New table

| Meeting presentation # / name of the presenter / *project (or topic)* | Proposed assessment / approach | Ecosystem components addressed and ecological relevance? | Policy management relevance | Data requirements | Possible gaps? | Strength(s) and weakness(es) | Question and Comments |
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| **Presentation 3 / Henrik Nygård /** *HELCOM Biodiversity Assessment tool, BEAT* | • BEAT tool to be applied for assessing food webs | Within this Third version of the BEAT tool, there is integration of indicators to assess five ecosystems components:<br>1. fish,<br>2. birds,<br>3. mammals,<br>4. pelagic habits,<br>5. benthic habitats<br>  | Some trophic guilds are asessment for MSFD D4 and BSAP. | Data is available but some indicators are not available, for exemple for filter-feeders, deposit-feeders, planktivores and sub-apex demersal predtors | changes between components should be taken into account more ( e.g. food web analyses could address how much of herring can be extracted without compromising energy provided to consumer level (e.g. marine mammals)) | • **Strengths:**<br>  • Available tool **fitting into the "HOLAS structure"**<br>  • Building on existing indicators<br>  • Covering **many ecosystem components** and trophic guilds<br>  • Can identify trophic guilds that are in **good/bad status (i.e. threshold values)**<br>  • Possible to estimate confidence of assessment<br>• **Weakness:**<br>  • Ecological relevance?<br>  • Indicators may respond to different pressures!<br>  • Does not consider balance between trophic guilds (cf. MSFD D4C2)<br>  • Status (cf. biodiversity indicators) vs. food web balance is not necessarily comparable | • It is hard to say if food webs are in **good** or **bad status**.<br>• BEAT worked for HOLAS III but might need something more customized for the future.<br>• Indicators are always made in different ways, it is hard to compare 1 tool to another!<br>• Additional assessments are currently going on in ICES WGIAB (WG on Integrated Assessments of the Baltic Sea)<br>• There is a need of using the last knowledge available and not to repeat what has been done before<br>• We need more cause / effects and links between the ecological components |
| **Presentation 4 / Henn Ojaveer /** *BONUS XWEBS project* | • Review of food web indicators available for the Baltic Sea. | Many relevant indicators identified from HELCOM and ICES:<br>• Fish (12)<br>• Birds (3)<br>• seals (4)<br>• Plankton (6)<br>• Benthos (1)<br>• Varia (1) (i.e. drowned marine mammals and birds in fishing gears) | GUILDS<br>✓ At least one primary food-web indicator for primary and secondary producers, planktivores and sub-apex predators;<br>✓ No food-web indicators for planktonic and benthic planktivores (jellies and mysids);<br>✓ No primary food-web indicators for filter feeders, deposit feeders and apex predators.<br><br>GROUPS<br>✓ At least one primary food-web indicator for three taxonomic groups (phytoplankton, zooplankton and fish) to cover both MSFD D4 primary criteria (i.e. D4C1 and D4C2)<br>✓ No primary food-web indicators for benthos, seabirds and marine mammals. | Most food-web indicators well-supplied with past and ongoing data and have sufficient temporal coverage, and are technically rigorous with generally estimable management threshold targets; | • Several indicators only partly reflect changes that are caused exclusively by manageable pressures. | • **Strengths:**<br>  •<br>  •<br>• **Weakness:**<br>  • Spatial coverage variable, often challenging | Guidance for HELCOM indicators is important to classify primary / secondary indicator for instance for assessing food webs. This is important science-based information. |
| **Presentation 5 / Jens Olsson /Lena Bergström** *Coastal fish indicators and assessment* | Assessment of fish coastal species | Work on coastal fish speies as relevant indicators for food webs (i.e, piscivores, cyprinids and mesopredators)<br><br>References point and threshold values compared with values from the assessment period to see potential changes | MSFD criteria D4C2.<br>Piscivores: weak with declinig populations<br>-->reduce fishing pressures, restore haitat, reduce eutrophication. etc.<br><br>Cyprinids and mesopredators: increasing population:<br>--> restore habitats, reduce fishing pressures, etc. | Data are needed to capture the stock dynamics to be able to detect changes. So longer timese series (twice as the assessment period) are important.<br><br>Confidence can be assessed by comparing the distribution of values between reference period and assessed period | | • **Strengths:**<br>  •<br>  •<br>• **Weakness:**<br>  • **length for time series is going to affect the results** | |
| **Presentation 6 / Henn Ojaveer /** *NIS* | Meta-analysis on the ecological impacts of widely spread NIS in the Baltic Sea.<br>Literature survey on impacts of NIS on food webs | • Widepsread NIS species when occuring in more than 50% of the countries (= total of 25 taxa) | • D2 of MSFD to evaluate effects size of NIS.<br>• For 60% of widepread NIS, quantitative impact estimates either totally lacking (9 species) or 1-2 studies only (6 species)<br>• Strong imformation bias on the effects on biotic properties; about half of evidences on population size of native species<br>• Fish species impacted the most: pelagic realm affected | Literrature overview: there is poor information base until the early 2000s. Very dependant on data. | Bias on data (availability and spatial data) | • **Strengths:**<br>  • Evidence-based quantitative assessment,<br>  • simple and robust,<br>  • Aggregation across data, ecosystem features and spatial scales<br>• **Weakness: mostly on data**<br>  • Spatial bias<br>  • Taxonomic bias<br>  • Effect of con-fouding factors often unclear | • Selection of studies used by this research could be biased also even though the team research identified clear criteria to select relevant papers.<br>• Is it relevant for food webs interpretation? |
| **Presentation 7 / Marie Nordström /** *BONUS BLUEWEBS project* | Blue growth boundaries in novel Baltic food webs, assessing past and recent changes in the Baltic Sea food webs.<br>It shows 5 periods with distinct foodweb characteristikcs in the Gulf of Riga. | Ecological intereaction networks used to quantify food webs (in Gulf of Riga: 34 taxa and 207 links) Network structure can be quantified using metrerings, connectance, omnivory,etc. | | Data gaps and monitoring needs: very challenging finding. Based on existing data sources. | | **each approach (unweighted, node-weighted, link-weighted) all with different advantages and limitations.** | What about management and threshold values? |
| **Presentation 8 / Ulrike Schükel /** *Ecological Network Analysis including a very brief overview of the other OSPAR food web indicators* | OSPAR has common and candidates food webindicators:<br>common indicators:<br>• size composition of fish communities<br>• change in average trophic level<br>• marine predators in the Bay of Biscay<br>• Changes in plankton functional types<br>• indexx ratio<br>There isalso an ENA - multitrophic analysis indicator with a more holistic approach | Identifying most important trophodynamic links and keystone species in the food web. | | • community composition<br>• abundance and biomass<br>• population energetics<br>• diet composition<br>--> it is needed to know who eats what and how much!<br><br>Lot of data needed (isotopes, etc.). Data call needed and a database to store and make available the information.<br><br>R package for ENA. | | **Weakness:**<br>• need lot of information to get the data for the Baltic Sea. A common database is a good solution for cooperative effort to fill in papers, etc. | |