

**Working Group on *Crangon* fisheries and life history (WGCRAN)**

**2015/MA2/SSGEPD04** The Working Group on *Crangon* fisheries and life history (WGCRAN), chaired by Josien Steenbergen, 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	23-25 May	Oostende, Belgium	Interim report by 1 August to SSGEPD	
Year 2017	7-9 November	Hamburg, Germany	Interim report by 15 December to SSGEPD	
Year 2018			Final report by Date Month to SCICOM	

**ToR descriptors**

ToR	Description	Background	Science Plan topics addressed	Duration	Expected Deliverables
a	Data collection of the status of the stock.	Report and evaluate population status indicators like recent landings and effort trends in the brown shrimp fisheries or length based mortality estimates from Dutch and German scientific surveys. Generate a standardized lpue time-series of higher accuracy for the Netherlands with horse power days calculated based on hours at sea. Investigate methods to gain a better understanding of the recruitment processes and density dependence.	141, 143, 131, 134, 161, 162, 212, 311, 321	year 1,2,3	A timeseries of standardize stock indicators shall be delivered by all WGCRAN members within each annual report.
b	VMS analysis	Combine VMS, landings and effort data to gain a population distribution indicator and to monitor regional distribution and regional shifts in fishing effort. Evaluate the variability of the results by comparing different VMS data interpolation methods.	133,141,143, 144, 146, 212, 311	year 1,2,3	Results shall be summarized in peer-reviewed paper.
c	Decision-support tools	Develop brown shrimp-specific management decision-support tools to evaluate strategies on how to sustainably and efficiently harvest the brown shrimp stock	141, 145, 134, 311, 312, 334	year 1,2,3	Results shall be summarized in a peer-reviewed paper.
d	Investigate the effects of new gears on the catch	Analyze and enumerate the effects of new gears (e.g.	141, 134, 213, 214	year 1,2,3	Results shall be summarized in a

	efficiency of shrimp	pulsetrawl, combined pulse-trawl and standard gears, large or new mesh types, pumpsystem, letterbox etc.) and their implications on the Crangon stock, the bycatch, the catch efficiency and the possible lpue based management strategies			peer-reviewed paper.
e	Possible methods to assess and manage the brown shrimp fisheries	Review and evaluate possible methods to assess and manage the brown shrimp fisheries in the ICES region. Gather, compile and evaluate information on the onboard and ashore sieving fractions and processes and new national bycatch/discards data from e.g. DCF	161, 162, 141, 143, 212, 214, 215, 311	year 1,2,3	Results shall be summarized in a peer-reviewed paper.
f	Inform WGCAN on the progress in the research field infections and diseases	Analyzing infection levels with bacilliform viruses and/or the occurrence of other diseases and determining the potential effects they might have on the population.	141,145,146, 134, 131,212, 311	year 1,2,3	Results shall be summarized in a peer-reviewed paper.
g	Aquaculture aspects	Determining the potential on using brown shrimp as a species for use in aquaculture system. Improvement on how to rear and grow shrimps in the lab and to obtain "in-situ", real field growth rates for comparison		year 1,2,3	Results shall be summarized in a peer-reviewed paper.
h	Harmonize German and Dutch surveys	Optimize and harmonize German and Dutch surveys to improve comparability, to analyze spatio-temporal trends of stock indicators (biomass, distribution, mortality, etc.) and to ground-truth VMS derived lpue estimates.		year 1,2,3	Results shall be summarized in a peer-reviewed paper.
i	Information exchange	Exchange of information on national legislation, laws (e.g concerning Natura 2000) and developments (MSC process) concerning the brown shrimp fisheries in the whole North Sea for an improved cooperation and coordination of research and advice efforts. Presentations on developments and ongoing brown shrimp research in the ICES area.(	312, 311, 313	year 1,2,3	Results shall be summarized in a peer-reviewed paper.

## Summary of the Work Plan

Year 1	<p>Stock status indicators (ToR a) shall be updated and harmonized between countries.</p> <p>Data for Manuscripts related to ToR b-d and f-g shall be available</p> <p>New hauls to be included in the analysis under ToR h shall be available</p> <p>New information from ToR I shall be reported</p>
Year 2	<p>Stock status indicators (ToR a) shall be updated and harmonized between countries.</p> <p>Data for Manuscripts related to ToR b-d and f-g shall be analyzed</p> <p>New hauls to be included in the analysis under ToR h shall be available</p> <p>New information from ToR I shall be reported</p>
Year 3	<p>Stock status indicators (ToR a) shall be updated and harmonized between countries.</p> <p>Manuscripts related to ToR b-d and f-g shall be submitted</p> <p>New hauls to be included in the analysis under ToR h shall be available</p> <p>New information from ToR I shall be reported</p>

## Supporting information

Priority	<p>Crangon fisheries are economically important with landings value ranking this species among the top three species caught from the North Sea. The priority of WGCRRAN is to understand the interactions between the brown shrimp population (structure and abundance) and human behaviour (mainly fishing effort) the environment and the ecosystem. One important aspect is and will be the monitoring, investigation and development of population status indices.</p>
Resource requirements	<p>The research programmes which provide the main input to this group are already underway, and resources are already committed. The additional resource required to undertake additional activities in the framework of this group is negligible.</p>
Participants	<p>The Group is normally attended by some 10 members and guests.</p>
Secretariat facilities	<p>None.</p>
Financial	<p>No financial implications.</p>
Linkages to ACOM and group under ACOM	<p>WGCRRAN aims at a permanent linkage with ACOM after year 2 when sound and proven stock indicators have been developed and a good management plan has been developed under ToR h.</p>
Linkages to other committees or groups	<p>There is a linkage to WGBEAM as similar surveys are used. WGELECTRA as the use of the pulse gear by a larger fraction of the fisherman might have implications on the stock, WGINOSE by providing data for the integrated assessment. WGSAM as the SMS key runs will be used to estimate natural mortality of brown shrimp. Members of WGCRRAN are also members in the these groups.</p>
Linkages to other organization	<p>CWSS = Common Wadden Sea Secretariat; TMAP = Trilateral Monitoring and Assessment Programme; RCM –NSEA</p>