



135 Station Road, Impington, Cambridge, UK, CB24 9NP;  
Tel: +44 1223 233397 - Fax: +44 1223 232876  
E-mail: secretariat@iwc.int

## PROJECT PROPOSAL REQUEST

### 1 . PROPOSAL TITLE

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

Southern Hemisphere Blue Whale Catalogue 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.

The Southern Hemisphere Blue Whale Catalogue (SHBWC) is an international collaborative effort to facilitate cross-regional comparison of blue whale photo-identifications catalogues. To date more than 2,000 individual blue whales have been contributed to the SHBWC from researchers groups working on areas off Antarctica, Chile, Peru, Ecuador-Galapagos, Eastern Tropical Pacific, Australia, Timor Leste, New Zealand, Indonesia, Sri Lanka and Madagascar.

The Scientific Committee is currently working on Comprehensive Assessment of non-Antarctic Southern Hemisphere blue whales, with emphasis on Australia, southeast Pacific blue whales and New Zealand. The SHBWC is assisting in matching catalogues in order to deliver regional photo-ID based mark recapture assessments of blue whale abundance.

The SHBWC has become the largest repository of Southern Hemisphere blue whale photo-identifications. Matching process and photo-quality control have been completed for different geographic areas.

The 2023-2024 work will focus on 1) match and photo-quality code new photo-IDs received from Costa Rica Dome and ETP with available IDs at SEP sub-catalogue; 2) match new photo-IDs received from Costa Rica Dome and ETP with committed IDs off southern Chile from Blue Whale Center; 3) match and photo-quality code new ID's received from Australia with Australian sub-catalogue; 4) match and photo-quality code new Australian photo-IDs available from Center for Whale Research to Australian sub-catalogue; 5) match and photo-quality code Timor Leste IDs to Australian sub-catalogue and; 6) IT work on database to adjust reporting outputs to be used on new mark recapture framework that handle multiple marks (left and right).

### 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.

- **Southern Hemisphere Sub-Committee:** Currently conducting Southern Hemisphere blue whale assessments and the SHBWC provide useful blue whale mark-recapture datasets to assist abundance estimate models.
- **Standing Working Group on ASI:** results from future abundance estimates will also be discussed under ASI.
- **Ad hoc Working Group on Photo-identification:** the SHBWC is currently one of the major photo-ID catalogues supported by IWC and therefore its work and database management has been a central part to the work of this ad-hoc working group.
- **Standing Working Group on Environmental Concerns:** Data on skin lesions is included and, while not considered part of this proposal, the catalogue will provide a comprehensive collection of photographs on skin lesions that may be used in the future to conduct visual health assessment for all Southern Hemisphere blue whale populations.

### 4 . TYPE OF PROJECT (PLEASE TICK)

Research project	
------------------	--

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

**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.*

Collaboration among blue whale researchers and sharing of photo-identification catalogues is critical to better understand population boundaries, connectivity, migratory movements and abundance estimates among others.

The International Whaling Commission has been supporting the project “Southern Hemisphere Blue Whale Catalogue (SHBWC)” as an international collaborative effort to facilitate cross-regional comparisons of individual blue whale photo-identification catalogues and contribute to Southern Hemisphere blue whales assessments (IWC, 2009).

The SHBWC uses specially designed online software that allows for simultaneous upload and comparisons between catalogues from regions off Antarctica, Chile, Peru, Ecuador-Galapagos, Eastern Tropical Pacific, Australia, Timor Leste, New Zealand, Indonesia, Sri Lanka and Madagascar.

The IWC Scientific Committee is currently conducting blue whale assessments on non-Antarctic blue whales and the work of the SHBWC has focused over the past years in comparing photo-IDs from these regions, specifically from Australia, New Zealand and Southeast Pacific in order to provide useful data to model abundance estimates.

