401

THE NORFOLK MEETING I : CIRCUMPOLAR ANALYSES OF HISTORICAL AND CURRENT WHALE-ENVIRONMENT CORRELATIONS IN THE ANTARCTIC

D Thiele[1], E Chapman[2], L Dalla Rossa[3], K Daly[4], M Dinniman[2], A Friedlaender[5], E Hofmann[2], J Klinck[2], S Reilly[6], A Širović[7], K Stafford[8], A Worby[9]

[1]Whale Ecology Group, Deakin University, Warrnambool, Victoria, Australia, [2]CCPO, Old Dominion University, Norfolk, Virginia, United States, [3]Dept. of Zoology & Marine Mammal Research Unit, University of British Columbia, Vancover, B. C., Canada, [4]College of Marine Science, University of South Florida, St Petersburg, Florida, United States, [5]Duke University Marine Lab, Beaufort, North Carolina, United States, [6]Southwest Fisheries Science Center, La Jolla, California, United States, [7]Scripps Institute of Oceanography, La Jolla, California, United States, [8]Applied Physics Lab, University of Washington, Seattle, WA, United States, [9]Antarctic Climate & Ecosystems Cooperative Research Centre, University of Tasmania, Hobart, Tasmania, Australia

The 'Norfolk Meeting' was held in November 2005 as a joint IWC SO GLOBEC initiative to outline a program of work to expedite integrative circumpolar analyses of existing cetacean data series for the Antarctic. Our aim was to use the results of these analyses to summarise, on a circumpolar scale, what is now known about whale-environment correlations, then use this to shape and develop a truly integrative cetacean field program for the future (ICED) with data output targeted at predictive capacity for spatial modelling. A series of tasks were identified at the workshop, and work began on an initial round of relatively simple spatial mapping projects using both historical and current circumpolar whale and environmental data series/proxies. Comparison of historical and present day patterns of distributions of whales in the Antarctic has not been attempted before on a circumpolar scale, yet is a critical step to identify data and knowledge gaps. We used decadal blocks of whale catch and sighting data as proxies for past and present seasonal habitat use/distribution to investigate differences in the way species occupied habitat then and now. We mapped these and tested correlations against a range of environmental features (eg. krill distribution, sea water characteristics, sea ice extent, bathymetry, habitat type, position of the ACC, SB ACC and other fronts). The results of our analyses show strong correlations between baleen whale species and some environmental features and processes, and apparent changes in the way whales now inhabit parts of the Antarctic relative to historical usage. The lack of simultaneous whale/environmental data with any continual temporal coverage of areas and/or groups of animals, or of fine scale multidisciplinary data series clearly limits the type of integrative spatial analyses that can be conducted and thus our understanding of the processes driving whale distribution. The next generation of cetacean research (ICED and IPY) in the Antarctic will require long term field programs targeted at data for integrative and predictive modelling.