

SC/67b/RP12

CMP - Passive acoustic monitoring of the eastern South Pacific southern right whale, a key to improve CMP outputs



INTERNATIONAL
WHALING COMMISSION

PROJECT PROPOSAL REQUEST

1. PROPOSAL TITLE

Please provide the title of the project or the name of the workshop/meeting.

Passive Acoustic Monitoring of the Eastern South Pacific Southern Right Whale, a Key to Improve Conservation Management Plan Outputs

2. BRIEF OVERVIEW OF THE PROPOSAL AND ITS EXPECTED OUTCOME

Give a very brief overview (max 150 words) on your proposal and its expected outcomes. Use bullet point to list outcomes. Be succinct and clear as this may be used to summarise your project for the report.

The Eastern South Pacific southern right whale population is Critically Endangered and in 2012 the IWC adopted a Conservation Management Plan (CMP). Over the years, few opportunistic sightings have been recorded and no breeding area has been yet identified. Until a breeding ground is found many CMP priority actions can hardly be implemented. Thus, in 2016 the IWC Scientific Committee decided to support this passive acoustic monitoring (PAM) project, to facilitate the identification of potential breeding areas along the coast of Chile and Peru. This project seeks to obtain temporal coverage over a complete annual cycle and spatial coverage depending on the number of sites. The PAM project is likely the most cost-effective way to investigate the seasonal and temporal distribution of southern right whales along the coast of Chile and Peru. The information will be crucial to identify aggregation areas and facilitate the implementation of CMP for this population.

3. RELEVANT IWC SCIENTIFIC COMMITTEE GROUPS OR SUB-GROUPS

List all the IWC Scientific Committee groups or sub-groups that the outcomes of this work would be relevant to and provide a brief (1-2 lines) explanation of how it would contribute more widely to their ongoing programmes of work. Where possible, do not simply list only the sub-committee within which or for which the project proposal was generated.

The sub-committee on Conservation Management Plan reviews information on CMPs and in particular it reviews advances on the Eastern South Pacific southern right whales CMP.

In 2016, the Scientific Committee decided to support this PAM project and at its 67a meeting, the Committee among others “**commends** the scientific work being undertaken and the international co-operation this entails and it **looks forward** to receiving the results of the acoustic studies”.

In addition, the passive acoustic recording will be useful for other sub-committees and sub-groups of the Scientific Committee since it will collect acoustic data over a year from any cetacean species. This data will be available to be used in the future to monitor other species as well.

4. TYPE OF PROJECT (PLEASE TICK)

Research project	X
Modelling	
Workshop/meeting	
Database creation/maintenance	

Compilation work/editing (e.g. on whalewatching regulations, SOCCER, etc.)	
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.

With less than 50 mature individuals, The Eastern South Pacific (ESP) southern right whale population was classified as Critically Endangered by IUCN in 2008.

Since 2007, the International Whaling Commission has decided to include this population in its Conservation Committee Agenda and in 2008, the Scientific Committee recommended an increase in photo-identification and biopsy-sampling efforts.

In 2012, the IWC endorsed a CMP for this population where some key priority actions included to increase collection of photoID and genetic data as well as identify a breeding area. That year, the Scientific Committee **strongly recommended** tissue sampling and that surveys, photo-identification and genetic studies should be conducted as a priority. Since then the Scientific Committee periodically review progress on the CMP.

In 2014, the Scientific Committee stressed the importance and effectiveness of coordinated international action under these Plans given the small number of whales in the right whale population off Chile and Peru. Furthermore, the Standing Working Group on Conservation Management Plans recommended to the Commission that the Conservation Committee should highlight to the Scientific Committee (through the Commission) that research actions detailed in endorsed CMPs should be made priority.

In 2015, the Scientific Committee **welcomes** information on progress with the CMP and recommended they continue.

At its 2016 meeting, a revised CMP was submitted by the governments of Chile and Peru and highlighted that until a breeding ground is found collection of photoID, genetic data and monitoring of population parameters and threats are unlikely to be achieved. Therefore the most important target for the next CMP period is to focus on increase effort to identify a breeding area. In this sense, the Scientific Committee decided to support this passive acoustic monitoring (PAM) project to facilitate the identification of potential breeding areas along the coast of Chile and Peru.

In 2017, the Scientific Committee received report on advances of this project and “**commends** the scientific work being undertaken and the international co-operation this entails and it **looks forward** to receiving the results of the acoustic studies”.

During discussions at meeting IWC67b, it became evident that the Committee considered of great value this PAM project and that it recommended its continuation.

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

Provide the specific objectives and the expected deliverables. In the case of workshops and meetings, include the Terms of Reference (ToR) and expected outcomes.

To date the PAM project has already established a steering group, reviewed available data, selected first two deployment sites, selected and acquired the acoustic equipment, built a mooring and other related equipment, finalized logistical planning for first location site, obtained necessary permits and started developing an associated education and capacity building program in support to other CMP priority actions.

Instruments are planned to be deployed at first location in May 2018 and will need to be retrieved for maintenance each 2-3 months. Planning of deployment at second location site will follow immediately after deployment of first location. It is expected that deployment at second location site should occur end of 2018-beginning 2019. Acoustic data will be analyzed as data is retrieved.

For 2019-2020, specific objectives will be:

- Finalize recording of first, second and third location sites.
- Finalize selection of location sites and planning deployment for third to sixth location sites.
- Obtain necessary permits for third to sixth location sites.
- Start recording at fourth and fifth selection site.
- Finalize data analyses of first, second and third location sites.
- Start data analyses for fourth and fifth location site.
- Develop education lectures to schoolchildren and capacity building workshop at selected sites.

These recordings will provide valuable information about call parameters and patterns for eastern South Pacific southern right whales along its distribution range, which can be used to document spatial and temporal patterns of occurrence as well as possibly generate acoustic-based density estimations.

The information collected will deliver critical to facilitate the identification of an aggregation area where a long-term monitoring program on the species can be implemented and will benefit conservation outcomes of the ESP southern right whale CMP.

(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.

In the case of workshops and meetings, include the broad work plan including any pre-requisites for the workshop/meeting to take place (apart from funding, e.g. completed analyses, papers etc.) and administrative details (e.g. location, dates, number of participants).

The PAM project seeks to obtain temporal coverage over a complete annual cycle and spatial coverage depending on the number of sites selected. Hydrophones will be deployed along the distribution range of the southern right whale. Each year, two sites will be selected for recording over one year round.

Selection of location sites and planning of deployment for each location site will be conducted after first deployment of previous location site occurs. The hydrophones will be programmed to record continuously from 20Hz to 24KHz and this allow a maximum of 76 days of continuous recording. Thus, maintenance of the equipment need to be schedule each 2-3 months.

Logistics will depend on locations sites (availability of existing mooring, oceanographic conditions, etc.). Ship time to deploy and retrieve devices will be provided in-kind.

Acoustic recording data will be manually check, by an experiences analysist, for SRW calls types in the program Raven Pro 2.0. Every SRW call will be annotated across the 12-month period to outline seasonal

presence. Depending on the results, devices will be deployed in the same or different location, to increase temporal or spatial coverage.

(D) SUGGESTIONS FOR OUTREACH

Please, note that successful proponents will be requested to produce ad hoc material that will be used by the IWC Secretariat for dissemination and outreach.

Annual progress reports and preliminary results of data analysis will be provided to the Scientific Committee.

Press releases are considered to promote the project and create awareness on the CMP, the Critically Endangered status of this population and the actions taken by the IWC, range states and stakeholders.

Educational lectures to schoolchildren as well as capacity building workshops to local communities where the project is implemented will increase awareness and the outreach of the PAM project and the CMP.

Peer reviewed papers will be published as the project generates information on this matters.

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)
Deployment and retrieving at first location site	Barbara Galletti, Susannah Buchan	05/18	05/19
Deployment and retrieving at second location site	Barbara Galletti, Susannah Buchan	01/19	01/20
Deployment and retrieving at third selection site	Barbara Galletti, Susannah Buchan	06/19	06/20
Deployment and retrieving at fourth selection site	Barbara Galletti, Susannah Buchan	02/20	02/21
Deployment and retrieving at fifth selection site	Barbara Galletti, Susannah Buchan	07/20	07/21
Selection of third location site and deployment planning	Steering Group	02/19	05/19
Selection of fourth location site and deployment planning	Steering Group	07/19	10/19
Selection of fifth location site and deployment planning	Steering Group	03/20	06/20
Selection of sixth location site and deployment planning	Steering Group	08/20	11/20
Obtain necessary permits for third location site	Barbara Galletti	05/19	06/19
Obtain necessary permits for fourth location site	Barbara Galletti	10/19	01/20
Obtain necessary permits for fifth location site	Barbara Galletti	02/20	05/20

Obtain necessary permits for sixth location site	Barbara Galletti	12/20	02/21
Data analyses of first location site	Susannah Buchan, Naysa Balcazar-Cabrera	09/18	12/19
Data analyses for second location site	Susannah Buchan, Naysa Balcazar-Cabrera	05/19	08/20
Data analyses for third location site	Susannah Buchan, Naysa Balcazar-Cabrera	09/19	12/20
Data analyses for fourth location site	Susannah Buchan, Naysa Balcazar-Cabrera	06/20	09/21
Conduct educational and capacity building program	Barbara Galletti, Susannah Buchan, Naysa Balcazar-Cabrera	05/18	02/21
Progress report 2019	Steering Group	05/19	05/19
Progress report 2020	Steering Group	05/20	05/20

Expected outputs	Completion date (mm/yy)
Analysis of first acoustic records of Critically Endangered southern right whales population at three different location sites	12/20
Preliminary results of between sites comparisons to document spatial and temporal patterns of occurrence as well as possibly generate acoustic-based density estimations	12/20
Preliminary identification of possible breeding area and proposal to establish a long-term monitoring project in identified sites and period.	12/20
First publication in peer-reviewed journal	05/20

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
Barbara Galletti	Centro de Conservacion Cetacea	ESP southern right whale CMP coordinator & member of steering group
Susannah Buchan	COPAS Sur-Austral, Universidad de Concepcion	Principal investigator, acoustic researcher & member of steering group
Naysa Balcazar-Cabrera	COPAS Sur-Austral, Universidad de Concepcion	Principal investigator, acoustic researcher & member of steering group
Elisa Goya	Instituto del Mar del Peru	Sub-coordinator for Peru of the ESP southern right whale CMP & member of steering group
Sue Moore	NOAA	Scientific advisor & member of steering group
Robert L. Brownell Jr.	NOAA	Scientific advisor & member of steering group
Danielle Cholewiak	Woods Hole Oceanographic Institute	Scientific advisor & member of steering group

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 in 2019	Cost in GB pounds in 2020
(1) Salaries (by person)	Data analyses	3,000	3,000
(2) Travel/subsistence (by person or est. total for IPs)	Travel for researchers to deploy and recover acoustic devices five times each location site (field costs for first location site are already fully covered and are not included in the proposal)	9,700	13,800
(3) Services (by item)			
(4) Reusable equipment	Dedicated computer for data analysis	1,000	
(5) Consumables			
(6) Shipping (by Item)			
(7) Insurance (by item)			
(8) Co-funding	Ship time	In kind	In kind
(9) Other			
Total		13,700	16,800

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).

Southern right whale calls found under this project will be made available under the IWC data sharing agreement.

10. PERMITS (PLEASE TICK)

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

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
<i>Relevance to Scientific Committee priorities</i>			
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.			
<i>Approach and methodology</i>			
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?	1 - Feasibility unrealistic & poor methodology or not properly addressed 2 - Feasibility & methodology acceptable but would benefit from some substantial amendments	

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

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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		
<i>Value for Money</i>				
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		