

Australia. Progress report on cetacean research, January 2009 to December 2009, with statistical data for the calendar year 2009

COMPILED BY JASON GEDAMKE, ISABEL BEASLEY, MILENA RAFIK, & GAVIN HINTEN

*Australian Marine Mammal Centre – Australian Antarctic Division
Department of Environment, Water, Heritage and the Arts
Channel Highway
Kingston, TAS 7050
jason.gedamke@aad.gov.au*

* Compilers of state/territory data (in bold on table below): New South Wales (NSW) – G. Ross; Northern Territory (NT) – S. Whiting; South Australia (SA) – C. Kemper, T. Segawa, & S. Murray-Jones; Tasmania (TAS) – R. Gales & R. Alderman; Victoria (VIC) – L. Tucker; Western Australia (WA) – J. Goldberg & P. Mawson

This report summarises information obtained from:

Name of agency/institute	Abbreviation (use in rest of report)	Contact e-mail address
Australian Marine Mammal Centre	AMMC	Nick.Gales@aad.gov.au
Australian Fisheries Management Authority	AFMA	Justine.Johnston@afma.gov.au
Blue Whale Study Inc.	BWS	petegill@bigpond.com; margie@bluewhalestudy.org
Cape Solander Whale Migration Study	CSWMS	geoff.ross@environment.nsw.gov.au
Department of Environment and Conservation - WA	DEC-WA	jen.goldberg@dec.gov.au;
Department of Environment and Conservation - WA	DEC-WA	peter.mawson@dec.gov.au; douglas.coughran@dec.gov.au
Department of Environment and Heritage	DEH SA	Murray-Jones.Sue@saugov.sa.gov.au
Dept. Environment and Resource Management	DERM	Col.limpus@derm.qld.gov.au; michelle.boyle@derm.qld.gov.au
Department of Environment, Climate Change and Water, NSW	DECCW	geoff.ross@environment.nsw.gov.au
Department of Primary Industries, Parks, Water and Environment	DPIPWE	Rosemary.Gales@dPIPWE.tas.gov.au
Department of Natural Resources, Environment, the Arts and Sport	NRETAS	Scott.whiting@nt.gov.au
Department of Sustainability and Environment	DSE	mandy.watson@dse.vic.gov.au
Department Sustainability and Environment	DSE	linda.tucker@dse.vic.gov.au
Dolphin Research Institute	DRI	research@dolphinresearch.org.au
Great Barrier Reef Marine Park Authority	GBRMPA	mark.read@gbmpa.gov.au
James Cook University	JCU	Alastair.Birtles@jcu.edu.au; Helene.Marsh@jcu.edu.au
Flinders University/SARDI	SARDI, SA	guido.parra@flinders.edu.au
Monash University	Monash	kate.charlton@sci.monash.edu.au
Murdoch University Cetacean Research Unit	MUCRU	h.smith@murdoch.edu.au; l.bejder@murdoch.edu.au; n.stephens@murdoch.edu.au; s.allen@murdoch.edu.au; c.holyoake@murdoch.edu.au
Museum Victoria	NMV	robrien@museum.vic.gov.au
Norfolk Island Whale Survey	NIWS	adrianoosterman@hotmail.com
Pacific Whale Foundation	PWF	greg@pacificwhale.org
Sandy Ingleby		sandyi@austmus.gov.au
Sea World		David.Blyde@wvtp.com.au
South Australian Museum	SAM	Catherine.Kemper@samuseum.sa.gov.au
South Australian Research and Development Institute	SARDI	Hamer.Derek@saugov.sa.gov.au

Southern Cross University Whale Research Centre	SCUWRC	dburns@scu.edu.au; cfury@scu.edu.au; pbeeman@scu.edu.au;
The Oceania Project	TOP	wally@oceania.org.au
University of Queensland	UQ	r.dunlop@uq.edu.au
University of Tasmania	UTAS	Karen.Evans@csiro.au
Western Australian Museum	WAM	bannisj@bigpond.com
Western Whale Research Pty Ltd	WWR	cb@it.net.au
Whales and Dolphin Conservation Society	WDCS	bossley@internode.on.net

Note: Data presented here are compiled from federal and state agencies, research organizations, and individual researchers who respond to a request for information. It is based upon submissions received, and as such, is not a complete record of research undertaken in Australia, and data that are reported are often based upon unpublished records.

1. SPECIES AND STOCKS STUDIED

IWC common name	IWC recommended scientific name	Area/stock(s)	Items referred to
<u>MYSTICETES</u>			
Blue whale (Antarctic and/or pygmy forms)	<i>Balaenoptera musculus (brevicauda)</i>	SA; WA; VIC	2.1.1; 2.1.2; 2.2; 3.1.1; 4.1; 4.3; 6.3.1, 6.3.2; 8; 9
Bryde's whale	<i>Balaenoptera edeni</i>	East Coast	8
Fin whale	<i>Balaenoptera physalus</i>	SA	4.2; 6.3.1; 8
Humpback whale	<i>Megaptera novaeangliae</i>	Breeding Stock D & E; Group IV & V; NSW; NT; SA; VIC; WA	2.1.1, 2.1.2, 2.2; 4.1; 4.3; 6.3; 6.3.1, 6.3.2; 7.3.2; 8,
Minke whale, Antarctic	<i>Balaenoptera bonaerensis</i>	East Antarctic	2.11; 2.2; 8; 10; 11.2
Minke whale, Dwarf	<i>Balaenoptera acutorostrata</i>	NSW; QLD; WA; Eastern Australia; Southern Ocean; TAS	2.1.1, 2.1.2; 2.2; 3.1.1; 3.2; 4.1; 8; 9; 11.1; 11.2
Right whale, Pygmy	<i>Caperea marginata</i>	SA; TAS; WA	4.3, 8, 9
Right whale, Southern	<i>Eubalaena australis</i>	NSW; SA; SE Australia; WA	2.1.1, 2.1.2; 2.2, 3.1.1, 4.1; 6.3; 6.3.1; 6.3.2; 10, 11.1, 11.2
Unid. baleen whale	Unidentified Mysticeti	TAS	2.1.2
<u>ODONTOCETES</u>			
Andrew's beaked whale	<i>Mesoplodon bowdoini</i>	NSW	8
Australian snubfin dolphin	<i>Orcaella heinsohni</i>	QLD; NT	2.1.1, 2.2, 3.1, 8; 9
Blainville's beaked whale	<i>Mesoplodon densirostris</i>	NSW	4.3; 8
Bottlenose dolphin, Common	<i>Tursiops truncatus</i>	Coral Sea; NSW; SA; TAS; VIC	2.1.1; 4.3, 8, 9; 7.3.2, 8,
Bottlenose dolphin, Indo-pacific	<i>Tursiops aduncus</i>	QLD; NSW; SA	3.1.1; 4.2; 4.3; 7.2; 7.3.1; 7.3.2; 8; 9
Bottlenose dolphin	<i>Tursiops</i> spp.	NSW; NT; SA; VIC; WA;	2.1.1; 2.2; 3; 3.1.1; 4.3; 4.4; 5; 7.3.2; 8; 9; 11.2
Common dolphin, Short-beaked	<i>Delphinus delphis</i>	Australia; QLD; NSW; SA; Southern Ocean; TAS; VIC	2.1.1; 2.2; 3.1.1; 4.2; 4.3; 7.3.2; 8; 11.2
Cuvier's beaked whale	<i>Ziphius cavirostris</i>	NSW	4.3; 8
Dwarf sperm whale	<i>Kogia simus</i>	NSW; WA	8
False killer whale	<i>Pseudorca crassidens</i>	Coral Sea; QLD; NSW; NT; SA	2.1.1, 2.2; 4.3; 8, 11
Fraser's dolphin	<i>Lagenodelphis hosei</i>	Coral Sea	2.1.1
Ginkgo-toothed beaked whale	<i>Mesoplodon ginkgodens</i>	NSW	4.3
Gray's beaked whale	<i>Mesoplodon grayi</i>	TAS; WA	4.3, 8
Hector's beaked whale	<i>Mesoplodon hectori</i>	WA	4.3, 8
Indo-pacific humpback dolphin	<i>Sousa chinensis</i>	QLD; NT	2.1.1, 2.2, 3.1, 4.3; 8; 9
Killer whale	<i>Orcinus orca</i>	Australia; East Antarctic; SA; Southern Ocean; TAS; VIC	2.1.1; 2.1.2; 2.2; 10; 11.2
Melon headed whale	<i>Peponocephala electra</i>	Australia; Coral Sea; QLD	2.1.1, 2.1.2, 2.2; 8
Pantropical spotted dolphin	<i>Stenella attenuata</i>	Australia	7.3.2; 8
Pilot whale, Long-finned	<i>Globicephala melas</i>	Australia; Southern Ocean; TAS; VIC; WA	2.1.1, 2.2, 3.1.2, 4.3, 6.3.2; 8
Pilot whale, Short-finned	<i>Globicephala macrohynchus</i> .	Australia, NSW; QLD	2.1.2; 6.3.2; 8; 4.3
Pilot whale	<i>Gobicephala</i> spp.	Australia; Coral Sea	2.1.1; 2.1.2; 2.2
Pygmy killer whale	<i>Feresa attenuata</i>	NSW	4.3; 8
Pygmy sperm whale	<i>Kogia breviceps</i>	East Coast	8
Risso's dolphin	<i>Grampus griseus</i>	TAS; WA	2.1.2; 4.3; 8

Sperm whale	<i>Physeter macrocephalus</i>	Australia; Coral Sea; QLD; SA; TAS; Southern Ocean; VIC; WA	2.1.1; 2.1.2; 2.2; 4.1; 4.3; 8; 9; 11.2
Spinner dolphin	<i>Stenella longirostris</i>	Coral Sea; QLD	2.1.1; 7.3.2; 8
Strap-toothed beaked whale	<i>Mesoplodon layardii</i>	WA	8
Striped dolphin	<i>Stenella coeruleoalba</i>	SA; TAS	4.3
Unid beaked whale		Australia; Coral sea	2.1.1; 2.1.2; 2.2
Unid. cetacean		TAS	2.1.2
Unid. dolphin		SA	7.3.2; 8
Unid. large whale		Australia	6.3.2

2. SIGHTINGS DATA

2.1 Field work

2.1.1 Systematic

Target species	Date	Area	No. of sightings	Contact person/institute and references
Australian snubfin; Indo-pacific humpback; bottlenose dolphin	2009 monthly (ongoing)	Alligator Rivers Region, Kakadu National Park, Darwin Harbour, Cobourg Peninsula, NT		Carol Palmer/NRETAS
Australian snubfin; Indo-pacific humpback; bottlenose dolphin	Oct 2009	Sir Edward Pellew Islands	9	Helene Marsh/JCU
Beaked whale	July 2009	Coral Sea	3	R. Dunlop/UQ (in prep)
Blue whale	17 Jan 2009	Bonney Upwelling - Aerial surveys	20	Peter Gill/BWS
Blue whale	1 Sep 09-14 Dec 09	Geographe Bay	Approx 98	Chris Burton/WWR –Land surveys
Blue whale	10/11/09-12/12/09	Geographe Bay	Approx 20	Chris Burton & Luciana Moller/WWR –Small vessel biopsy surveys
Bottlenose dolphin	Jan-Nov 2009	Bunbury, Western Australia	196 individuals (238 group encounters)	Holly Smith/MUCRU
Bottlenose dolphin	2009	Bunbury (Preston-Binningup), Western Australia		Valissa Buchanan/MUCRU
Bottlenose and Common dolphins (*1)	7 Jan 09 – 19 Oct 09	Port Phillip/Western Port	29	Kate Charlton-Robb/DRI&Monash; Sue Mason/DRI; David Donnelly/DRI
Bottlenose dolphin (*1)	07 Jul 09-12 Nov 09	Gippsland Lakes	11	Kate Charlton-Robb/DRI&Monash; Sue Mason/DRI; David Donnelly/DRI
Bottlenose dolphin, Common	July 2009	Coral Sea	45+	R. Dunlop/UQ (in prep)
False killer whale	July 2009	Coral Sea	15 – 20	R. Dunlop/UQ (in prep)
Humpback whale (*1)	21 Sep 09	Port Phillip	1	Sue Mason/DRI
Humpback whale (*2)	2 Jun – 18 Oct 09	Logan's Beach - whale viewing platform	Data compilation not yet complete (includes repeat sightings of same individuals)	M. Watson/DSE
Humpback whale (*4)	24 May -31 Jul 09	Cape Solander, NSW	1908	CSWMS
Humpback whale	July 2009	Coral Sea	10	R. Dunlop/UQ (in prep)
Humpback whale	1 Sep 09-14 Dec 09	Geographe Bay	Approx 1000	Chris Burton/WWR – Land and small vessel surveys
Humpback whale	12 Oct 09 – 05 Nov 09	Norfolk Island	20	A. Oosterman/NIWS (Oosterman, Whicker & Garbett 2010)
Humpback whale	21 Jul - 25 Aug 2009	Port Douglas/Cairns and the Whitsunday Islands	127	Greg Kaufman/PWF
Humpback whale (*5)	6 Aug – 16 Oct 2009	Hervey Bay	883	Trish and Wally Franklin/TOP
Killer whale	16-31 Dec 2009	Antarctica-Vincennes Bay and Davis Sea	49	N. Kelly/AMMC

Minke whale	1 Sep 09-14 Dec 09	Geographe Bay	Approx 4	Chris Burton/WWR – Land and small vessel surveys
Minke whale, Antarctic (*3)	16-31 Dec 2009	Antarctica-Vincennes Bay and Davis Sea	14	N. Kelly/AMMC
Pilot whale	July 2009	Coral Sea	77+	R. Dunlop/UQ (in prep)
Right whale, Southern (*2)	2 Jun – 18 Oct 09	Logan's Beach - whale viewing platform	Data compilation not yet complete (includes repeat sightings of same individuals)	M. Watson/DSE
Right whale, Southern	September 2009	Southern Australian coast between C Leeuwin (WA) and Ceduna (SA)	782 animals (244 cow/calf pairs)	J Bannister/WAM (ref Bannister 2010)
Right whale, Southern	1 Sep 09-14 Dec 09	Geographe Bay	Approx 30	Chris Burton/WWR – Land and small vessel surveys
Sperm whale	July 2009	Coral Sea	1	R. Dunlop/UQ (in prep)
Spinner dolphin	July 2009	Coral Sea	80+	R. Dunlop/UQ (in prep)
Various	2009	Southern Ocean west of Tasmania	Common dolphin (3); Killer whale (1); Minke whale (1); Pilot whale, long-finned (2); Sperm whale (2);	K.Evans/UTAS

Notes

(*1) *Common and bottlenose dolphin population surveys (DRI & Monash)*. The DRI and Monash conducted surveys on the resident common and bottlenose dolphin populations in Port Phillip throughout 2009, on the bottlenose dolphin population in the Gippsland Lakes in July and November 2009 and the bottlenose dolphin population in Western Port during January and February of 2009. Dorsal fin photographs were collected for the purpose of identifying individuals, in addition other areas of the dolphins' bodies were deliberately photographed as a means of assessing gross health. Behavioural data was also collected during surveys. No biopsy samples were collected during 2009 (previously collected by Kate Charlton-Robb of Monash University). Researchers conducted 18 surveys from the DRI's research vessel. A total of 32 bottlenose dolphin pods, 8 common dolphin pods and 1 humpback sub-adult pair were observed during surveys completed in 2009.

(*2) *DSE surveys*. Surveys carried out by DSE and trained volunteers up to 4 hrs per day (2 hrs AM, 2 hrs PM) every day between June and October at Logan's Beach viewing platform, Warrnambool, VIC.

(*3) *Aerial survey for Antarctic minke whales (AMMC)*. This aerial survey programme aims to discover whether Antarctic minke whales are in fact in the sea ice in east Antarctica (in waters where non-ice strengthened ships cannot access) in significant enough numbers to explain the overall population decline detected over the last few decades. A secondary motivation for this research is to provide a foundation for a habitat model for minke whales based on sea ice distribution and dynamics. Field work for this aerial survey programme has run for three summer seasons. The 2007/08 season tested the concept of flying aerial surveys using the CASA-212 aircraft from an Australian Antarctic station. In the second season (2008/09) a small-scale survey was conducted over Vincennes Bay near Casey station in eastern Antarctica (66° 17' S 110° 32' E). During the third (and currently final) season (2009/10) a full-scale aerial survey was conducted across Vincennes Bay in the east and stretching to seas/polynyas around Shackleton Ice Shelf (centred around 66° S 100° E) and the east sections of the Davis Sea (centred around 66° S and 90° E) in the west. During both the small-scale and full-scale aerial surveys, a systematic survey design with north-south orientated transects was implemented, covering a wide range of sea ice concentrations and habitats. Around the Shackleton Ice Shelf and the Davis Sea, zigzag transects were implemented. Although this aerial survey was targeting Antarctic minke whales, many killer whales were also observed (ecotype undecided). Analyses are on-going. It should be noted that the aerial survey for the 2009/10 continued into 2010. All survey effort and sightings encountered after 31 December, 2009 are not included here and will be reported in next year's Progress report.

(*4) *Cape Solander Whale Migration Study (CSWMS)*. Between the 24th of May and the 31st of July 2009, trained volunteers recorded the species, pod size, time sighted, bearing, distance from shore and behaviour of all marine mammals observed passing Cape Solander in Botany Bay National Park, Sydney during daylight hours. A total of 68 days were surveyed during the 2009 northern migration season. Weather data was also recorded on an hourly basis. A total of 1908 humpback whales were sighted. The data collected by community volunteers provides a baseline to the species and numbers of cetaceans that migrate past the coast, the approximate preferred distance offshore, and average pod size. It also provides information on the peak periods of migration and the percentage annual increase/decrease in the recovering population numbers.

(*5) *The Oceania Research Project – Long-term humpback whale study, Hervey Bay 1992-2009*. The Oceania Project conducted the 20th year of fieldwork of a long-term survey of humpback whales in Hervey Bay. Boundaries of the survey area are Rooneys Point, Fairway Buoy, Coongul Creek and west coast of Fraser Island

within the Whale Management & Monitoring Area of the Great Sandy Marine Park. The survey is being conducted under scientific permit WITK01192903.

The 2009 survey was undertaken from a 12-metre vessel for 60 days between August 6th and October 16th 2009 involving a total 480 hours of effort. Observations were made on 883 individual Humpbacks in 386 pods. A total of approximately 7000 Photo-id photographs were obtained, 15 hours of behavioural DV-CAM video. A total of 69 x 15 min systematic samples of humpback song and social sounds were recorded between 6th August and 16th October. In addition 13 sloughed skin samples were obtained. Systematic observational data of humpback pods included date, time, GPS positions, number of individuals, composition & behaviour. Photography of ventral flukes, lateral body colouration patterns and left and right dorsals were obtained as well as behavioural video and systematic samples of whale song and social sounds.

2.1.2 Opportunistic, platforms of opportunity

Primary species	Area	Data type/method	Collected by	Platform	Location of archive (if applicable)	Contact person/institute and refs
Blue whale	Victoria	Opportunistic (15 recorded sightings)	Mandy Watson, DSE staff, other reliable sources	Aircraft during search for entangled Blue whale SW Victoria	DSE, Warrnambool	Mandy Watson/DSE
Humpback whale (*1)	Port Phillip, VIC	Photo-ID*; sightings	crew	Coxswain training vessel	*DRI	David Donnelly/DRI
Humpback whale (*2)	Port Douglas/Cairns, QLD	Photo-ID*; sightings	Scientists	Research vessel & whalewatching vessel	*PWF (Hawaii)	G. Kaufman/PWF
Humpback whale	Whitsunday Islands, QLD	Photo-ID*; sightings	Scientists	Research vessel	*PWF (Hawaii)	G. Kaufman/PWF
Humpback whale	Hervey Bay, QLD	Photo-ID*; sightings	Scientists	Research vessel & whalewatching vessel	*PWF (Hawaii)	G. Kaufman/PWF
Humpback whale	Eden, NSW	Photo-ID*; sightings	Scientists	Research vessel & Whalewatching vessel	*PWF (Hawaii)	G. Kaufman/PWF
Humpback whale	Norfolk Island	Sightings	A.Oosterman and volunteers	land stations and charter vessel	NIWS	A.Oosterman/NIWS; Oosterman, Whicker & Garbett (2010)
Humpback Whale	SA	Opportunistic	public	various	SAM	Catherine.Kemper/SAM
Humpback whale	Victoria	Opportunistic (19 recorded sightings)	Mandy Watson, DSE staff, other reliable sources	Land based eg: Logans Beach viewing platform and other locations along Victorian coast	DSE, Warrnambool	Mandy Watson/DSE
Humpback whale	Byron Bay	Photo-ID;	Dedicated observer	Whale watching vessel	SCUWRC	P Beeman/SCUWRC
Humpback whale	Tweed Heads	Photo -ID	Pro. photographer	Whale watching vessel	SCUWRC	P Beeman/SCUWRC
Killer Whale	SA	Opportunistic	public	various	SAM	Catherine.Kemper/SAM
Killer whale	Victoria	Opportunistic (2 recorded sightings)	Mandy Watson, DSE staff, other reliable sources	Land based – Logans Beach viewing platform, Warrnambool, Victoria	DSE, Warrnambool	Mandy Watson/DSE
Minke whale, Dwarf (*3)	Northern GBR	Photo-ID; behavioural observation; sightings	Primarily scientists + vessel crew	whalewatching vessel	JCU	Dr A. Birtles/JCU
Right whale, Southern	Victoria	Opportunistic (176 recorded sightings)	Mandy Watson, DSE staff, other reliable sources	Aircraft, and land based eg: Logans Beach viewing platform, and other locations along Victorian coast	DSE, Warrnambool	Mandy Watson/DSE * South-east Australian Southern Right Whale Photo-identification Catalogue
Right whale, Southern	SA	Opportunistic	public	various	SAM	Catherine.Kemper/SAM

Various species (*4)	Australia	Logbook comment	Skipper	Commercial Fishing Vessel	AFMA database	Justine Johnston/AFMA
Various species (*4)	Australia	Observer Whale Sighting Form	Observer	Commercial Fishing Vessel	AFMA database	Justine Johnston/AFMA
Various species (*5)	TAS	Sightings	staff public crew	Light plane, shore, whalewatching vessel	N/A	R. Gales/DPIPWE

Notes

(*1) Common and bottlenose dolphin population surveys (DRI & Monash). During 2009 no opportunistic data was collected by DRI on resident the bottlenose or common dolphins of Port Phillip, the resident bottlenose dolphins of Western Port or the Gippsland Lakes. Fluke identification photos of humpbacks briefly visiting Port Phillip were taken opportunistically on one occasion while a researcher was onboard a training vessel. DRI continues to build its community dolphin-sighting network, which has resulted in the regular recording of dolphin sightings within most of Victoria's coastal waters including Port Phillip, Western Port and the Gippsland Lakes. The number of sightings being contributed by the public has been lower in this past year when compared to previous years. It is believed that this is due to fewer contributions by members of the public not the decrease in dolphin abundance.

(*2) Pacific Whale Foundation (PWF). PWF annually conducts vessel-based research along the East Coast of Australia to document the locations of humpback whales, primarily mothers with a calf. Observations were conducted from a 6.2 m XL ARIB (rigid hull inflatable) or from a whale watch vessel when indicated. Data was collected opportunistically in the form of digital photographs, digital audio recordings, and real time observations recorded on pre-formatted data sheets.

(*3) James Cook University Dwarf Minke Whale Project. Observations were recorded by researchers who were provided space on five tourist dive vessels (live-aboards: *Undersea Explorer, Taka, Spoil Sport; SeaFever and Phoenix*). Days on an individual vessel ranged from 12 to 36 (total of 74 researcher days at sea). Additional whales seen when researchers were not on board were reported on Whale Sighting Sheets.

Over 200 Whale Sighting Sheets were received from more than 10 tourism vessels operating in the northern and central Great Barrier Reef. All day and live-aboard dive vessels running swim-with whale programs have submitted WSS (return of these has been a GBRMPA permit requirement since 2003 season). Analyses of those returns are still ongoing.

(*4) Australian Fisheries Management Authority (AFMA). Opportunistic reports from skippers include: killer whale (21), humpback whale (n=1), unidentified pilot whale (6), common dolphin (1), and unidentified whale (28). Opportunistic reports from observers include: humpback whale (46), killer whale (2), long-finned pilot whale (12), melon-headed whale (3), minke whale (5), short-finned pilot whale (6), and sperm whale (4). Note: Some sightings may have been reported by both skipper and observer.

(*5) Department of Primary Industries, Parks and Water Whale Hotline (DPIPWE-TAS). DPIPWE manages a comprehensive sightings database facilitated by the Whale Hotline (0427 WHALES). The hotline provides a single point of call to report whale sightings and strandings within Tasmania. Due to the variety of sources, the sightings data presented encapsulates reports from agency staff undertaking dedicated cetacean work (e.g. attending strandings or sighting events), whale-watching and eco-tour operators, maritime professionals and the general public. Sightings are scored for their reliability based on key criteria such as experience of observer, features described and the availability of images relating to the sighting. Only reliable data are reported. Sighting events are an aggregate of sightings from multiple observers that relate to the same discrete individuals, considering the time between sightings, pod size, direction of travel and the presence of identifying features. If doubt occurs over species identification, species are allocated as unidentified and classified with the following, dependent on the information available (Unidentified Cetacean, Unidentified Mysticeti, Unidentified Delphinidae, Unidentified Ziphiidae, Unidentified Phocoenidae, Unidentified Odontoceti). The numbers of whales sighted presented in this table may not represent the number of discrete individuals due to lack of photo-ID for all individuals, chances of multiple sightings of the same individuals over large spatial scales and return on migratory paths. Please see section 3.1.1 for references to the agencies photo ID program for southern right whales and humpback whales. Staff refers to agency staff, public relates to sightings provided by members of the public from shore based vantage points, whilst crew refers to either fisherman or to one of a number eco-tour operators that call in sightings on a regular basis. Reported sightings include: minke (1 sighting, 2 animals), southern right whales (25 sightings, 42 animals), humpback whales (62 sightings, 146 animals), killer whales (15 sightings, 37 animals), risso's dolphin (1 sighting, 1 animal), unidentified cetacean (1 sighting, 1 animal), unidentified baleen whale (2 sightings, 2 animals).

2.2 Analyses/development of techniques

Target species	Date	Area	Methods/effort	Parameters/ factors measured	Contact person/institute; refs
Australian snubfin, Indo-pacific humpback, bottlenose dolphin	2008	Western NT	Boast-based surveys, genetic samples, photo-ID	Population estimate, genetic analysis	Carol Palmer/NRETAS
Australian snubfin, Indo-pacific humpback, bottlenose dolphin	2008	Gulf of Carpentaria, Sir Edward Pellew Islands, NT	Boast-based surveys, genetic samples, photo-ID		Helene Marsh/JCU, Guido Parra/SARDI
Blue whale	2002-07	Bonney Upwelling & adjacent waters	Habitat modeling (GLM) & within-season movement (density kernel estimation) from 69 aerial surveys	Depth, SST, chl- <i>a</i> , SST gradient, chl- <i>a</i> gradient, dist to 200m, dist to shore	Peter Gill/BWP; Paper in prep.
Bottlenose dolphin	2007-2009	Bunbury (Peppermint Beach-Binningup)	Line transect/photo-identification	Population estimate; sighting frequency; habitat use	Holly Smith/MUCRU
Humpback whale	12/10/09-05/11/09	Norfolk Island	land-based and vessel-based surveys	numbers observed, behaviour, weather statistics	A. Oosterman/NIWS; Oosterman, Whicker & Garbett (2010)
Humpback whale	2010	Entire GBRMP	Analysis of previous sighting data from the Eye on the Reef Database and interviews with skippers who work in the GBRMP.	Determining the extent to which humpback whales utilise the waters of the Great Barrier Reef Marine Park	Dr Mike Noad/UQ
Humpback whale (*1)	21/7/09-16/8/09	Port Douglas/Cairns, QLD	Photo-ID surveys	Distribution; Population estimate; Calving rates and intervals	G. Kaufman/PWF
Humpback whale (*1)	21-25/8/09	Whitsunday Islands, QLD	Photo-ID surveys	Distribution; Population estimate; Calving rates and intervals	G. Kaufman/PWF
Humpback whale (*1)	27/8/09-19/9/09	Hervey Bay, QLD	Photo-ID surveys	Distribution; Population estimate; Calving rates and intervals	G. Kaufman/PWF
Humpback whale (*1)	23/9/09-22/10/09	Eden, NSW	Photo-ID surveys	Distribution; Population estimate; Calving rates and intervals	G. Kaufman/PWF
Killer whale	16-31/12/2009	Antarctica-Vincennes Bay and Davis Sea	Line transect survey; double-platform	Distribution; sighting frequency; school size; sea ice concentrations; habitat	N. Kelly/AMMC; Hedley et al. (2007a), Kelly et al. (2008), Kelly et al. (2009b)
Minke whale, Antarctic	16-31/12/2009	Antarctica-Vincennes Bay and Davis Sea	Line transect survey; double-platform	Distribution; sighting frequency; school size; sea ice concentrations; habitat	N. Kelly/AMMC; Hedley et al. (2007a), Kelly et al. (2008), Kelly et al. (2009)
Minke whale, Dwarf - other species on opportunistic basis	2003-present	Northern GBR (primarily offshore from Cairns, Port Douglas, Cooktown, Lizard Is.)	GBR Minke Whale Sightings Network (Whale Sighting Sheets)	Species, location, date, time, type and duration of encounter, weather & sea conditions, behaviours observed	Dr A. Birtles/JCU; Mark Read/GBRMPA
Minke whale, Dwarf	2010	Northern GBR/Ribbon Reef area	Summary report produced from the previous six years of whale watching datasheets and targeted research	Whale behaviour; population demographics including size, sex ratio and descriptors of population size	Dr Alastair Birtles/JCU
Right whale, Southern	09/09	Southern Australia, Cape Leeuwin (WA) –Ceduna (SA)	Aerial survey	Annual percentage increase rate 1993-2009: All animals 7.17 (95% CI 3.92, 10.54), cow/calf pairs 7.51 (3.18, 12.02). Est. pop size for area surveyed 2530, 'Australian' population ca 3000.	J Bannister/WAM; Bannister 2010

Various species (beaked, sperm, pilot, false killer whale/other blackfish)	07/09	Coral Sea	Line transect survey/ visual and acoustic (towed array and drift loggers)	Distribution; sighting frequency, click frequency	R. Dunlop/UQ
Various species (sperm, minke, killer, long-finned pilot whale, common dolphin)	2009	Southern Ocean west of Tasmania	Line transect survey	Distribution; sighting frequency	K. Evans/UTAS

Notes

(*1) *Pacific Whale Foundation (PWF)*. For the 2009 season, there was a total research effort of 441.3 hours on the water and 7122.72 km distance travelled. Sites were located along the east coast of Australia (Port Douglas/Cairns, QLD; Whitsunday Islands, QLD; Hervey Bay, QLD; Eden, NSW), and included areas in Queensland and New South Wales (Please contact PWF for detailed breakdown of each individual site) see below for a breakdown of each individual site). In 68 days of field effort there was a total of 314 pods of whales sighted (including affiliations and disaffiliations), which were comprised of 756 animals. Mean pod size was 2.4 whales. 135.84 hours were spent observing whales (31% of field effort), with approximately 11 (total) animals observed each day. Using photographic identification techniques, 307 unique whales were identified. To date, 274 of these animals have been reconciled to the catalogue, 46 were re-sights to the catalogue and 228 were new animals added to the catalogue.

(*2) *The Oceania Project (TOP)*. TOP's photography in Hervey Bay for 2009 has been recorded in the field notes log, and archived on CD. The Hervey Bay Fluke catalogue, reconciled within and between seasons, for the period 1992-2006 consists of 20751 flukes. The photo-id analysis and intra-, inter-season reconciliation for 2007, 2008 and 2009 will be completed by late-2010. Statistical analysis of the 1992-2005 dataset has been completed for group characteristics and group behaviour. The 1992-2009 re-sight dataset will be completed and ready for CMR analysis by late-2010.

3. MARKING DATA

3.1 Field work

3.1.1 Natural marking data

Species	Feature	Area/stock	No. photo-id'd	Catalogue (Y/N)	Catalogue total	Contact person/institute; refs
Australian snubfin; Indo-Pacific humpback; bottlenose dolphin	2008	Western NT	Boat-based surveys, genetic samples; Photo-ID			Carol Palmer/NRETAS
Australian snubfin, Indo-Pacific humpback, bottlenose dolphin	2008	Gulf of Carpentaria, Sir Edward Pellew Islands, NT	Boat-based surveys, genetic samples, photo-ID			Helene Marsh/JCU, Guido Parra/SARDI
Blue whale	Lateral markings/ dorsal fin	Southern Australia	25	Y	~70	Margie Morrice/BWS
Blue whale	lateral	Geographe Bay, WA	13	N	170	Chris Burton/WWR – land and small vessel surveys
Bottlenose dolphin	Dorsal fin	Bunbury (Peppermint Beach-Binningup)	196	Y	196	Holly Smith/MUCRU
Bottlenose dolphin	Dorsal fin	Bunbury (Preston-Binningup)				Valissa Buchanan/MUCRU
Bottlenose dolphin	Dorsal fin	Port Phillip	Analysis continuing	Y	110	Sue Mason/DRI

Bottlenose dolphin	Dorsal fin	Gippsland Lakes	Analysis underway	Y	30	Kate Charlton-Robb – Monash/DRI; Sue Mason/DRI
Bottlenose dolphin, Indo-pacific	Dorsal fin	SA				Mike Bossley/WDCS
Common dolphin	Dorsal fin	Port Phillip	Analysis underway	Y	12	Sue Mason/DRI
Humpback whale	Flukes	Port Douglas/Cairns, QLD (Group V/B.S. E)	24	Y	4,854	G. Kaufman/PWF
Humpback whale	Flukes	Whitsunday Islands, QLD (Group V/B.S. E)	21	Y	4,854	G. Kaufman/PWF
Humpback whale	Flukes	Hervey Bay, QLD (Group V/B.S. E)	100	Y	4,854	G. Kaufman/PWF
Humpback whale	Flukes	Eden, NSW (Group V/B.S. E)	161	Y	4,854	G. Kaufman/PWF
Humpback Whale	Flukes	Perth, Exmouth, Shark Bay, WA (Group IV/BS D)	0	Y	765	G. Kaufman/PWF
Humpback whale	Flukes; L&R Dorsal fin/Lateral Body marks	Area V/Hervey Bay	833	Y	2075 (1992-2006); Approx 28251 (1992-2009)	Trish & Wally Franklin/ TOP
Humpback whale	Fluke	Geographe Bay, Western Australia	20	N	2000	Chris Burton/WWR – land and small vessel surveys
Humpback whale	Lateral	Geographe Bay, Western Australia	25	N	2500	Chris Burton/WWR – land and small vessel surveys
Humpback whale	Fluke	Group E (i)	110	Y	322	P Beeman/SCUWRC
Minke whale	Lateral	Geographe Bay, Western Australia	1	N		Chris Burton/WWR – land and small vessel surveys
Minke whale, Dwarf	L&R thorax region; plus scar; other unique features.	Northern GBR	For 2009: 12 whales identified; analysis ongoing	Y	So far (seasons 2006, 2007 and 2008); 383 complete ID's	Alastair Birtles/JCU; S. Soltzick/JCU.
Right whale, Southern	Head callosity pattern	Southern Australia, Cape Leeuwin (WA) – Ceduna (SA)	488 digital photos selected for matching to existing catalogue	N	5826 images 1976-2009, with ca 1300 individuals recognised so far (mainly to 2005)	J Bannister/WAM; Bannister 2010
Right whale, Southern	Head callosity	SE Australia	36 individuals	Y	130min	Mandy Watson/DSE
Right whale, Southern	Callosity aerial	SE Aus	7	Y	91	R. Gales/DPIPWE

3.1.2. Artificial marking data

DPIPWE-TAS attach approved floy “spaghetti” tags on individuals (5 bottlenose dolphin and 27 long-finned pilot whale) released alive at a stranding event on King Island 01/03/2009.

3.1.3 Telemetry data

Species	Tag type	No. successfully deployed	Maximum time transmitting	Contact person/institute; refs
Blue whale	Satellite	3	137 days	N. Gales, Australian Antarctic Division

Humpback whale	Satellite	38	108 days	N. Gales, Australian Antarctic Division
Right whale, Southern	Satellite	6	170 days	N. Gales, Simon Childerhouse Australian Antarctic Division

3.2 Analyses/development of techniques

(*1) *Dolphin Research Institute (DRI)* - Processing of identification images and subsequent analyses is continuing.

(*2) *James Cook University Dwarf Minke Whale Project (JCU)*. Analyses of the 2009 photo-identification data are still ongoing. Based on initial results, there were at least 9 within-season re-sightings and 12 between season re-sightings.

(*3) *Pacific Whale Foundation (PWF)*. Fluke identification photographs are first matched within-season and the best photograph of each individual is selected and then matched to the overall catalogue. The photographs and accompanying data enable us to produce sighting histories of known individuals. All images are then scored according to the Cascadia Research Collective's fluke image screening criteria (Calambokidis et al. 2008). Data is used to generate capture-mark-recapture (CMR) history profiles for post-yearling individual humpback whales observed at each of our field sites. Maximum likelihood estimates of annual survival, recapture and movement probabilities are derived from these CMR data sets using the Cormack-Jolly-Seber (CJS) modeling approach (Lebreton et al. 1992). These capture probabilities are used to derive population abundance estimates via a Manly-Parr type maximum likelihood estimator (Manly & Parr 1968; Seber 1982). Reproductive parameters (i.e. calving rates and intervals) were calculated based upon mark-recapture data (obtained via photo-ID) from eastern Australia from 1984 – 2007 and are currently being updated to include 2008 and 2009. Analyses of rates of interchange across several sites within eastern Australia, and between east Australia and west Latin America, and West Australia are currently underway.

(*4) *The Oceania Project (TOP)*. Trish and Wally Franklin as PhD Candidates at Southern Cross University have analysed photo-id data for fourteen-year period 1992-2005. The respective focus of their PhD work is the 'Social and ecological significance of Hervey Bay to the Area V humpback whales' and 'An investigation into genetic relatedness amongst humpback whales in Hervey Bay'. Emeritus Professor Peter Baverstock, Professor Peter Harrison, Director, Southern Cross University Whale Research Centre and Dr Phil Clapham, Adjunct Professor, Southern Cross University Whale Research Centre are supervising their PhD work (see refs).

4. TISSUE/BIOLOGICAL SAMPLES COLLECTED

4.1 Biopsy samples (summary only)

Species	Area/stock	Calendar year/ season - no. collected	Archived (Y/N)	No. analysed	Total holdings	Contact person/institute
Australian snubfin, Indo-pacific humpback, bottlenose dolphin	Western NT	2008	Y	?	?	Carol Palmer/NRETAS
Blue whale	Sthn Aust	11	Y	11	unsure	L. Möller/Flinders Uni
Bottlenose dolphin	Bunbury, WA	2009 (23)	Y	Not yet	91	Simon Allen, Claire Daniels, Lars Bejder/MUCRU
Bottlenose dolphin	Albany, WA	2009 (12)	Y	Not yet	Simon Allen	Simon Allen, Claire Daniels, Lars Bejder/MUCRU
Bottlenose dolphin	Mandurah, WA	2009 (11)	Y	Not yet	30	Simon Allen, Claire Daniels, Lars Bejder/MUCRU
Bottlenose dolphin	Augusta, WA	2009 (5)	Y	Not yet	12	Simon Allen, Claire Daniels, Lars Bejder/MUCRU
Bottlenose dolphin	Swan River, WA	2009 (4)	Y	Not yet	16	Hugh Finn/MUCRU
Bottlenose dolphin	Exmouth, WA	2009 (5)	Y	Not yet	5	Simon Allen & Lars Bejder/MUCRU
Bottlenose dolphin	Cockburn Sound, WA	2009 (4)	Y	Not yet	18	Hugh Finn/MUCRU

Bottlenose dolphin	Pilbara, WA	2009 (39)	Y	Not yet	91	Simon Allen/MUCRU
Humpback whale	Area V Hervey Bay	13	Y	846	1464	Wally Franklin/TOP
Humpback whale	Group V Breeding Stock E (ii)	pre-2009			7	M. Anderson/SCU; W. Franklin/SCU
Minke whale, Dwarf	Northern GBR	2	Y	0; sloughed skin	c.50	Dr A. Birtles/JCU.
Right whale, Southern	Warmambool /SE Australia	3	Y			Rob Harcourt/MQ
Sperm whale	Southwest Pacific	2009 - 3	N	3	3	Luciana Moller/Flinders University

4.2 Samples from directed catches (commercial, aboriginal and scientific permits) or bycatches

Species	Area/stock	Tissue type(s)*	No. collected	Archived (Y/N)	No. analysed	Contact person/institute
Common Dolphin, Short-beaked	SA	Genetic tissues, reproductives, stomach and intestines, toxic contaminants	8	Y	0	C. Kemper/SAM (*1)
Fin Whale	SA	Genetic tissues, reproductives, stomach and intestines, toxic contaminants	1	Y	0	C. Kemper/SAM (*1)
Indo-Pacific Bottlenose Dolphin	SA	Genetic tissues, reproductives, stomach and intestines, toxic contaminants	4	Y	0	C. Kemper/SAM (*1)

Notes

(*1) *South Australian Museum (SAM)*. The 'samples from directed catches' list includes: 1. Entanglement probable – for example, animals with net marks/injuries and/or that have had flippers or flukes removed, and full stomachs and sometimes food in the oesophagus, suggesting a sudden death; 2. Entangled in tuna farm anti-predator net; 3. Entanglement in other types of net or line; 4. Accidental or intentional injury by humans. Genetic tissues includes: blood, liver, kidney, muscle, skin; toxic contaminants include: liver, kidney, muscle, blubber. Complete sets of tissue samples were not collected from all animals because in some cases the state of decomposition made this inappropriate.

