

Details on Australian Centre for Applied Marine Mammal Science (ACAMMS)
Approved Cetacean Projects for 2007/08
Total funding \$485,189

Project 11: New Computerised Fluke Matching System for Humpback Whales
\$ 53,347

This project will result in a new computer-based photo-recognition matching system that efficiently identifies individuals and finds resights in photo-identification catalogues of humpback whales. This project builds on previously successful research using a unique multifaceted computer-based recognition system to overcome the overwhelming problems of manually matching photographs of humpback whale flukes in large catalogues. The new system provides a rapid and improved method of obtaining mark-recapture data (RP4a) for abundance estimates and trends (RP1a), independent movements and levels of interchange among populations of humpback whales (RP1c) in Australia and the South Pacific for improved management and conservation outcomes.

Project 12: Population status of Western Australian humpback whales, 2008
\$ 177,750

The project will complement a major existing data set from surveys undertaken in 1999 and 2005 on northward migrating humpback whales from one of seven currently recognised southern hemisphere breeding stocks (Breeding Stock D). As in 2005, there will be two components (i) an aerial survey over two months, covering the peak migration period past Shark Bay, WA, where regular aerial surveys provided relative abundance and trend information over 1982-1994; (ii) a land-based survey over a shorter period, to 'ground-truth' the aerial survey. The result should be an estimated current absolute abundance for this Breeding Stock, together with a comparison with 2005 and 1999 results, for use in comprehensive assessments of southern hemisphere whale stocks, essential for their conservation and rational management.

Project 14: Using Unmanned Aerial Vehicles for surveys of marine mammals in Australia: test of concept
\$ 86,912

The conservation and management of many marine mammal populations relies on accurate and precise estimates of their abundance and distribution using aerial surveys. We aim to test whether Unmanned Aerial Vehicles (UAVs) can replace manned aircraft to (1) reduce costs, (2) reduced human risk, (3) deliver superior data on detection, location, abundance and identification of marine mammal species. This project aims to (1) develop and test technology and techniques for UAV surveys and (2) conduct and compare traditional manned and UAV surveys of dugongs and humpback whales to test the viability of UAV surveys.

Project 18: Humpback whales and the impact of noise: Controlled Exposure Experiments
\$ 81,180

Previous Humpback Whale Acoustic Research Collaboration (HARC) experiments successfully developed a methodology for performing Controlled Exposure Experiments (CEEs) and measuring the behaviours of humpbacks at multiple resolutions, in a well defined study area. This project will concentrate on CEEs and (1) document the range of behavioural reactions observed by the whales, (2) measure the received acoustic levels that elicit reactions, and (3) place the range of reactions observed into the context of normal behaviours for these whales at this site. This project will improve our knowledge of the effects of anthropogenic noise on humpback whale behaviour and acoustic communication.

Project 20: Population size and distribution of Western Australian pygmy blue whales
\$ 44,000

This project will investigate the movement patterns and population size of the pygmy blue whales that aggregate off south-western Australia each autumn. Currently it is not known if these animals represent a sub-population or if they range-widely and form part of a larger population with linkage to other known aggregations in Australian waters. We will deploy small, biologically inert, implantable satellite-tags to investigate the movements of these whales and, through supplement existing data, employ genetic tagging and photo-identification data to estimate population size and the recurrence of the same individuals between years.

Project 21: Population structure and sub-structure of Australian humpback whales
\$ 42,000

Through the genetic analysis of biopsy samples collected in north-western and south-eastern Australia this project aims to reveal:

- 1) the extent of exchange of individuals between western Australian, eastern Australian and potential linkages to adjacent Pacific populations;
- 2) whether whales sampled in migratory corridors along the Australian coast belong to one or more breeding populations;
- 3) whether temporal or spatial substructure exists within the west Australian breeding population;

The data provided by this research will help to understand the impact of past whaling activity and also inform any assessment of possible impacts from the proposed lethal-take of humpback whales by the Japanese JARPA II whaling program.