Working Group on Multispecies Assessment Methods (WGSAM)

2015/MA2/SSGEPI14 The **Working Group on Multispecies Assessment Methods** (WGSAM), chaired by Sarah Gaichas*, USA, and Daniel Howell, Norway (year 2016); then Sarah Gaichas, USA and Alexander Kempf*, Germany (years 2017 & 2018), 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	10-14 October	Iceland	Interim report by 1 December to SSGEPI	
Year 2017	TBA	TBA	Interim report by DATE to SSGEPI	**Change of Co-Chair**: *Outgoing*: Daniel Howell *Incoming*: Alexander Kempf
Year 2018	TBA	TBA	Final report two months after the meeting to SCICOM	

ToR descriptors

ToR	Description	Background	Science Plan topics addressed	Duration	Expected Deliverables
a	Review **further progress** and deliver key updates in multispecies and ecosystem modelling throughout the ICES region	This ToR acts to increase the speed of communication of new results across the ICES area	11, 22	3 years	Report on further progress and key updates for internal use in WGSAM as well as externally.
b	Update of **key-runs** (standardized model runs updated with recent data, producing agreed output and agreed upon by WGSAM participants) of multispecies and eco-system models for different ICES regions	The key runs provide information on natural mortality for inclusion in various single species assessments	10, 15	3 years	Report on output of multispecies models including stock biomass and numbers and natural mortalities for use by single species assessment groups and external users.
c	Consider methods to assess the skill of multispecies models intended for operational advice.	This work is aimed assessing the performance of key runs focussing on natural mortality estimates and the ability to forecast population dynamics in comparison to	15, 22	3 years	Report on methods contributing to Key run standards for use under ToR b and externally.

		standard single species forecasts.			
d	Investigate the performance of multi-model ensemble in comparison to single model approach.	The purpose of the work is to investigate whether the multi-model average out performs the single models.	15, 22	3 years	Report on the performance of multi model ensembles for selected case studies, including (i) a summary of the pros and cons applying multi-model ensembles, (ii) guidelines how to use output from multi-model ensembles for advice
e	Test performance and sensitivity of ecosystem indicators.	Ecosystem indicators are increasingly in use in ecosystem assessments, and require testing through modelling studies. With connection to WGECO.	9	3 years	Report on the feedback on proposed ecosystem indicators and suggestion of alternatives
f	Metanalysis of impact of top predators on fish stocks in ICES waters.	Pick up on work on marine mammals conducted in 2012. Extend to top-predators in general.	6	3 years	Report on the impact of top-predators on fish stocks in ICES waters.
g	Explore the consequence of multispecies, mixed fisheries interactions and environmental factors in practical multispecies advice for fisheries management (**MSY related and other biological reference points**)	Multispecies reference points such as those related to MSY in mixed fisheries and the effect of environmental changes on these reference points is a key point in multispecies/integrated advice. Connection to ICES-PICES climate change group. Connection to WGMIXFISH.	14, 15	3 years	Report on methods to include mixed fisheries and environmental considerations in multispecies advice and evaluations of trade offs between management objectives. Uncertainties in models will beclearly communicated.

Summary of the Work Plan

Member contributions to any of the ToRs will be accepted in any year, but where possible, effort will be made to focus WG activities on particular ToRs as proposed below:

Year	Work
Year 1	Work on all ToRs. Focus on ToR e, f and g. ToR b: Keyruns (as required)
Year 2	Work on all tors. Focus on ToR c and d. ToR b: Keyruns (North Sea SMS, as required)
Year 3	Work on all tors. Focus on Synthesis ToR c-g. ToR b: Keyruns (as required)

Supporting information

Priority	The current activities of this Group will lead ICES into issues related to the ecosystem effects of fisheries, especially with regard to the application of the MSY Approach. The activities will provide information (e.g., natural mortality estimates, performance of indicators) and tools (e.g., multi-model ensembles, keyrun models) valuable for the implementation of an integrated advice in several North Atlantic ecosystems. Consequently, these activities are considered to have a very high priority.
Resource requirements	The research programmes which provide the main input to this group are already underway, and resources are already committed. Depending on the requirements for advice, additional resource might be required
Participants	Approx 20. Expertise in ecosystem, modelling and fish stock assessment from across the whole ICES region.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to ACOM and groups under ACOM	ACOM, most assessment Expert Groups
Linkages to other committees or groups	WGMIXFISH, WGDIM, WGBIFS, IBTSWG, WGECO, WGINOSE, WGIAB, WGNARS, WGIPEM, most EGs in the Regional Seas Programme.
Linkages to other organizations	None.