4.3 Samples from stranded animals

Species	Area/stock	Tissue type(s)*	No. collected	Archived (Y/N)	No. analysed	Contact person/institute
Australian snubfin dolphin	Sir Edward Pellew Islands, NT	skin	1	Y		Ray Chatto/NRETAS ; Guido Parra /SARTI SA
Blainville's beaked whale	Birdie Beach, NSW	Skull, skeleton, muscle tissue	1	Y		Sandy Ingleby/Australian Museum
Blue whale (washed up 08/04/09)	Bass Strait, VIC	Skin, blubber, eye, intestinal contents, muscle, bone fragment from injured area, sample from possible foetus	2	Y	1 skin sample analysis underway	David Donnelly/DRI. Samples sent to and stored at Melbourne Museum Catherine Attard/MU (skin sample analysis)
Blue whale, Pygmy	Rye Back Beach, VIC	Muscle	1	Y	0	Rory O'Brien/MV

Bottlenose dolphin, Indo-Pacific	Northern NSW	Skin, teeth	1	Y	0	Christine Fury/SCU
Bottlenose dolphin, Indo-pacific	SA	Genetic tissues, reproductives, stomach and intestines, toxic contaminants (*I)	9	Y	0	C. Kemper/SAM
Bottlenose dolphin	Moreton Bay, QLD	Skin	3			Janet Lanyon/UQ
Bottlenose dolphin	Portland Harbour, VIC	Muscle	1	Y	0	Rory O'Brien/MV
Bottlenose dolphin	Gippsland Lakes, Jubilee Head, VIC	Muscle	1	Y	0	Rory O'Brien/MV
Bottlenose dolphin (Stranding 22/02/09)	Coastal Victoria (Apollo Bay), VIC	Skin, blubber, kidney, liver, melon	2	Y	sample analysis underway	Kate Charlton-Robb/DRI /Monash
Bottlenose dolphin (01/07/09)	Coastal Victoria (Portland), VIC	Brain, liver, kidney, teeth, blubber, skin.	1	Y	sample analysis underway	Alissa Monk/DRI/Monash
Bottlenose dolphin (Stranded 16/08/09)	Gippsland Lakes (Jubilee Pt) , VIC	Skin, blubber, left pectoral	1	Y	sample analysis underway	Kate Charlton-Robb – DRI / Monash
Bottlenose dolphin (Stranding 2/10/09)	Gippsland Lakes (Bunga Arm), VIC	Skin, blubber	unknown	Not yet	will be analysed once collected	Kate Charlton-Robb – DRI / Monash (Samples currently with DSE Barnesdale).
Bottlenose dolphin	Bunbury, WA	Skin, blubber (10), teeth (6) organs: liver, kidneys, lung, heart, gonads (3) stomach (5)	10	Y	3 (PM) Histology & pathology complete Genetic analysis pending	Nahiid Stephens (pathology) Lars Bejder (genetics)/MU; Holly Smith (teeth histo)/MU
Bottlenose dolphin	Claisebrook Cove (Windan Brg) Swan River, WA	Pathology work undertaken	1			Doug Coughran/DEC
Bottlenose dolphin	Belvidere Conservation Park, WA	DNA	1			Doug Coughran/DEC
Bottlenose dolphin	SA	Genetic tissues, reproductives, stomach and intestines, toxic contaminants (*I)	1	Y	0	C. Kemper/SAM
Bottlenose dolphin, Common	SA	Genetic tissues, reproductives, stomach and intestines, toxic contaminants (*I)	1	Y	0	C. Kemper/SAM
Bottlenose dolphin (W2141)	Sunshine Coast, QLD	Necropsy conducted	1			Australian Wildlife Hospital
Bottlenose dolphin (W2171)	Moore Park, QLD	skin	1			Col Limpus/DERM,
Bottlenose dolphin	Bass Strait, TAS	Skin, blubber, teeth	Skin (2), blubber (2), teeth (2)	Y		R. Gales/DPIPWE
Bottlenose dolphin	NSW	Skull and frozen muscle tissue	1	Y		Sandy Ingleby/Australian Museum

Common dolphin, Short-beaked	SA	Genetic tissues, reproductives, stomach and intestines, toxic contaminants (*I)	8	Y	0	C. Kemper/SAM
Cuvier's beaked whale	Resolute Beach near Pittwater, NSW	Skulls	2	Y		Sandy Ingleby/Australian Museum
False killer whale (2228)	Sunshine Coast, QLD	Autopsy	1			Australian Wildlife Hospital
Ginko-toothed beaked whale	Wairo Beach, NSW	Skull, skeleton, frozen muscle tissue	1	Y		Sandy Ingleby/Australian Museum
Gray's beaked whale	TAS	Blubber, muscle, skin, stomach, dorsal fin	Blubber (4), muscle (2), skin (6), stomach (2), dorsal fin (2)	Y		R. Gales/DPIPWE
Hector's beaked whale	Walpole, WA	DNA	1			Doug Coughran/DEC
Humpback whale	WA	Skin	1			Doug Coughran/DEC
Humpback whale	SA	Some genetic issues (*I)	1	N	0	C. Kemper/SAM
Humpback whale	Gold Coast, QLD	Skin	1			Susan Bengton-Nash/UQ
Humpback whale (W2143)	Gold Coast, QLD	Blubber, baleen	1			David Blyde, Col Limpus/DERM,
Humpback whale (w2144)	Sunshine Coast, QLD	Blubber, skin, baleen	1			Col Limpus/DERM,
Humpback whale	TAS	Skin	2	Y		R. Gales/DPIPWE
Indo-Pacific humpback dolphin (W2191)	Sunshine Coast, QLD	Necropsy conducted	1			Australian Wildlife Hospital
Indo-pacific humpback dolphin (W2175)	Moore Park, QLD	Skin, organs, brain, stomach contents	1			Col Limpus/DERM,
Indo-pacific humpback dolphin W2177	Moreton Island, QLD	Skin, blubber	1			Col Limpus/DERM,
Indo-pacific humpback dolphin W2214	Moreton Bay, QLD	Skin, blubber	1			Col Limpus/DERM,
Pilot whale, Long-finned	Victoria, Potter's Hill Beach	Muscle	1	Y	0	Rory O'Brien/MV
Pilot whale, Long-finned	Victoria, Kilcunda Beach	Muscle	1	Y	0	Rory O'Brien/MV
Pilot whale, Long-finned	Williamson's Beach, VIC	Muscle	1	Y	0	Rory O'Brien/MV
Pilot whale, Long-finned	Express Point, VIC	Muscle	1	Y	0	Rory O'Brien/MV
Pilot whale, Long-finned	Dimmick's Beach, VIC	Muscle	1	Y	0	Rory O'Brien/MV
Pilot whale, Long-finned	Augusta, Hamelin Bay, WA	Skin, blubber	50 dead, 11 alive,	Y	0	Doug Coughran/DEC; Peter Spencer/MU
Pilot whale, Long-finned	WA	DNA sample				Doug Coughran

Pilot whale, Long-finned (believed to be wash ups from King Island, TAS mass stranding)	Bass Strait, VIC	Blubber, skin, teeth	3	Y	0	Collected by David Donnelly/ – DRI. Samples sent to and stored at Melbourne Museum
Pilot whale, Long-finned	Bass Strait, TAS	Skin, blubber, teeth, stomach	Skin (5), blubber (116), teeth (101), stomach (7)	Y		R. Gales/DPIPWE
Pilot whale, Short-finned (W2127)	Fraser Island, QLD	skin	1			Col Limpus/DERM
Pygmy killer whale	Racecourse Beach near Ulladulla, NSW		1	Y		Sandy Ingleby/Australian Museum
Pygmy right whale	SA	Genetic tissues, reproductives, stomach and intestines, toxic contaminants (*I)	1	Y	0	C. Kemper/SAM
Pygmy right whale	TAS	Blubber, skin, stomach, muscle	Blubber (1), skin (1), stomach (1), muscle (1)	Y		R. Gales/DPIPWE
Risso's dolphin	Leschenault Estuary, Bunbury, WA	Skin, blubber	1	Y	1	Doug Coughran/DEC; Peter Spencer/MU
Risso's dolphin	WA	DNA sample	1			Doug Coughran/DEC
Sperm whale	Nelson, VIC	Muscle	1	Y	0	Rory O'Brien/MV
Sperm Whale (W2138)	Moreton Bay, QLD	Skin, vertebrae	1			Steve van Dyck/QM Col Limpus/DERM,
Sperm whale	TAS	Jaws, skin, blubber, muscle, stomach	Jaws (37), skin (47), blubber (39), muscle (30), stomach (5)	Y		R. Gales/DPIPWE
Strap-toothed beaked whale	Warnbro Sound, WA	Skin	1			Doug Coughran/DEC
Striped dolphin	TAS	Skin, blubber, stomach	Skin (1), blubber (1), stomach (1)	Y		R. Gales/DPIPWE
Striped dolphin	NSW	Skull and frozen muscle tissue	1	Y		Sandy Ingleby/Australian Museum

Notes

(*I) *South Australian Museum (SAM)*. The 'samples from stranded animals' list includes: 1. Unknown - no information, too decomposed, incomplete specimen; 2. Diseased – e.g. significant parasites, heart disease, infection; 3. Live stranding - put back to sea and died, euthanased, died after stranding; 4. Other natural – e.g. choked on shark, starved, neonatal death, predator (killer whale, shark). Genetic tissues includes: blood, liver, kidney, muscle, skin; toxic contaminants include: liver, kidney, muscle, blubber. Complete sets of tissue samples were not collected from all animals because in some cases the state of decomposition made this inappropriate.

4.4 Analyses/development of techniques

Dolphin Research Institute (DRI). During 2009, no additional bottlenose dolphin biopsy samples were collected. The samples collected during 2006-2008 are in the final stages of being processed within the CESAR lab at Monash University, as a part of the PhD research conducted by Kate Charlton-Robb. DNA of these samples will be subject to mitochondrial DNA control region and cytochrome b region sequencing, along with genotyping at several microsatellite markers. New DNA regions are also being investigated.

The Oceania Project (TOP). DNA analysis of Sloughed Skin Samples being undertaken by Megan Anderson and Wally Franklin, at the Centre for Animal Conservation Genetics, Southern Cross University, under the Supervision of Professor Peter Baverstock. Analysis of total holdings will be completed and up to date by end of 2010.

5. POLLUTION STUDIES

Dolphin Research Institute (DRI). During 2008, Alissa Monk's Honours study found that mercury levels in the bottlenose dolphins that stranded along the Victorian coastline were three times higher than that of the live, resident dolphins of Port Phillip and the Gippsland Lakes. She suggested that these elevated contaminate levels are high enough to negatively affect the health of small cetaceans and gives strong evidence that the concentrations of mercury could compromise the health and survival of these genetically unique coastal dolphin populations. Ms Monk is continuing her research at Monash University for her PhD. She aims to continue to monitor contaminants levels; investigate trophic transfer of contaminants and investigate the health effects of contaminants on dolphins. Tissue and organs samples collected from bottlenose dolphins stranded along the Victorian coastline during 2009 will be part of this continuing research. Further details can be obtained by emailing alissa.monk@sci.monash.edu.au.

South Australian Museum (SAM). The project conducted by Honour's student at Flinders University (Lailie Maloney) on PCBs and bone structure of SA dolphins was inconclusive because of difficulties in 1) methods at a commercial laboratory and 2) variable PCB concentrations from different parts of the blubber sample of the same animals. No further analysis of samples has been undertaken. The time has come to promote the collection of toxic contaminant tissues more widely within Australia. It would be beneficial for the SA Museum and federal agencies to discuss the collection's uses and future.

The Oceania Project – Long-term Water Quality Monitoring Program, Hervey Bay Marine Park 1993-2008
During the 2006 humpback season The Oceania Project undertook the 14th year of Chlorophyll A sampling for a long-term habitat and water quality monitoring program, in the Whale Management and Monitoring Area of the Hervey Bay Marine Park. The program is being conducted in conjunction with Andrew Moss, Environment Division, Queensland Environment Protection Agency. Weekly triplicate Chlorophyll A samples were obtained from 6 structured geographical areas within the Hervey Bay Marine Park between August 5th and October 15th 2006. Outcomes of the first five years of monitoring (1993/1997) and the eleven years of monitoring (1993-2003) are published in: "Queensland Department of Environment & Heritage, Environmental Technical Report No 23: Hervey Bay Report - Chlorophyll-a Sampling by The Oceania Project, Andrew Moss and Julie Kocovski, ISSN 1037-4671 RE271, July 1998". "Long-term monitoring of chlorophyll-a in Hervey Bay, Queensland (1993-2003) by The Oceania Project"; See: <http://www.epa.qld.gov.au/publications?id=1771>

6. STATISTICS FOR LARGE CETACEANS

6.1 Corrections to earlier years' statistics for large whales

Nil.

6.2 Direct catches of large whales (commercial, aboriginal and scientific permits) for the calendar year 2009 or the season 2008/09

Nil

6.3 Anthropogenic mortality of large whales for the calendar year 2009 or the season 2008/09

6.3.1 Observed or reported ship strikes of large whales (including non-fatal events)

Type of vessel, e.g. High-speed Ferry (HSF), Large Cargo (LC), Military (M), Fishing Vessel (FV), Passenger Carrying Excursion (PC), Other (O). Fate: Indicate if the whale swam away (X), appeared seriously injured (I), killed (D). Example given.

Whale species	Sex	No.	Date	Location	Vessel type	Speed	Fate	How observed	Contact person/ institute and refs
Blue whale	F	1	08/4/09	Rye Ocean Beach.	U	U	U	Washed up	Dave Donnelly/DRI
Fin whale (*1)	F	1	2/10/09	34° 26' 80" S: 138°14' 50" E	U	U	D	SAM post mortem	C. Kemper/SAM
Humpback whale (*2)	U	1	28/7/09	-25°31'S, 154°06'E	FV	unknown	X,I	Skipper	Justine Johnston/AFMA
Humpback whale (*3)	U	1	2/09/09	Exmouth Gulf, Western Australia	FV	U	U	crew	Doug Coughran/DEC-WA
Humpback whale (*4)	U	1	26/10/09	Fremantle, WA	M	U	D	crew	Doug Coughran/DEC-WA
Right whale, Southern calf (*5)	U	1	12/09/09	Ulladulla NSW	PC	fast	D	Gross examination	Event #896 Geoff Ross/DECCW

(*1) Post mortem indicated possible vessel collision
(*2) Whale swam away bleeding heavily.
(*3) private fishing recreation vessel struck the whale
(*4) Struck by HMAS Perth. Observed floating with blood and no movement afterwards. Presumed dead
(*5) Severely impacted upper jaw and cranium

6.3.2 Fishery bycatch of large whales

Fate of whale (R = released alive, D = discarded dead or seriously injured, K = kept for sale or specimen), targeted fish species (e.g. tuna, herring, etc.). How observed: M = records collected as part of a planned cetacean monitoring programme, F = records collected by onboard fishery monitoring scheme, V = records collected by fishermen through vessel logbooks, A = anecdotal reports from any reliable source, with a further distinction of DA if the latter were documented (e.g. photos, rescue teams etc.). Internationally recognised standard gear description codes from FAO are used where possible.

Whale species	Sex	No.	Date	Location	Fate	Targeted fish species	Gear	How observed?	Source or contact
Blue whale	U	1	3 Feb 2009	3 nm SW of Petrified forest, Cape Bridgewater	Unknown	Southern Rock Lobster	Pot rope	A	Mandy Watson/DSE
Humpback whale	U	1	27/9/09	28°03.917'S; 153° 27.063	R	Shark Control Program	Net	V	QDPI&F
Humpback whale	U	1	1/9/09	28°09.518'S; 153° 31.993	R	Shark Control Program	Net	V	QDPI&F
Humpback whale	U	1	3/10/09	28°09.518'S; 153° 31.993	R	Shark Control Program	Net	V	QDPI&F
Humpback whale	U	1	8/10/09	28°02.353'S; 153° 26.692	R	Shark Control Program	Net	V	QDPI&F
Humpback whale	U	1	13/10/09	28°04.984'S; 153° 27.580	R	Shark Control Program	Net	V	QDPI&F
Humpback whale	U	1	7/11/09	28°02.353'S; 153° 26.692	R	Shark Control Program	Net	V	QDPI&F
Humpback whale	U	1	14/6/09	-34°13'S; 113°36'E	R	Tuna	LLD	V	Justine Johnston/AFMA
Humpback whale		1	13/ 07/2009	Flinders Bay, Augusta, WA	Alive	<i>Incidental</i>	MIS ¹	Entanglement - A	Doug Coughran/DEC
Humpback whale			25/ 06/ 2009	Grey - 10km west in 20 fathoms, WA	Dead	<i>Incidental</i>	Derelict Fishing Gear ²	Entanglement - A	Doug Coughran/DEC
Humpback whale			2/ 08/ 2009	North West Cape, Light house, WA	Alive	<i>Incidental</i>	MIS ³	Entanglement - A	Doug Coughran/DEC
Humpback whale			20/10/2009	Green Head, WA	Dead	<i>Incidental</i>	Derelict Fishing Gear ⁴	Entanglement - A	Doug Coughran/DEC
Humpback whale*	U	1	16 July 2009	Off Blowholes, Cape Bridgewater	R	Southern Rock Lobster	Pot rope	A - DA	Mandy Watson/DSE
Humpback whale	U	1	11/05/09	SouthWest Rocks, NSW	NRA	<i>U</i>	FPO	DA	Geoff Ross/DECCW (Event #978)

Humpback whale	U	1	16/06/09	Forster, NSW	NRA	U	MIS	A	Geoff Ross/DECCW (Event #979)
Humpback whale	U	1	23/06/09	Jervis Bay, NSW	NRA	U	LX	DA	Geoff Ross/DECCW (Event #981)
Humpback whale	U	1	1/07/09	Byron Coast, NSW	NRA	U	LX	DA	Geoff Ross/DECCW (Event #1030)
Humpback whale	U	1	10/07/09	Cape Solander, NSW	NRA	U	LX	DA	Geoff Ross/DECCW (Event #982)
Humpback whale	U	1	12/07/09	Pacific Palms, NSW	R	U	FIX	DA	Geoff Ross/DECCW (Event #747)
Humpback whale	U	1	19/07/09	Tweed Heads, NSW	NRA	U	FIX	A	Geoff Ross/DECCW (Event #990)
Humpback whale	U	1	4/08/09	Coffs Harbour, NSW	NRA	U	FIX	DA	Geoff Ross/DECCW (Event #751)
Humpback whale	U	1	26/08/09	Port Macquarie, NSW	R	U	LX	DA	Geoff Ross/DECCW (Event #818)
Humpback whale	U	1	26/08/09	Jervis Bay, NSW	NRA	U	NK	A	Geoff Ross/DECCW (Event #991)
Humpback whale	U	1	3/09/09	Solitary Islands, NSW	R	U	FIX	DA	Geoff Ross/DECCW (Event #975)
Humpback whale	U	1	12/09/09	Arrawarra Headland, NSW	R	U	FIX	DA	Geoff Ross/DECCW (Event #895)
Humpback whale	U	1	14/09/09	Brooms Head, NSW	NRA	U	NK	DA	Geoff Ross/DECCW (Event #898)
Humpback whale	U	1	15/09/09	North Solitary Islands, NSW	NRA	U	NK	DA	Geoff Ross/DECCW (Event #974)
Humpback whale	U	1	29/09/09	Urunga, NSW	NRA	U	NK	DA	Geoff Ross/DECCW (Event #992)
Humpback whale	U	1	30/09/09	Brooms Head, NSW	NRA	U	NK	DA	Geoff Ross/DECCW (Event #993)
Humpback whale	U	1	11/10/09	Cabbage Tree Island, NSW	R	U	FIX	DA	Geoff Ross/DECCW (Event #948)
Pilot whale, Short-finned	U	1	14/10/09	-18°71'S; 154°95'E	R	Tuna	LLD	V	Justine Johnston/ AFMA
Pilot whale, Short-finned	U	1	1/12/09	-20°10'S; 154°63'E	R	Tuna	LLD	V	Justine Johnston/ AFMA
Pilot whale, Short-finned	U	1	9/12/09	-18°23'S; 155°85'E	R	Tuna	LLD	V	Justine Johnston/ AFMA
Right whale, Southern	U	1	24 July 2009	Marlo, East Gippsland	R **	Southern Rock Lobster	Rot rope		Dave Burton/Parks Victoria
Unidentified beaked whale	U	1	13/1/09	-28°2'S; 156°21'E	R	Tuna	LLD	V	Justine Johnston/ AFMA
Unidentified toothed whale	U	1	8/9/09	-27°46'S; 155°41'E	R	Tuna	LLD	V	Justine Johnston/ AFMA

7. STATISTICS FOR SMALL CETACEANS

7.1 Corrections to earlier years' statistics for small cetaceans

In the Australian Progress Report for IWC 61, the first line under item 4.3 *Samples from Stranded Animals* referred to samples taken from a stranded Andrew's beaked whale at Killarney, Victoria. This animal has now been identified by the Museum of Victoria as Blainville's beaked whale.

7.2 Direct catches of small cetaceans for the calendar year 2009 or the season 2008/09

N/A

7.3 Anthropogenic mortality of small cetaceans for the calendar year 2009 or the season 2008/09 (*I)

7.3.1 Observed or reported ship strikes of small cetaceans (including non fatal events)

Species	Sex	No.	Date	Location	Vessel type	Speed	Fate	How observed	Contact person/ institute and refs
Bottlenose dolphin	F	1	23 Jan 2010	Bunbury, WA	U	U	D	On beach	Nahiid Stephens/MU
Bottlenose dolphin, Indo-Pacific	M	1	25/8/09	8 km NNW Port Adelaide (PO) 34° 46' 28" S: 138° 29' 10" E	U	U	D	SAM post mortem (possible boat strike)	C. Kemper/SAM
Und. Tursiops spp	U	1	27/12/09	Old bar beach, NSW	U	U	D	Gross examination	Geoff Ross/DECCW (Event#1000)

7.3.2 Fishery bycatch of small cetaceans

Species	Ratio of male to female (if known)	No.	No. extrapolated to fleet total (point estimate)	Range, CI or CV	Date of bycatch	Location (description or lat/long)	FAO statistical area (if known)	FAO area	Fate	Targeted species	Gear	How observed?	Source or contact
Bottlenose dolphin		1				Casuarina point, Bunbury, Western Australia			Dead	<i>Incidental</i>	Monofilament line	Stranded (subsequent PM)	Nahiid Stephens & Lars Bejder/MU
Bottlenose dolphin		1			5/6/09 & 7/6/09	25.89168;153.09798 (5/6/09) & 25.89637;153.10045	V		R	Shark Control Program	Drum	V	QDPI&F
Bottlenose dolphin.		1				Burswood, Swan River, Western Australia			Dead	<i>Incidental</i>		Entanglement - A	Doug Coughran/DEC
Bottlenose dolphin	M	1	12/10/09	Harbord beach	D	<i>Shark</i>	NSC	Necrosy	Event # 963	Bottlenose dolphin	M	1	12/10/09
Bottlenose dolphin	M	1	2/02/09	Crookhaven River, NSW	U	<i>Unknown</i>	NK	A	Event # 610	Bottlenose dolphin	M	1	2/02/09
Bottlenose dolphin, Indo-Pacific	0:1	1	N/A	N/A	9/1/09	1 km WNW Point Turton, 34° 55' 47" S 137° 20' 27" E	N/A	N/A	D	<i>Bather Protection Nets</i>	NSC	Known Entanglement, SAM post mortem	C. Kemper/SAM
Bottlenose dolphin, Indo-Pacific	1:0	1	N/A	N/A	21/10/09	Fitzgerald Bay, Point Lowly	N/A	N/A	D	<i>Unknown</i>	NK	Probable Entanglement, SAM post mortem	C. Kemper/SAM
Common dolphin, Short-beaked		1			18/10/09	27°58.406'S; 153° 26.161E	V		D	Shark Control Program	Net	V	QDPI&F

Common dolphin, Short-beaked	F	1			23/08/09	27°58.406'S; 153°26.161E	V		D	Shark Control Program	Net	V	QDPI&F
Common dolphin, Short-beaked		1			25/09/09	27°04.984'S; 153°27.580E	V		D	Shark Control Program	Net	V	QDPI&F
Common dolphin, Short-beaked	M	1			10/06/09	28°08.067'S; 153°30.602E	V		D	Shark Control Program	Net	V	QDPI&F
Common dolphin, Short-beaked	F	1			9/4/09	28°09.498'S; 153°32.284E	V		D	Shark Control Program	Net	V	QDPI&F
Common dolphin, Short-beaked		1			21/6/09	25.8942;153.0970	V		D	Shark Control Program	Net	V	QDPI&F
Common dolphin, Short-beaked		1			8/5/09	25.8914;153.09677	V		D	Shark Control Program	Net	V	QDPI&F
Common dolphin, Short-beaked		1			23/2/09	27.06415;153.20860	V		R	Shark Control Program	Drum	V	QDPI&F
Common dolphin, Short-beaked		1			22/4/09	26.37250;153.10685	V		D	Shark Control Program	Net	V	QDPI&F
Common dolphin, Short-beaked		1			21/4/09	26.75111;153.14078	V		D	Shark Control Program	Net	V	QDPI&F
Common dolphin, Short-beaked	2:3	5	N/A	N/A	11/4/09 (3) 2009? (2)	Lower Spencer Gulf	N/A	N/A	D	SA Sardine Fishery	PS1/ PS2	F, SAM post mortem	C. Kemper/SAM D. Hamer, SARDI
Common dolphin, Short-beaked	2:1	3	N/A	N/A	16/1/09, 15/2/09, 27/10/09,	Fitzgerald Bay, Point Lowly	N/A	N/A	D	Unknown	NK	Probable entanglement, SAM post mortem	C. Kemper/SAM
Common dolphin	U	1	N/A	N/A	05/05/09	-33.78333'S; 134.03333'E	unknown	unknown	D	shark	GNS	V	Justine Johnston/ AFMA
Common dolphin	U	1	N/A	N/A	08/05/09	-33.1'S; 134.16667'E	unknown	unknown	D	shark	GNS	V	Justine Johnston/ AFMA
Common dolphin	U	1	N/A	N/A	30/05/09	-10.95'S; 131.08333'E	unknown	unknown	D	Prawns	PTB	V	Justine Johnston/ AFMA
Common dolphin	M	1	4/11/09	Wollongong beach	D	Shark	NSC	Necropsy	Event # 973	Common dolphin	M	1	4/11/09
Pantropical spotted dolphin	1xF, 1xM	2			23/07/09	28°02.353'S; 153°26.692			D	Shark Control Program	Net	V	QDPI&F
Pantropical spotted dolphin	M	1			5/12/09	27°58.406'S; 153°26.161E			D	Shark Control Program	Net	V	QDPI&F
Spinner dolphin, Long-beaked		1			30/6/09	265.2286;153.0571	V		D	Shark Control Program	Net	V	QDPI&F
Spinner dolphin, Long-beaked	M	1			13/12/09	28°08.067'S; 153°30.602E	V		D	Shark Control Program	Net	V	QDPI&F

Unid dolphin	N/A	1	N/A	N/A	28/3/09	Point Turton swimming pool, 34° 55' S, 137° 24' E	N/A	N/A	R	Bather Protection Nets	NSC	Known Entanglement, A	C. Kemper/SAM
Unid dolphin	N/A	1	N/A	N/A	3/10/09	Whyalla marina	N/A	N/A	R	Unknown	NK	Known Entanglement, A	C. Kemper/SAM
Unid dolphin	N/A	1	N/A	N/A	7/8/09	2.5 km WSW Aldinga Beach (PO), 34° 17'22"S, 138° 26' 40" E	N/A	N/A	D	Unknown	NK*	Probable Entanglement, No post mortem, unconfirmed	C. Kemper/SAM
Unid dolphin		1			28/05/09	23.12996S; 150.75292			R	Shark Control Program	Drum	V	QDPI&F

*NOTES: (*1) There was one reported incident of an illegal killing (many shotgun pellets were found) of a female indo-pacific bottlenose dolphin in the SA region. Contact C. Kemper (SAM) for details.*

8. STRANDINGS

Queensland

The Queensland marine wildlife stranding and mortality database ("StrandNet") summarises all records of sick, injured or dead marine wildlife reported to EPA.

Most records of individual strandings are supplied by EPA and Great Barrier Reef Marine Park Authority (GBRMPA) staff, including those reported via the statewide stranding hotline 1300 130 372. Other records are received directly via members of the public and organisations such as Sea World and Underwater World.

Species	No. strandings	No. post mortems	Contact person(s)/ Institute(s)	Contact email address(es)
Bottlenose dolphin	12	2	Col Limpus, DERM Michelle Boyle, DERM	Col.limpus@derm.qld.gov.au; michelle.boyle@derm.qld.gov.au
Common dolphin	10	0	Col Limpus, DERM Michelle Boyle, DERM	Col.limpus@derm.qld.gov.au; michelle.boyle@derm.qld.gov.au
False killer whale	1	1	Col Limpus, DERM Michelle Boyle, DERM	Col.limpus@derm.qld.gov.au; michelle.boyle@derm.qld.gov.au
Humpback whale	17	0	Col Limpus, DERM Michelle Boyle, DERM	Col.limpus@derm.qld.gov.au; michelle.boyle@derm.qld.gov.au
Indo-Pacific humpback dolphin	7	2	Col Limpus, DERM Michelle Boyle, DERM	Col.limpus@derm.qld.gov.au; michelle.boyle@derm.qld.gov.au
Melon-headed whale	2	0	Col Limpus, DERM Michelle Boyle, DERM	Col.limpus@derm.qld.gov.au; michelle.boyle@derm.qld.gov.au
Minke whale	2	0	Col Limpus, DERM Michelle Boyle, DERM	Col.limpus@derm.qld.gov.au; michelle.boyle@derm.qld.gov.au
Pantropical spotted dolphin	3	3	Col Limpus, DERM Michelle Boyle, DERM	Col.limpus@derm.qld.gov.au; michelle.boyle@derm.qld.gov.au
Pilot whale, Short-finned	2	0	Col Limpus, DERM Michelle Boyle, DERM	Col.limpus@derm.qld.gov.au; michelle.boyle@derm.qld.gov.au
Sperm whale	2	0	Col Limpus, DERM Michelle Boyle, DERM	Col.limpus@derm.qld.gov.au; michelle.boyle@derm.qld.gov.au
Spinner dolphin, Long-snouted	2	0	Col Limpus, DERM Michelle Boyle, DERM	Col.limpus@derm.qld.gov.au; michelle.boyle@derm.qld.gov.au
Unid dolphin – (unidentified sp)	5	0	Col Limpus, DERM Michelle Boyle, DERM	Col.limpus@derm.qld.gov.au; michelle.boyle@derm.qld.gov.au

Victoria

DRI / MONASH UNI - Strandings along the Victorian coastline were attended by members of the Dolphin Research Institute (DRI), Monash University and members representing the Victorian Strandings Network, Zoos

Victoria and the Melbourne Museum. Specimens (skulls) collected will be incorporated into the Melbourne Museum IWC report.

DSE - Reports usually come in via opportunistic reports from local land manager, council or member of the public, either directly to DSE or to the Dolphin Research Institute who then reports it to DSE. A Whale and Dolphin Emergency Hotline (1300 136 017) was established in October 2009, through which reports will now be handled.

Species	No. strandings	No. post mortems	Contact person(s)/ Institute(s)	Contact email address(es)
Blue Whale	1	0	David Donnelly/DRI	ddonnelly6@yahoo.com.au research@dolphinresearch.org.au
Blue whale, Pygmy (or sub adult Blue Whale)**	1	0	Kirsty Greengrass/DSE	kirsty.greengrass@dse.vic.gov.au
Monash Bottlenose dolphin	4	2 (Portland/Apollo Bay), conducted by Padraig Duignan Melbourne University	Kate Charlton Robb (Apollo Bay stranding)/Monash Alissa Monk (Portland stranding)/Monash	kate.charlton@sci.monash.edu.au alissa.monk@sci.monash.edu.au
Bottlenose dolphin	5	3 (1 full post mortem, 2 samples taken)	Kirsty Greengrass/DSE	kirsty.greengrass@dse.vic.gov.au
Pilot whale	1 (King Island wash ups after storm)	0	David Donnelly/DRI	ddonnelly6@yahoo.com.au research@dolphinresearch.org.au
Pilot whale, Long-finned *	8	3 (samples taken)	Kirsty Greengrass/DSE	kirsty.greengrass@dse.vic.gov.au
Sperm Whale	1	1 (samples taken)	Kirsty Greengrass/DSE	kirsty.greengrass@dse.vic.gov.au
Unknown (unable to identify due to decomposition)	4	0	Kirsty Greengrass/DSE	kirsty.greengrass@dse.vic.gov.au

Western Australia

Murdoch University and DEC worked together to respond to reported strandings. In most instances strandings were of dead bottlenose dolphins 10 of 11 strandings. One stranding of 2 live individual bottlenose dolphins (mother & calf) were stranded and successfully returned to the water in the Preston River 22 October 2009 by MUCRU staff. In all cases practicable samples were collected including full morphometric measurements and genetic samples. For 3 of the 10 bottlenose dolphin strandings post mortems were conducted by veterinarians at Murdoch University. There were more strandings of bottlenose dolphins than observed in previous 2 years (2007, 2008) by Murdoch University Cetacean Research Unit in the Bunbury area.

