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Progress report on Southern Hemisphere
Blue Whale Catalogue: Period June
2015-May 2016

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INTERNATIONAL
WHALING COMMISSION

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ABSTRACT

The Southern Hemisphere Blue Whale Catalogue has a total of 1381 individual blue whale photo-identifications that include areas off Antarctica, Chile, Peru, Ecuador-Galapagos, Eastern Tropical Pacific, Australia, Timor Leste, New Zealand, Southern Africa, Madagascar and Sri Lanka. In 2015-2016, the catalogue increased 30% with the addition of new photo-identifications. Five whales were re-sighted within Australia. No matches were found with New Zealand. No matches have been found between comparisons of Antarctica, ETP and Chile. Future work should include: (a) comparisons between whales from Australia/NewZealand/Indonesia and whales from Antarctica, ETP and Chile; and (b) begin a new regional matching process with the latest contributions received.

INTRODUCTION

The Southern Hemisphere Blue Whale Catalogue (SHBWC) is an international collaborative effort to facilitate cross-regional comparison of individual blue whale photo-identification catalogues. In 2006 the Scientific Committee of the International Whaling Commission (IWC, 2007) agreed to initiate an in-depth assessment of Southern Hemisphere blue whales and in 2008, the Committee endorsed a proposal to establish a central web-based catalogue of blue whale identification photographs (IWC, 2009).

Comparisons between catalogues off Chile found one match over ten years (Galletti Vernazzani and Cabrera, 2011). Progress on comparisons between the eastern South Pacific Ocean, Eastern Tropical Pacific Ocean (ETP) and Southern Ocean have been reported at the 2012 and 2013 IWC Scientific Committee meeting with no matches found (Galletti Vernazzani and Olson, 2012, 2013).

In 2014, major contributions from Australian researchers were received and comparisons between Australian catalogues were scheduled for 2014-2015. The Committee also focused its discussion on aspects of quality control and matching processes by both the contributing institutions and the SHBWC. It also established an intersessional email correspondence group to further develop and reinforce SHBWC protocols (IWC, 2015).

The present report summarizes the progress made between June 2015 to May 2016 on the work of the SHBWC.

UPLOADING OF CATALOGUES

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.

The catalogue is a specially designed web-based platform that allows for online simultaneous upload and comparisons of catalogues from different areas (IWC, 2009).

Catalogues currently maintained at the SHBWC include waters off Antarctica, Chile, Peru, Ecuador-Galapagos, Eastern Tropical Pacific, southeastern Australia, western Australia, Timor Leste, New Zealand, Southern Africa, Madagascar and Sri Lanka. A total of 1381 blue whales currently comprised the catalogue, accounting for 989 right side photoIDs, 1006 left side and 46 flukes (Table 1).

This represents an increase of about 30% of the total catalogued whales thanks to the new photoID whales received in 2015-2016. Almost all researcher groups have fully contributed their photoIDs.

In 2015-2016, efforts were focused on finalizing matching process of Australian catalogues. However in 2016, additional blue whale photoIDs have been received at the SHBWC from within this geographic area. Therefore a matching process needs to be schedule for these new entries.

MATCHING PROGRESS

Regional comparisons between Australia/New Zealand/Indonesia with catalogues uploaded before December 2015 are completed.

431 photoID blue whales from four different research groups working in the Perth Canyon (west Australia), Geopraphe Bay (west Australia), Bonney Upwelling (southern Australia) and around New Zealand were compared. Five whales were re-sighted within all three areas of Australia but no matches were found with New Zealand blue whales (Galletti Vernazzani *et al.* 2016).

Between regions comparisons of Antarctica, ETP and Chile have also been finalized. No matches were found for left and right sides (Galletti Vernazzani and Olson 2013, Olson *pers. comm.*).

Future step should include comparisons between Australian/NewZealand/Indonesia whales with Antarctica, ETP and Chile. In addition new contributions from all regions should start process of regional matching.

SOFTWARE IMPROVEMENTS

Major improvements were implemented in the software and are finalized.

Changes include a new interface to upload images, improvement of security and stability, tools to adjust contrast and brightness, improvement of reporting systems (including encounter history matrix for individuals mark-recapture and report on whale details), new tools to edit information on database, and additional information on whaleID record such as location (lat/long), sex and availability of biopsy, among others.

REVIEW OF WORK PLAN AND FUTURE STEPS

Activities and timetable planned for 2014-2016 under the research proposal approved by IWC in 2014 were fully completed.

In 2016, matching process between ETP/Antarctica/South Pacific and Australia/ New Zealand/ Indonesia should start. Considering the number of photos, it is important to note that matching process is likely to be finalized in 2017-2018.

New contributions of photoIDs catalogues were received or are expected from researcher groups from Australia, New Zealand, Chile and South Africa. Regional matching should also start in2016-2017 for these new whales.

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REGION	Group	Quantity			Area
		Fluke	LeftSide	Right Side	
South America	IWC SOWER CHILE	0	14	9	Chile
	CCC	0	288	299	Chile
	MERI	0	0	0	Chile
	Subtotal	0	302	308	
ETP	NOAA	0	60	53	Peru, Ecuador, ETP
	Subtotal	0	60	53	
Indonesia-Australian-NewZealand	BWS	5	84	84	Southeastern Australia
	WWR	0	30	23	Timor Leste - Australia
	CWR	41	174	180	Western Australia
	AAD	0	38	37	Southeastern Australia / New Zealand
	OSU	0	0	0	New Zealand
	Asha de Vos	0	89	79	Sri Lanka
	MARVEL	0	15	12	Australia
	Subtotal	46	430	415	
South Africa-Madagascar	MRI	0	0	0	South Africa-Madagascar
	Subtotal	0	0	0	
Southern Ocean	AAD	0	37	43	Antarctica
	IWC SOWER	0	158	157	Antarctica
	MRI	0	19	13	Antarctica
	Subtotal	0	214	213	
TOTAL		27	1006	989	

Table 1 – Summary of photographic collection of blue whale catalogues under the SHBWC