INTERNATIONAL WHALING COMMISSION

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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 CMP - Outputs 2023/2024

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.

Eastern South Pacific right whales are Critically Endangered and the IWC has a Conservation Management Plan for this population. The Scientific Committee supports a Passive Acoustic Monitoring (PAM) project that seeks to assists in the identification of a breeding area. Six sites have been selected along the coast of Chile and Peru. Two sites have already been covered off central and southern Chile. Northern Chile is being monitored since March 2022 but additional funds are needed to complete full maintenance cycle of equipment. Next site to monitor on 2023-2024 is southern Peru and funds have already been secured. An opportunity to monitor Golfo de Penas has been presented and require matching funds. Workplan for the 2023-2024 include start data collection at southern Peru and Golfo de Penas and analyse acoustic datasets.

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 including advances on the Eastern South Pacific southern right whales CMP.

Since 2016, the IWC Scientific Committee supports the project to facilitate the identification of potential breeding areas along the coast of Chile and Peru (IWC, 2016). This is the first project to use passive acoustic monitoring (PAM) for this population in the entire Eastern South Pacific and has received a wide range of support.

In addition, the passive acoustic recording will be useful for other sub-committees of the Scientific Committee, such as SH and SM, since it will collect acoustic data over a year from any cetacean species from several locations along the southeast pacific. Acoustic datasets 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, SOCER, 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.

The Eastern South Pacific (ESP) southern right whale population is Critically Endangered and the International Whaling Commission (IWC) implements a Conservation Management Plan (CMP) for this population since 2012. One of the highest priority actions of the CMP includes the identification of a breeding area.
The IWC Scientific Committee supports the *"Acoustic Monitoring of the Eastern South Pacific population of southern right whales, a key to increase the results of the CMP"* project and has reiterated its support to "*the scientific work being undertaken and the international co-operation this entails*" (IWC, 2019, 2020).

The PAM project is obtaining temporal coverage over a complete annual cycle and spatial coverage along the known distribution range of the southern right whale. Three out of six location sites identified along its distribution range have been or are being monitored since 2018. A southern right whale automatic detector was develop and data collected off Isla de Chiloe (2018-2019) and Arauco Gulf (2019-2020) analyzed. However more efforts were needed to provide full manual inspection of acoustic datasets to ensure no call are missing. Although monitoring northern Chile is underway, operational costs have been greater than expected and therefore only eight months could be secured. Southern Peru monitoring will follow northern Chile but are not included in this proposal. In the addition, there is currently an opportunity to use special acoustic equipment, that require less maintenance, and maritime facilities to work at Golfo de Penas during 2023-2024.

(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.

Between 2023 and 2024 it is expected to:

- Finish data collection at Antofagasta region.
- Prepare all planning, permits, coordination and logistics for deployment at Golfo de Penas and Southern Peru.
- Start collecting data and complete one-year recording at southern Peru (turnover every two months) and Golfo de Penas (turnover every four months).
- Visually inspect all dataset collected from Isla de Chiloe 2018-2019 and Arauco Gulf 2019-2020.
- Run the automatic detector at Antofagasta dataset.

These recordings will provide valuable information about acoustic presence of eastern South Pacific southern right whales along its distribution range.

The information collected will 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).

A steering group of the PAM project has been established in 2017 and since then it has been involved in all related matters to the project such as the selection of the equipment, selection of deployment sites, planning and logistics, coordination of data analysis, reporting to IWC, etc.

Hydrophones are programmed to record continuously from 20Hz to 24KHz and this allow a maximum of 76 days of continuous recording. In order to cover a full 12 months at each site, instrument turnovers take place every 2-3 months. Today, there is also an opportunity to receive the lending of a new generation hydrophone that requires less maintenances thanks to the offer of Center for Research on Arid Zones (CEAZA). This instrument could be used at Golfo de Penas, an area with difficult access.

Six sites have been initially considered to cover all possible hotspots of this population along its known distribution range. Three sites have already been monitored. In 2023/2024 we plan to collect data on the fourth location site located in southern Peru and fifth location site at Golfo de Penas. These datasets are essential to almost finish the entire distribution range coverage and better understand it habitat uses.

Trained analyst will review the entire acoustic data off Isla de Chiloé and Arauco Gulf to assess to check for missing acoustic calls.