New Zealand datasets have already been finished and will be used as a case study to model abundance estimates using mark recapture framework that uses multiple marks. However, there have been or are expected new important entries for Southeast Pacific and Australia that could be compared and photo quality rated to have a more full and thorough overview over these regions, before these datasets are expected to be used to model abundance estimates. In addition as recent information as shown connectivity between Timor Leste and Australia, it has been proposed to advance on these comparisons to better understand population structure and movements on these regions.

Finally, to make datasets available for being used under a multiple mark framework for mark-recapture, IT team will have to develop a reporting system that made these large datasets available in the required format.

**Relevance to priorities - copies of IWC recommendations below**

Item 8.2.1.1 (IWC, In press)

“To finalise the southeast Pacific blue whale pre-assessment, the Committee **agrees** that the southeast Pacific photo-ID dataset should be quality coded and matched to 2018, and mark-recapture analyses conducted.”

Item 8.2.1.2 (IWC, In press)

“To finalise the Southeast Indian Ocean blue whale pre-assessment, the Committee **recommends** that the Australian photo-ID dataset be reconciled with location and time metadata urgently, and mark recapture analyses conducted”.

Item 8.1.2 (IWC, 2020)

“In order to progress regional assessments, the subcommittee also **encouraged**: (1) An intersessional assessment of the suitability of the Australian blue whale photo-identification catalogues for mark recapture analysis of regional population abundance by Galletti, Jackson and Olson.”

Item 8.2.1.3 (IWC, In Press)

“The Committee **reiterates** its recommendations (Item 8.2.1.6; IWC, 2021): ... (2) that development of the Southern Hemisphere Blue Whale Catalogue continue, with a priority focus on: (i) finalisation of photo-ID matching within the southeast Pacific; (ii) addition of southeast Indian Ocean (Australian) metadata to associate photo-IDs with sighting date and location; (iii) quality control of southwest Pacific, southeast Pacific and southeast Indian Ocean photographs to finalise datasets for mark recapture analysis and estimation of regional blue whale abundance;

**(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.

- 1) match and photo quality code new photo-IDs received from Costa Rica Dome and ETP (80 IDs) with available IDs at SEP sub-catalogue (877 IDs);
- 2) match new photo-IDs received from Costa Rica Dome and ETP (80 IDs) with committed IDs off southern Chile from Blue Whale Center (155 IDs);
- 3) match and photo quality code new ID's received from Australia (16 IDs) with rest of Australian sub-catalogue (485 IDs);
- 4) match and photo quality code new Australian photo-IDs available from Centre for Whale Research (183 IDs) to Australian sub-catalogue (501 IDs)
- 5) match and photo quality code Timor Leste IDs (131 IDs) to Australian sub-catalogue (684 IDs);
- 6) IT work on database to adjust reporting outputs to be used on new mark recapture framework that handle multiple marks (left and right).

#### (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).

##### **Matching process:**

Individual blue whales are identifiable from unique patterns of mottling on both sides of the body near the dorsal fin (Sears *et al.*, 1990) and in some cases, permanent scars can be used to identify or confirm individuals.

At least two experienced matchers will be appointed to be responsible for all comparisons. Multiple matchers, as long as experienced, have the advantage of the work being conducted by someone if others have commitments.

##### **Photo quality-coding:**

The photo-identification expert (or small team of experts, trained together) will code all of the contributed photographs of blue whales from Southeast Pacific, Australia and Timor Leste that have not yet been rated. A reference guide to photo quality based on lighting, focus, and angle to the whale (Olson *et al.* 2021) will be used. Coding identification photos for quality is a standard methodological approach in the use of photo-identification data prior to analysis (e.g. Calambokidis *et al.*, 2008; Friday *et al.*, 2000; Mizroch and Harkness, 2003). Photo quality codes will be entered directly into the SHBWC software which will allow for the extraction of the highest quality data for use in analysis.

#### (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 report on the SHBWC as well as papers reporting results from matching process are presented to the Scientific Committee of the IWC.

Peer reviewed publications and press releases may also be considered when matches are found.

## 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)
Regional matching process with new contributions from southeast Pacific	Barbara Galletti & Paula Olson	01/23	04/23
Regional matching process with new contributions from Australia	Barbara Galletti & Chandra Salgado	01/23	04/23
Photo-quality control of new photos from southeast Pacific and Australia	Barbara Galletti & Paula Olson	03/23	04/23
Work with database and software to produce a reporting system that handle multiple marks.	Barbara Galletti	01/23	04/23
Matching process between Timor Leste and Australia	Barbara Galletti & Chandra Salgado	04/23	04/24
Photo-quality control of photos from Timor Leste	Barbara Galletti & Paula Olson	04/23	04/24

Expected outputs	Completion date (mm/yy)
Finalize regional matching and photo quality control for the entire Southeast pacific region	04/23
Finalize regional matching and photo quality control for the entire Australia region	04/23
Finalize matching between Timor Leste and Australia	04/24
Preliminary report on progress 2023	04/23
Preliminary report on progress 2024	04/24

## 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
Bárbara Galletti	Centro de Conservación Cetacea	SHBWC curator and regional coordinator
Paula Olson	NOAA	Regional coordinator
Chandra Salgado-Kent	Ocean Blueprints	Regional coordinator
Peter Gill	Blue Whale Study Inc.	Contributor
Chris Burton	Western Whale Research	Contributor
Curt Jenner	Center for Whale Research Western Australia	Contributor
Mike Double	Australian Antarctic Division	Contributor
Luciana Moller	Flinders University	Contributor
Asha de Vos	Sri Lanka Blue whale Project	Contributor
Ken Findlay	Mammal Research Institute Whale Unit, University of Pretoria	Contributor
Gustavo Chiang	Fundación MERI	Contributor
Leigh Torres	Oregon State University, Marine Mammal Institute	Contributor
Maja Nimak-Wood	Gardline	Contributor
Rodrigo Hucke-Gaete	Centro Ballena Azul	Contributor
Maria Jose Perez	Centro de Investigación Eutropia	Contributor
Kimberly Goetz	National Institute of Water and Atmospheric research Ltd	Contributor
Abigail Alling	Biosphere Foundation	Contributor
David Donnelly	Killer Whales Australia	Contributor
Frederick Toro	Phantalassa	Contributor
Upul Liyanage	National Aquatic Resources Research and Development Agency	Contributor
Karen Edyvane	Universidade Nacional Timor Lorosa'e	Contributor
Benjamin Kahn	APEX Environmental PTy	Contributor

## 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)	(1) Matching & photo QC CRD-ETP vs SEP	20 GBP/hour	577	11,546	11,546		
	(2) Matching & CRD-ETP vs BWC		99	1,984	1,984		
	(3) Matching & photo QC new Australia vs Australia		65	1,306	1,306		
	(4) Matching & photo QC new CWR vs Australia		770	15,401	15,401		
	(5) Matching & photo QC Timor Leste vs Australia		743	14,861		14,861	
(2) Travel/subsistence (by person or est. total for IPs)							
(3) Services (by item)	IT work to develop report to be used for mark-recapture with multiple marks (left and right)	2000	1	2,000	2000		
(4) Reusable equipment							
(5) Consumables							
(6) Shipping & Customs (by Item)							
(7) Insurance (by item)							
(8) Other							
<b>TOTAL</b>				<b>47,097</b>	<b>32,236</b>	<b>14,861</b>	

### Co-funding Memo:

Source	Purpose of Funding	Cost £GBP	Secured/Tentative?
<b>TOTAL</b>			

<b>Total value of project:</b>	<b>Cost £GBP</b>
Funds requested from IWC	<b>47,097</b>
Co-funding	
<b>TOTAL</b>	<b>47,097</b>

## 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](mailto:secretariat@iwc.int)).

All data is uploaded to the SHBWC, a repository catalogue that is available to all contributors and can also be used for IWC purposes. When registering to the SHBWC, contributors signed the data sharing agreement that includes the IWC data sharing agreement. The SHBWC is hosted at IWC servers.

## 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: