group on the State of the Environment and Nature
Conservation

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Document title	Proposal for the revision of the monitoring guidelines for the sub-programmes: hydrography, hydrochemistry, marine birds health, health status of mammals and biological effects of contaminants (TBT/imposex)
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Submitted by	Sweden
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Background

The review of the COMBINE manual and need to develop new monitoring guidelines for topics lacking guidelines was discussed at the second meeting of State and Conservation. A Lead Country approach was agreed for the review and development of specific HELCOM monitoring guidelines. The role of Lead Countries is to review the existing guidelines, taking into account the information on current use of monitoring guidelines provided by Contracting Parties through the previous reporting request, and to present a proposal on how the guidelines could be updated to State and Conservation 3-2015.

This document contains a proposal by Sweden for the revision of the monitoring guidelines for the sub-programmes: hydrography, hydrochemistry, marine birds health, health status of mammals and biological effects of contaminants (TBT/imposex).

Action required

The Meeting is invited to consider the proposal and agree on a working arrangement for revising the guidelines in question.

Proposal for the revision of the monitoring guidelines for the sub-programmes: hydrography, hydrochemistry, marine birds health, health status of mammals and biological effects of contaminants (TBT/imposex)

Revision of hydrography and hydrochemistry

General considerations

Monitoring guidelines for hydrography and hydrochemistry should be revised in detail. This encompasses methodologies and structure. Until now the guidelines are lacking a clear structure. They include a lot of redundant information. Furthermore the version management could be improved.

It should be discussed in which form the monitoring guidelines should be distributed or read. Until now the guidelines are customized for offline reading. There is a chance to include the adjustment of the guidelines to digital search and reading.

Prerequisites for the revision of the monitoring guidelines:

- It should be decided in which form the guidelines will be distributed: web- or paper-based.

Suggestions for the revision

When revising the methods of the guidelines, the Lead Country should take into account the information on current use of monitoring guidelines provided by Contracting Parties. A working group lead by the Lead Country should be assembled, consisting of contracting parties with an interest of and input to the monitoring guidelines. The involvement of more than one contracting party creates better guidelines and facilitates confirmation of updated guidelines.

A suggestion concerning revising the structure of the guidelines, is that the HELCOM Secretariat takes an active part in the revision.

Example of methodological changes

The current methodology concerning pH should be revised. There are methods concerning spectrophotometric measurement techniques that should be included and specified.

Examples of details to be addressed during revision

- Alkalinity: There are inconsistencies with stated references (e.g. Grasshoff 1999) which should be corrected
- pH: the calculation of in-situ pH should be included
- nutrients:
 - chapter about "Correction for turbidity, salinity or hydrogen sulphide" should be revised and the description for the correction of turbidity must be clarified
 - the table about "minimal requirements" must be revised
- C2 – general: some protocols for CTD could be excluded, because the information is saved automatically
- C2 – 4.4: the description of negative oxygen should be revised
- C2 – 4.5: the table should be revised and structured to make the table easier to understand
- C2 - 4.8: there is no description of how to measure the Secchi depth
- C2 - 3: Sampling depth 90 m is missing

Examples of editorial changes

- Update of addresses in the guidelines
- Update of the station registry (stations and frequency) – after national consultation

- pH and alkalinity should be addressed as monitoring parameters and just as supporting parameters for primary production
- methods should be described in one chapter and not spread out all over the document
- information about quality management should be restricted in the quality chapter and not elsewhere

Guideline for Reproductive status of marine mammals

Karin Hårding, University of Gothenburg, Sweden

General considerations

To write the new guideline for the monitoring needed for the follow-up of the indicator 'Reproductive status in marine mammals' information from the various national programs for health status of seals will be compiled.

The starting point is the manual (and access to veterinarians responsible for additional information) on how the investigations of the collected animals are handled at the Swedish Museum for Natural History, where long time series of reproductive data exist. It is important that the new procedures overlap with existing so that new data is comparable with the historical time series in all the national programs.

Input needed from other Contracting Parties

Descriptions of dissection protocols and procedures for sampling and analyses of collected seals are needed from all other countries concerned. An inquiry will soon be sent out to concerned CPs.

References to be used

Naturvårdsverkets undersökningstyp: Patologi hos gråsäl, vikaresäl och knobbsäl. Version 1:1, 2014-03-18

Harding, KC, BM Bäcklin, C. Moraeus, K. Kauhala, U. Siebert, Lena Avellan and Tero Härkönen. HELCOM 2015 Reproductive status in marine mammals. Unpublished.

Also: Several scientific articles by K. Kauhala, BM Brooks Ling, K Hårding E. Helle, U. Siebert, A. Bergman and T. Härkönen et al.

Guideline for monitoring of White-tailed eagle productivity

Peter Hellström, Swedish Museum of Natural History

The HELCOM monitoring guidelines for the indicator White-tailed eagle productivity will to a large extent be based on 1) the HELCOM indicator report for this indicator updated and prepared by Björn Helander in 2015 and 2) the “survey type” document describing the National Monitoring programme of white-tailed eagle in Sweden, originally prepared by Björn Helander and updated by Peter Hellström. The updated version will be delivered to the Swedish EPA by late-October 2015 (the previous version dates back to 2004). The available main documents describing white-tailed eagle monitoring particularly describe Swedish monitoring activities, since Sweden has the longest history of white-tailed eagle monitoring. But it will be of importance to compile more information from other HELCOM countries as well. Although the main parts of the HELCOM guideline document can be re-used from previously published scientific articles and monitoring reports, there remains some work to be done, particularly in the areas definitions, calculations and data storage. I have commented below subject headers. The general form of the guidelines document looks overall good, and I’m certain that the suggested layout will work out well.

Most of the work necessary to complete the guidelines can be done by the lead CP, without major input from other countries. There exists a substantial amount of information that was compiled for the HELCOM indicator report. The necessary input from other CP:s largely amounts to discussions on common monitoring criteria (how to classify observations). More specifically, I would also like to arrange a meeting with Finnish CP:s to study their database and reporting system (I have already discussed such a meeting with the Finnish CP:s, but I would like to emphasize it here as well).

1. Background

This information is readily available from already published sources, so it will mostly be a “copy-paste” activity.

1.1. Introduction

1.2. Purpose and aims

2. Monitoring methods

2.1. Monitoring features

Special emphasis must be given to establish definitions and common criteria. Robust criteria that can separate non-breeding from breeding eagle pairs given different methodology (helicopter surveys, nest controls and controls from below nests) must be defined in a better way than currently available. There are several classification schemes of white-tailed eagle breeding activities in circulation, and although the differences are rather minor, this can add confusion and uncertainty.

2.2. Time and area

(Nothing to add at present)

2.4. Monitoring procedure

2.4.1. Monitoring strategy

This section should be compiled from already published sources.

2.4.2. Sampling method(s) and equipment

This section will list different nest survey methods and their respective pros and cons, and how different methods can affect the data and the associated indicator. Safety issues must not be ignored.

2.4.3. Sample handling and analysis

No biological samples are directly used in this indicator (the indicator is based on field work only and no lab work), but material such as moulted feathers and prey remains are collected in most countries during nests visits. Additionally, blood samples and feathers from young birds are being collected in some countries. A short section on how such samples should be stored in both short and long-term perspectives would be valuable to add to the document, but will not be given top priority.

2.5. Data analysis

The necessary calculations for the indicator are broadly described in the HELCOM indicator report from 2015, but it will be necessary to update and clarify this information with better mathematical equations and most importantly more transparent definitions of survey variables (see 2.1). Also, so far only point estimates have been calculated for this indicator. Methods for calculating confidence intervals and precision, as well as quantifying survey uncertainty should be developed (although this is partly beyond the scope of the preparation of the guidelines document). Correction factors for different survey methods are necessary (observing nests only from the ground underestimates nestling production, as compared to climbing to the nest and observing the true brood size). How to best calculate this correction factor has not been evaluated. The question is to whether to use a common correction factor across years and countries, or if different correction factors should be used for each year and country. There remains quite some statistical work to be done in the future, but I suspect that a full evaluation of statistical methods is again beyond the scope of the guidelines.

3. Data reporting and storage

An Excel-spreadsheet was developed during the work with the indicator report this year. This spreadsheet will be developed further to allow automatic calculations of point estimates. It is important to note that the information that is available to the lead researcher is compilations (or frequency tables) of the original surveys classified according to breeding outcomes. We will thus not have access to the full raw data, since there is no common database framework for white-tailed eagle monitoring. Finland has so far the best solution, and we will inspect the Finnish database and evaluate how and if it is possible to design a relatively common data structure.

4. Quality control

4.1. Quality control of methods

This step must be done by each country, and I will therefore stress the importance of common monitoring criteria to make sure that all data is evaluated in the same way. The most difficult parts are to differentiate if an eagle territory is occupied, and in case it is – if the eagles have initiated a breeding attempt or not.

4.2. Quality control of data and reporting

A common data structure always increases quality of the data. We will also establish a quick check-list to make sure that each country can perform the quality control of the data before submitting it to the data host.

5. Contacts and references

5.1. Contact persons

There already exists a rather “tight” network of eagle researchers around the Baltic, so the contact persons are already identified.

5.2. References

I will try to add publications from all countries, where and if relevant. The indicator report is somewhat biased towards Swedish references, and it would be valuable to compile recent publications from other monitoring programmes as well.

5.3. Additional literature

(Nothing to add at present)

Guideline for TBT and imposex

Marina Magnusson, Marine Monitoring AB

General considerations

The starting point is the Swedish manual on how the imposex analyses are done within the Swedish national monitoring program today as well as the core indicator report. Thus it is of importance that the core indicator report is finalised as soon as possible.

Input needed from other contracting parties

Information on on-going monitoring activities. Which species and protocols are used?

References to be used:

- Core indicator report (what is the status?)
- Naturvårdsverkets undersökningstyp: Biologisk effektövervakning av organiska tennföreningar. Version 1:1, 2015-04-23.
- Schulte-Oehlmann, U., Oehlmann, J., Fioroni, P., and Bauer, B. 1997 "Imposex and reproductive failure in *Hydrobia ulvae* (Gastropoda: Prosobranchia)". *Marine Biology* (1997) 128: 257-266.
- Stroben, E., Oehlmann, J. and Fioroni, P., 1992. The morphological expression of imposex in *Hinia reticulata* (Gastropoda: Buccinidae): a potential indicator of tributyltin pollution. *Mar. Biol.* 113: 625-636.
- OSPAR 2008-9, "Guidelines for contaminant-specific biological effects monitoring (TBT-specific biological effects monitoring)". OSPAR Commission, Ref No 2008-9, Technical Annex 3.
- Strand, J., NOVANA, Teknisk anvisning for marin overvågning 4.6 Biologisk effektmonitoring– imposex og intersex i havsnegle
- OSPAR Commission, 2008: 2007/2008 CEMP Assessment - Trends and concentrations of selected hazardous substances in the marine environment, ISBN 978-1-906840-19-8, Publication Number 378/2008