In addition, acoustic data collected from northern Chile will need to be analysed using automatic detector and compared with results from southern and central Chile.

(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 are being provided to the Scientific Committee.

A peer reviewed publication is considered with analyses of acoustic data from Isla de Chiloe and Arauco Gulf.

Press releases are also 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.

6 . TIMETABLE FOR ACTIVITIES AND OUTPUTS

Specify the timetable for project activities and expected out puts 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)
Visual inspection of datasets	Susannah Buchan	01/23	12/24
Acoustic data analysis for northern Chile using automatic detector	Susannah Buchan	06/23	04/24
Acoustic data analysis for austral Chile and southern Peru* using automatic detector	Susannah Buchan	05/24	05/25
Coordinate planning, permits and logistics	Barbara Galletti	01/23	12/24
Deployment and maintenance of acoustic mooring system at Golfo de Penas	Barbara Galletti and Chilean Navy	09/23	09/24
Progress report 2023 and 2024	Steering Group	04/23	04/24

*Note: Peru is expected to be monitored from 04/23 to 04/24 but is not included in this timetable as field costs are not part of the current funding proposal.

Expected outputs	Completion date (mm/yy)
Visual analyzes of data from Isla de Chiloé and Arauco Gulf	04/24
Analyze datasets from northern Chile using automatic detector	04/24
Preliminary results of between sites comparisons to document spatial and temporal patterns of occurrence as well as possibly generate acoustic-based density estimations	12/24
Peer-reviewed publication	06/23
Collection of one-year acoustic dataset in southern Peru	04/24
Collection of one-year acoustic dataset in Golfo de Penas	09/24

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	Project leader, CMP coordinator and member of steering group
Susannah Buchan	COPAS Sur-Austral, Universidad de Concepción	Acoustic researcher & 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
Ivan Perez-Santos	Universidad de Los Lagos	Oceanographer
Carlos Olavarria	Center for Research on Arid Zones	Responsible of implementation of PAM at Antofagasta, northern Chile
Constanza Rojas-Cerda	Pontificia Universidad Católica de Chile	Acoustic researcher

8 TOTAL BUDGET

PROJECT BUDGET								
						Please indicate when funds will be needed		Co-funding funds only
	Description	**Cost per unit £GBP**	**Number of units**	**Total Cost £GBP**		**2023 £GBP**	**2024 £GBP**	**Co-funding £GBP**
(1) Salaries (by person)	Project Leader – Logistics and coordination	300	24 months	7200		3600	3600	0
	Oceanographer - Maintenance of acoustic mooring system at Golfo de Penas	500	4 times, two persons	4000		2000	2000	0
	Acoustic researcher - Data analyses and testing	500	12 months	6000		3000	3000	0
(2) Travel/subsistence (by person or est. total for IPs)	**Travel for oceanographers to Puerto Montt**							
	Flight Santiago-Puerto Montt	200	Two persons, 4 times (total 8)	1600		800	800	
	Terrestrial transport to airport	30	Two persons, 8 times (total 16)	480		240	240	
	Lodging	50	Two persons, 8 nights (total 16)	800		400	400	
	Per-diem	30	Two persons, 8 days, 4 times (total 64)	1920		960	960	
(3) Services (by item)	Remaining maintenance services at Antofagasta	2700	3 times	8100		8100		
	Vessel time to monitor Golfo de Penas	3000 (based on daily rental)	6 days, 4 times (24 days)	72000				72000
(4) Reusable equipment	Hydrophone	5000	1	5000				5000
	Deck Unit	8000	1	8000				8000
	Hard Drive	200	1	200		200		
(5) Consumables	Buoys, acoustic rings and dead weights	900	1	900		900		
(6) Shipping & Customs (by Item)								
(7) Insurance (by item)								
(8) Other								
			TOTAL	**116200**		**20200**	**11000**	**85000**

Co-funding Memo:

Source	**Purpose of Funding**	**Cost £GBP**		**Secured/Tentative?**
COPAS Sur-Austral	Oceano telecommand unit	8000		Secured
CEAZA	Soundtrap long-term recorded	5000		Secured
Chilean Navy	Maritime transport to monitor Golfo de Penas	72000		Secured
	TOTAL	**85000**		

Total value of project:	**Cost £GBP**
Funds requested from IWC	**31200**
Co-funding	**85000**
TOTAL	**116200**

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: