



WHALE RESEARCH

One of the reasons for our fascination with whales is that we still have so much more to learn about these incredible animals.

The Australian Government supports non-lethal research to increase our knowledge of whales and dolphins and their habitat.

Since 1996, the Australian Government has invested over \$3 million in research and other activities to promote whale conservation.

The Australian Government is currently funding research projects to find out more about whale populations and trends, migratory pathways and important habitat areas (calving, resting and feeding). Much of this work involves close collaboration with other Australian Government departments, state and territory governments, universities, museums, researchers and conservation groups.

HOW ARE WHALES STUDIED?

All Australian whale research is conducted to ensure minimum disturbance to the animals. Our methods are among the most advanced in the world and prove that whales do not need to be killed for 'science'.

VISUAL AND ACOUSTIC SURVEYS – aerial and acoustic surveys are being conducted in Western Australia and Victoria to study blue whales, the largest mammals on Earth. Southern right whales are also being studied around the southern coastline to determine population numbers.

SATELLITE TRACKING – Australia is developing techniques to use small satellite tags to track the movements of larger whales.

BIOPSY SAMPLING – small pieces of skin and blubber can yield much information about whale DNA and genetic stocks. A number of projects are under way that involve the careful collection and analysis of samples to help determine population size and the degree of integration between populations.

FAECES SAMPLING – collecting and analysing whale faeces helps us determine whale diet, which contributes to the overall picture of where whales feed, what they eat and how whales fit into the food webs of complex marine ecosystems.

STATISTICAL MODELLING – improving our ability to estimate whale numbers is central to all aspects of their conservation and protection around Australia and in the Southern Ocean. Statisticians are working to develop robust statistical models which will allow us to better estimate whale populations.

QUICK FACTS






- Australian whale research only uses non-lethal techniques.
- Researchers require a permit under the *Environment Protection and Biodiversity Conservation Act 1999* to ensure minimal interference to whales.
- New DNA analysis techniques are being developed in Australia to help us understand even more about their biology, life history and what affects them.
- Commercial whaling wiped out approximately 95 per cent of the humpback whale population, before whaling of humpbacks was banned in 1964. Research is helping us understand if and how whale populations are recovering.

IMPROVING RESEARCH METHODS

At present it is difficult to estimate the age of live whales. New non-lethal methods are being explored, which focus on characteristic cell structures known as telomeres.

Telomeres are the DNA structure at the end of chromosomes. Research shows that telomeres get shorter over the life-span of animals. Using DNA from small skin samples may be useful in estimating the age of a whale.

RESEARCH PROJECTS

TYPE OF WHALE	PROJECT DESCRIPTION	RESEARCH METHOD
Blue whales 	Distribution and abundance around Victoria and Western Australia	Aerial surveys and satellite tagging
Southern right whale 	Distribution, abundance and rate of population increase	Aerial surveys
	Ecology and life history at the Head of the Bight, South Australia	Land-based survey and photo identification
Humpback whales 	East and west coast population surveys	Aerial and land-based surveys
	Genetic survey to determine the extent of integration between east and west coast populations	Biopsy sampling
Minke whales 	Estimating unseen minke whales by combining sightings of minke whales with statistical estimates.	Statistical modelling and boat based surveys
Small cetaceans 	Development of models to predict relative population abundance and distribution of 'at-risk' in-shore dolphins (Indo-pacific humpback and snub fin dolphins)	Statistical modelling

Illustrations by Tony Pyrzakowski

FURTHER INFORMATION

You can find more information about whales and dolphins at www.deh.gov.au/whales or contact the Community Information Unit by emailing ciu@deh.gov.au or call 1800 803 772.