

SC/67b/RP03

E - Mercury in cetaceans: biogeochemical cycling, toxicological impacts and mapping decadal trends



INTERNATIONAL
WHALING COMMISSION

PROJECT PROPOSAL REQUEST

1. PROPOSAL TITLE

Mercury in cetaceans: Biogeochemical cycling, toxicological impacts and mapping decadal trends

2. BRIEF OVERVIEW OF THE PROPOSAL AND ITS EXPECTED OUTCOME

In response to the Commission Resolution on mercury, the objective of this proposal is to provide funds for completing the global review of mercury in cetaceans, resulting in the documentation and mapping of decadal trends. The Scientific Committee will also invite experts in mercury in the environment and its cycling and in mercury and selenium cetacean toxicology to participate (via skype if possible) in a session at SC/67B to provide further detail and interpretation of the current status and potential impact of mercury on cetacean populations at an ocean basin scale.

3. RELEVANT IWC SCIENTIFIC COMMITTEE GROUPS OR SUB-GROUPS

This topic is highly relevant to the work of Environmental Concerns SWG and is in response to the Commission's Resolution on mercury. We feel that jointly these activities will assist the Commission in addressing its concerns regarding this pollutant. It will include a data gathering exercise by continuation of the review and compilation of the literature on mercury levels in cetaceans that will be visualised on the contaminant mapping tool being developed in E to display any trends in tissue concentrations. It will also allow us to bring in experts to address and discuss the issues of mercury cycling in the environment and the ecotoxicological aspects of mercury exposure and the importance of selenium in cetaceans. This work will be carried out under the Pollution 2020 initiative.

4. TYPE OF PROJECT (PLEASE TICK)

Research project	
Modelling	
Workshop/meeting	
Database creation/maintenance	
Compilation work/editing (e.g. on whalewatching regulations, SOCER, etc.)	X
Other (please specify below)	

5. BRIEF DESCRIPTION OF THE PROPOSAL AND ITS CONNECTION WITH SCIENTIFIC COMMITTEE RECOMMENDATIONS (DO NOT EXCEED 1500 WORDS)

(A) BACKGROUND, RATIONALE, AND RELEVANCE TO THE PRIORITIES IDENTIFIED BY THE IWC SCIENTIFIC COMMITTEE:

Provide a clear explanation of the background and rationale for the proposal and its relevance to Scientific Committee identified priorities. Clearly identify the most relevant and recent Scientific Committee recommendations.

This activity and initiative was discussed at IWC SC67a following the Commission Resolution:-

REQUESTS the Scientific Committee to provide at IWC67 a summary of the current state of knowledge on the presence of heavy metals, with emphasis on mercury compounds, in cetaceans worldwide, and to identify areas of ocean health and human health concerns, and geographic areas where research should be prioritised in this regard.

A preliminary review paper was submitted and considered by the SWG but it was agreed that more needed to be done. This activities outlined here will fulfil the requirements of the Commission and will be synthesized for presentation to the SC and then to the Commission in 2018.

(B) SPECIFIC OBJECTIVES OR TOR AND DELIVERABLES/OUTCOMES:

Provide the specific objectives and the expected deliverables

The objective is to

1. Review the global trends in mercury, providing a summary of the concentrations measured in tissues of various species by region and decade, recognising the importance of selenium in the toxicology of this element.
2. Assimilate the data from the review into the Contaminant Mapping tool that provides a visualisation web interface for plotting the trends in the tissues by year, decade, species and location.
3. Provide a summary report to the Commission following a focus session at SC/67B in which three mercury experts will provide context, interpretation and further information on mercury cycling for the report.

(C) METHODOLOGICAL APPROACH/WORK PLAN/ADMINISTRATIVE DETAILS

Specify the methods to be applied (novel methods require more explanation than standard ones) and the broad workplan – the detailed timetable appears under Item 5 below.

The Pollution 2020 Intersessional Group will organize and guide the work to produce the following:

1. A review of the global trends would be carried out by research assistants and member countries intersessionally and the summary of the concentrations in tissues over time and space would be provided to the mapping group.
2. The concentrations over time and space would be assimilated into the contaminant mapping tool and open access provided through the IWC website.
3. Three participants in the following areas to join one session (via skype) at SC/67B that is mercury focussed:
 1. Ecotoxicologist with expertise in the effects of mercury and selenium in cetaceans
 2. Mercury biogeochemical cycling in the environment expert (this person needs to be able to cover global biogeochemical cycles as this may be different by ecoregion)
 3. Cetacean ecologist with expertise in mercury exposure, selenium and ecosystem effects (preferably with knowledge of both baleen and toothed whales).

