

Working Group on Biodiversity (WGBIODIV)

2015/MA2/SSGEPD01 The Working Group on Biodiversity (WGBIODIV), chaired by W. Nikolaus Probst, Germany, and Oscar Bos, the Netherlands, will work on ToRs and generate deliverables as listed in the Table below.

	MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
Year 2016	8–12 February	San Sebastian, Spain	Interim report by 30 April to SSGEPD	
Year 2017	6–10 February	Venice, Italy	Interim report by 15 April to SSGEPD	
Year 2018	5–9 February	Copenhagen, Denmark	Final report by 15 April to SCICOM	

ToR descriptors

ToR	Description	Background	Science Plan priorities addressed	Duration	Expected Deliverables
a	<p>Develop the use of biodiversity metrics (e.g. species richness and species evenness indices) to inform on the status of ecosystem components at the community level (fish, mammals, seabirds, plankton, epi-benthos, macro-algae) to support implementation of ecosystem-based management. This task encompasses:</p> <p>1a. Establish a sound theoretical basis relating variation in biodiversity metric values to changes in anthropogenic pressure on marine communities (e.g. incorporating components of community size and trophic structure into the derivation of biodiversity metrics, taking account of linkage to habitat types and consideration of spatial pattern).</p> <p>Update: ToR1a may require further work beyond next years' meeting and may extend into in the next term (2018–2020), as the development of indicator concepts is time consuming.</p> <p>1b. Explore the issue of sampling size dependence to derive a robust protocol for calculating biodiversity metrics so that their sensitivity to underlying drivers is maximized,</p>	<p>Initiatives to revise the EC Decision of 2010 suggest that metrics for the ecosystem level of biodiversity may simply not be possible given the current level of scientific knowledge. Instead metrics at community level may be achievable, and indeed community level metrics represent the logical progression from species level and habitat level in that communities represent the collection of species that occupy a habitat. In applying criteria to assess the performance of different community-level metrics, metrics of species diversity have routinely performed below par. A major shortcoming in their performance has been the lack of a sound and well understood theoretical basis to explain the relationship between pressure and state. Without this understanding, it has always been assumed that it would be difficult to formulate sound reliable scientific advice to support management based on observed variation in species diversity indicators. Consequently the community level indicators that have been used to support EAM initiatives, such as the OSPAR EcoQO pilot study and</p>	1, 5, 9, 11, 12, 13,16,18,	3 years	<ol style="list-style-type: none"> 1. Protocol on the development of theoretical concepts of biodiversity indicators (2016/2017). 2. Combined analysis and review on impacts of sampling size on performance of biodiversity metrics (2016-2018). 3. Analysis on aggregating biodiversity indicators at different levels (species group, community, ecosystem) (2017/2018). 4. Quality assessment of investigated biodiversity indicators according to WGBIODIV criteria (2018). 5. One or more operational indicators to assess biodiversity at the community and eventually the ecosystem level (2018).

and the 'noise' associated with sampling effects is minimized (e.g. procedures for sample aggregation, modeling of individual species distribution to derive point-diversity estimates).

1c. Assess the "ecosystem level" assessment of biodiversity by considering how community-level biodiversity metrics might be aggregated across communities (e.g. integrated ecosystem assessments of biodiversity).

Update: ToR1c may not be addressed during the 2016–2018 term as the development of trait-based indicators will not be completed until 2018.

1d. Apply the WGBIODIV quality criteria to assess the performance of state indicators to assess the performance of any biodiversity indicators proposed and developed by WGBIODIV to show whether previous weaknesses in such metrics have been addressed.

Update: ToR1d may have to be addressed in the next term (2018–2020) as the development of the new WGBIODIV biodiversity indicators may not be finalised in 2018.

currently to fulfill the indicator 1.7.1 role for the MSFD focus on size based indicators such as the large fish indicator. Given the species diversity indicators would appear to be the most obvious candidates for metrics to fulfill the community-level indicator role in D1, the maintenance of biological diversity, the time is clearly ripe for the theoretical shortcomings in these indicators to be addressed so that they can be used to monitor change in biodiversity within marine communities.

Summary of the Work Plan

Year 1	Provide theoretical background for several Biodiversity metrics; Collate reference data for comparison of Biodiversity metrics
Year 2	Calculate biodiversity metrics using reference data, provide overview and comparison of outcomes
Year 3	Evaluate biodiversity indicators according to WGBIODIV indicator quality criteria

Supporting information

Priority	The current activities of this group will lead ICES into issues related to the integrated ecosystem assessments and the implementation of the ecosystem approach to marine management. Consequently, these activities are considered to have a very high priority.
Justification for venue 2017 (in non-ICES member country)	This venue was selected to facilitate the participation of scientists from the Mediterranean area and to improve the exchange of science and communication on biodiversity topics within Europe. The 2016 meeting was held in San Sebastian for the same reason and helped to recruit several new members to WGBIODIV.
Resource requirements	The research programmes which provide the main input to this group are already underway, and resources are already committed. The additional resource lies in the commitment of scientist from different member states to participate in the group.
Participants	WGBIODIV usually hosts 6-10 members and guests. It was decided to choose meeting

	locations in Spain (2016) and Italy (2017) to integrate new members from institutions, which are usually not able to come to Copenhagen. It is also envisioned to collaborate with the OSPAR Working Group on Fish & Cephalopods. These steps intend to widen the field of expertise available to the group, which currently consists mainly on experts on fish, plankton and benthos.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to ACOM and group under ACOM	There is a linkage to ACOM/SCICOM steering group Integrated Ecosystem assessments (IEA). The results of WGBIODIV are important to WGECO and may be of relevance for WGINOSE and WGIAB.
Linkages to other committees or groups	The outcomes of WGBIODV will be important to the ICES high priority work area 'Marine Strategy Framework Directive (MSFD)'.
Linkages to other organization	OSPAR, HELCOM, European Commission