We would also encourage submitted papers, reports and syntheses of data and studies on mercury from scientists of member countries.

(D) SUGGESTIONS FOR OUTREACH

There will be potential for outreach on this topic (which is of great interest to the public) following publication of the technical report or special issue through websites, twitter and linkedin.

6. TIMETABLE FOR ACTIVITIES AND OUTPUTS

Specify the timetable for project activities and expected outputs separately. For projects with multiple distinct elements please indicate interim goals and timeframes. Add as many rows as you need to the tables below. If publications are an expected output please note whether you will submit the manuscript to the IWC's Journal of Cetacean Research and Management.

Activity to be undertaken	Key person(s)	Start(mm/yy)	Finish (mm/yy)
Global review of mercury	Ailsa Hall and Letizia Marsili	August 2017	January 2018
Assimilation of mercury tissue concentrations into mapping tool	Ailsa Hall	February 2018	April 2018
Focussed session	IPs	SC67b SWG session early in meeting	Estimated June 2018

Expected outputs	Completion date (mm/yy)
Report to the Commission	IWC 67b

7. RESEARCHERS' (OR STEERING GROUP) NAME(S) AND AFFILIATION

Please, also specify if the project team has any direct connection (e.g. same research group or institute, collaborator on common project) with people involved or likely to be involved in taking the funding decision (e.g. IWC SC heads of delegations, SC convenors, etc.). Add as many rows as you need to the table below.

Name	Affiliation	Connection with decision
Teri Rowles	NOAA, National Marine Fisheries Service	Convenor E
Ailsa Hall	Sea Mammal Research Unit	Convenor E

8. TOTAL BUDGET

Breakdown into: (1) salaries/wages (include name/position of each individual and breakdown of time and duties i; (2) travel/subsistence expenses (breakdown by person and justification) unless for IPs for workshops where a total estimate based on an average for the total number of IPs is acceptable; (3)

services (e.g. aircraft/vessel time, consultancy fees, ARGOS fees, etc.); (4) reusable capital equipment (e.g. reusable equipment such as a hydrophone, cameras, etc. Note that this equipment will have to be registered at the IWC Secretariat and will remain property of the IWC at the end of the project), (5) expendable capital equipment (e.g. consumables, tags, stationery), (6) shipping costs, (7) insurance costs, (8) in kind co-funding (specify whether other funding is available for personnel/name, equipment, venues, etc.). Note that "Overheads" are not admissible. Add as many rows as you need to the table below.

Type	Detailed description	Cost in GB pounds
(1) Salaries (by person)	Research Assistants (casual staff to undertake the review of mercury levels and to compile and assimilate the data into mapping tool	4000
(2) Travel/subsistence (by person or est. total for IPs)		
(3) Services (by item)		
(4) Reusable equipment		
(5) Consumables		
(6) Shipping (by Item)		
(7) Insurance (by item)		
(8) Co-funding		
(9) Other	This is not a request for additional funding. We are requesting a reallocation of funds from within the Pollution 2020 budget.	
Total		

9. DATA ARCHIVING/SHARING

Please state your plans for data archiving and sharing. Note that data collected primarily under IWC grants are considered publicly available after an agreed period of time for publication of papers, usually about two years. The work of the IWC depends on the voluntary contribution of data to the various databases and catalogues IWC supports. Please consult the Secretariat (secretariat@iwc.int).

All data used in this initiative will already be in the public domain. The data will be shared through the web portal and will be downloadable by users of the portal.

10. PERMITS (PLEASE TICK)

Do you have the necessary permits to carry out the field work and have animal welfare considerations been appropriately considered?	NA
Do you have the appropriate permits (e.g. CITES) for the import/export of any samples?	NA

If 'Yes' please provide further details and enclose copies where appropriate:

Appendix 2 – DRAFT SCORING SHEET

If a project presents multiple primary objectives which are achieved using sub-projects, a sheet should be used to evaluate each single sub-project. Note that not all criteria are equally applicable depending on the nature of the project (e.g. field work versus workshops).

IWC SCIENTIFIC COMMITTEE PROPOSALS FOR FUNDING - REVIEW CRITERIA - TEST			
TITLE OF THE PROJECT/sub-projects:			
PRINCIPAL INVESTIGATOR:			
Key criteria	Explanation of scoring	Score	Supporting Remarks
Relevance to Scientific Committee priorities			
1	How well aligned are the scientific outcomes of the project/activity with the current SC priority areas?	1 - Not aligned/poorly aligned (e.g. too vague or generic reference to general SC priorities) 2 - Reasonably aligned (e.g. some aspects may be vague or links are not clear) 3 - Well aligned (e.g. outcomes clearly deliver in the most part on priority areas, may also address longer term or potential future issues). 4 - Closely aligned (e.g. of interest for multiple sub-groups or delivers on specific SC high priority topics/recommendations in the immediate or short term).	
2	To what extent will the outcomes of the project/activity contribute to improvements in the conservation and management of cetaceans?	1 - Not at all 2 - Poorly 3 - Reasonably or over the longer term 4 - Well or over the medium term 5 - Excellently or to almost immediate effect	
Note: if in each of the two above key criteria under this section the project does not score singularly at least 2 points, do not proceed in further evaluation. Of course, proposals within a sub-group would only be developed if in their estimation scores were of 4 or above.			
Approach and methodology			
3	What degree of scientific merit/value is there in carrying out the work?	1 - Not demonstrated or of low scientific value 2 - Useful/basic scientific value 3 - Very good scientific value 4 - Excellent/innovative scientific value	

4	Is the proposed methodology scientifically sound and feasible in terms of field and analytical methods?	<p>1 - Feasibility unrealistic & poor methodology or not properly addressed</p> <p>2 - Feasibility & methodology acceptable but would benefit from some substantial amendments</p> <p>3 - Feasibility & methodology good, some small changes beneficial</p> <p>4 - Feasibility & methodology excellent or a highly promising innovative approach to an important question facing the Committee</p>		
5	What is the likelihood of success based on the proposed overall approach and methodology?	<p>1 - No chance of success</p> <p>2 - Low chance of success/better approaches available</p> <p>3 - Medium chance of success/some changes to the approach necessary</p> <p>4 - High chance of success/little or no changes to the approach necessary</p>		
5 a	Are objectives of the research likely to be achieved within the proposed time-frame?	<p>1 - No or unlikely</p> <p>2 - Partially or potentially ambitious</p> <p>3 - Yes with some minor suggestions</p> <p>4 - Yes</p>		
5 b	Are any proposed intermediary targets timely and achievable?	<p>1 - No or unlikely</p> <p>2 - Partially</p> <p>3 - Probably</p> <p>4 - Yes</p>		
5 c	Is the proposed time-frame/work necessary (e.g. can the project produce results in a shorter time period)?	<p>1 - No or unlikely</p> <p>2 - Partially</p> <p>3 - Probably</p> <p>4 - Yes</p>		
5 d	Is the sample size adequate to achieve the stated objectives?	<p>1 - Not demonstrated/not properly addressed</p> <p>2 - No or unlikely (too low/too high)</p> <p>3 - Probably (additional analysis needed)</p> <p>4 - Yes</p>		
6	Is the project likely to affect adversely the population(s) involved?	<p>1 - Not properly addressed/ unknown</p> <p>2 - Yes severely</p> <p>3 - Possibly at a low level</p> <p>4 - No</p>		

6 a	IF YES , are analyses provided on simulations of the effects using different time-frames for the project if applicable?	1 - No 2 - Partially 3 - Yes		
Note: if in each of the above key criteria under this section the project does not score singularly at least 2 points, do not proceed in further evaluation. Of course, proposals within a sub-group would only be developed if in their estimation scores were of 3 or above.				
Project team and Project management				
7	To what extent does the team have the relevant expertise, experience, and balance?	1 - Poor or not demonstrated 2 - Sufficient 3 - Very good 4 - Excellent		
8	Contingency plan: To what extent have potential problems/risks been considered and appropriate mitigation proposed?	1 - Poor or not demonstrated 2 - Sufficient but could be improved 3 - Fully or requiring only minor suggestions or not applicable		
Value for Money				
10	Does the project represent good value for money?	1 - No or significant amendments would be needed 2 - Yes but with some minor amendments 3 - Yes		
11	Have sufficient links been made to the wider research community/other organisations/capacity building.	1 - No 2 - Some but significant amendments needed 3 - Yes but with some minor additions 4 - Yes or not applicable		