MUCRU assisted with strandings of other species where required, Risso's dolphin *Grampus griseus* 15 March 2009 and the mass stranding of long finned pilot whales *Globicephala melas* at Hamelin Bay 23 March 2009. MUCRU collected tissue samples on behalf of DEC at the mass pilot whale stranding. A single stranding of a dead striped dolphin *Stenella coeruleoalba* was handled by the local Bunbury Shire Council 14 June 2009. DEC has a more comprehensive list of strandings for multiple species of the area. This is held by head office in Perth and data custodian and contact person is Doug Coughran.

Species	No. strandings	No. post mortems	Contact person(s)/ Institute(s)	Contact email address(es)
Bottlenose dolphin	10 dead (2 live) 12 total	3	Nahiid Stephens; Lars Bejder; Holly Smith/MUCRU	n.stephens@murdoch.edu.au l.bejder@murdoch.edu.au h.smith@murdoch.edu.au c.holyoake@murdoch.edu.au
Bottlenose dolphin	16 (6 of which died)	0	Doug Coughran/DEC	Douglas.coughran@dec.gov.au
Dwarf Sperm Whale	1		Doug Coughran/DEC	Douglas.coughran@dec.gov.au
Hector's beaked whale	1	0	Doug Coughran/DEC	Douglas.coughran@dec.gov.au
Humpback Whale	12 (10 dead)		Doug Coughran/DEC	Douglas.coughran@dec.gov.au
Pilot Whale, Long-finned	87 (7 died)		Doug Coughran/DEC	Douglas.coughran@dec.gov.au
Pygmy Right Whale	1		Doug Coughran/DEC	Douglas.coughran@dec.gov.au

Risso's dolphin	1 (died)		Doug Coughran/DEC	Douglas.coughran@dec.gov.au
Strap-toothed beaked whale	5 (2)	0	Doug Coughran/DEC	Douglas.coughran@dec.gov.au
Striped dolphin	1	0	Bunbury Shire Council	cspencer@bunbury.wa.gov.au

New South Wales

The stranding reporting process within NSW was updated in 2009 with an improved reporting process for Government and NGO. The State managed data base provides relatively robust datasets. Improved access to necropsy procedures has resulted in greater numbers of necropsies undertaken.

Species	No. strandings	No. post mortems	Contact person(s)/ Institute(s)	Contact email address(es)
Andrews' beaked whale	1	0	Event #719	geoff.ross@environment.nsw.gov.au
Blainville's beaked whale	2	1	Event #624 & 931	geoff.ross@environment.nsw.gov.au
Bottlenose dolphin	11	2	Event #596; 656;714;705;704;709;718;801;867; 933& 956	geoff.ross@environment.nsw.gov.au
Bottlenose dolphin, Indo-pacific	2	1	Event #559 & 951	geoff.ross@environment.nsw.gov.au
Bottlenose dolphin, Common	1	0	Event #976	geoff.ross@environment.nsw.gov.au
Bryde's whale	1	0	Event # 960	geoff.ross@environment.nsw.gov.au
Common dolphin, Short beaked	4	1	Event # 953; 957; 977 & 996	geoff.ross@environment.nsw.gov.au
Cuvier's beaked whale	1	1	Event #932	geoff.ross@environment.nsw.gov.au
Dwarf sperm whale	1	0	Event #712	geoff.ross@environment.nsw.gov.au
False killer whale	2	0	Event #732 & 864	geoff.ross@environment.nsw.gov.au
Humpback whale	6	0	Event #797; 930; 946; 961; 965; & 995	geoff.ross@environment.nsw.gov.au
Minke whale	1	0	Event # 729	geoff.ross@environment.nsw.gov.au
Pilot whale, Short-finned	1	1	Event # 954	geoff.ross@environment.nsw.gov.au
Pygmy killer whale	2	1	Event #720 & 998	geoff.ross@environment.nsw.gov.au
Pygmy sperm whale	1	0	Event #896	geoff.ross@environment.nsw.gov.au

Northern Territory

Species	No. strandings	No. post mortems	Contact person(s)/ Institute(s)	Contact email address(es)
Bottlenose dolphin	1	0	Ray Chatto, NT Parks and Wildlife	ray.chatto@nt.gov.au
Humpback whale (section of blubber and bone)	1	0	Ray Chatto, NT Parks and Wildlife	ray.chatto@nt.gov.au
Indo-pacific humpback dolphin	1	0	Ray Chatto, NT Parks and Wildlife	ray.chatto@nt.gov.au
Snubfin dolphin	1	0	Ray Chatto, NT Parks and Wildlife	ray.chatto@nt.gov.au

South Australia

A network for DEH SA, PIRSA and community members report to SAM, even when carcasses are not collected. The contact person for this data is C. Kemper, SAM.

Species	No. strandings	No. post mortems	Contact person(s)/ Institute(s)	Contact email address(es)
Bottlenose Dolphin	7	1	C. Kemper/SAM	Catherine.Kemper@samuseum.gov.au
Bottlenose Dolphin, Indo-Pacific	15	13	C. Kemper/SAM	Catherine.Kemper@samuseum.gov.au
Bottlenose Dolphin, Common	1	1	C. Kemper/SAM	Catherine.Kemper@samuseum.gov.au
Common Dolphin, Short-beaked	21	16	C. Kemper/SAM	Catherine.Kemper@samuseum.gov.au
False Killer Whale	1	0	C. Kemper/SAM	Catherine.Kemper@samuseum.gov.au
Fin whale	1	1	C. Kemper/SAM	Catherine.Kemper@samuseum.gov.au
Humpback whale	1	0	C. Kemper/SAM	Catherine.Kemper@samuseum.gov.au
Pygmy right whale	1	1	C. Kemper/SAM	Catherine.Kemper@samuseum.gov.au

Sperm Whale	3	0	C. Kemper/SAM	Catherine.Kemper@samuseum.gov.au
Unid Dolphin	12	0	C. Kemper/SAM	Catherine.Kemper@samuseum.gov.au

Tasmania

In Tasmania DPIPWE has a 24hr / 7days week marine mammal hotline number (0427WHALES) for the public to report strandings and sightings of cetaceans. Strandings are joint managed by the Tasmanian PWS (incident control and operational) and DPIPWE (specialist advice, animal management, rescue and research). The agencies are responsible for strandings throughout Tasmanian, covering 4,882 kms of coastline. For more information please contact Rosemary Gales, DPIPWE.

*Numbers for the purpose of post mortem include some or all of the following: morphometric measurement, sampling (DNA, teeth, blubber), stomach contents and/or ascertaining reproductive status.

Species	No. Strandings (total animals)	No. post mortems*	Contact person(s)/ Institute(s)	Contact email address(es)
Bottlenose dolphin	2 (8)	2	R.Gales / DPIPWE	Rosemary.Gales@dpipwe.tas.gov.au
Common dolphin, Short beaked	2 (3)	0	R.Gales / DPIPWE	Rosemary.Gales@dpipwe.tas.gov.au
Gray's Beaked Whale	3 (2)	2	R.Gales / DPIPWE	Rosemary.Gales@dpipwe.tas.gov.au
Humpback Whale	2 (2)	0	R.Gales / DPIPWE	Rosemary.Gales@dpipwe.tas.gov.au
Pilot whale, Long-finned	2 (170)	117	R.Gales / DPIPWE	Rosemary.Gales@dpipwe.tas.gov.au
Pygmy right Whale	1 (1)	1	R.Gales / DPIPWE	Rosemary.Gales@dpipwe.tas.gov.au
Sperm whale	2 (50)	50	R.Gales / DPIPWE	Rosemary.Gales@dpipwe.tas.gov.au
Striped Dolphin	1 (?)	1	R.Gales / DPIPWE	Rosemary.Gales@dpipwe.tas.gov.au

9. OTHER STUDIES AND ANALYSES-

Diet and Foraging Ecology of Bottlenose Dolphins (Dolphin Research Institute and Monash University).

Stable isotope analysis of teeth was completed to determine the foraging ecology and diet of two bottlenose dolphin species (common bottlenose dolphin and the southern Australian bottlenose dolphin) in Victoria. Results showed that the two species had distinctly different stable isotope signatures suggesting that the two species may be foraging in different areas and on different prey. Additionally, comparisons of the two populations of southern Australian bottlenose dolphins (one found in the Gippsland Lakes and the other in Port Phillip) suggest that the Port Phillip population may be feeding at a higher trophic level than the Gippsland Lakes dolphins, a theory which is supported by fish isotope data from the area as well as differences in the patterns of tooth wear and the active foraging strategies of the two populations.

Comparisons between male and female dolphins revealed no differences in stable isotope signatures for male and female common bottlenose dolphins. However, statistically significant differences were observed between male and female southern Australian bottlenose dolphins. The females displayed a higher $\delta^{13}\text{C}$ value in both the Gippsland Lakes and Port Phillip populations, suggesting that the males and females may have different diets or forage in different areas. The lower $\delta^{13}\text{C}$ of the males is more consistent with that of the common bottlenose dolphins found offshore and implies that the males may spend greater periods feeding in offshore waters than the females that may rely solely on coastal prey items.

When placed over basal resources available in Port Phillip, it appears as though the southern Australian bottlenose dolphin population in the bay may be relying on seagrass beds and phytoplankton based food chains. Seagrass beds appear to be particularly important for the female dolphins which are believed to be resident to the bay. This presents a potential problem for the local dolphin population as sea grass beds are currently under decline in Port Phillip.

Study completed as Honours research project by Kylie Owens, Monash University, 2008. Further details can be obtained by emailing research@dolphinresearch.org.au

Taxonomy of Tursiops spp. in Australasia (Kemper, SA Museum, Maria Jedensjo and associates). An Australian Marine Mammal Centre grant application has been lodged to study the taxonomy of bottlenose dolphins from around Australia. This is a PhD project to be undertaken by Maria Jedensjo with the primary supervisor being Michael Krutzen (University of Zurich) and the secondary supervisor Catherine Kemper. The project will combine morphological and genetic characters, and will compare with type specimens for both *T. truncatus* and *T. aduncus*. There are plans to include samples from New Zealand in the near future.

Cause/circumstance of death of SA cetaceans (Kemper, Tomo SAM, Adelaide Mount Lofty NRM). The Dolphin Trauma Group continues to study dead dolphins from Gulf St Vincent Bioregion and has been awarded funding as part of a Caring for Your Country grant to study marine debris in Gulf St Vincent. The project involves assessing recent strandings of marine mammals (about 20 since the project began in April 2009) and collating/archiving data and specimens collected by the SA Museum over the last 20 years. Life history data will be combined with pathology results provided by Ikuko Tomo to give an overall picture of diseases and circumstance of death of South Australian cetaceans.

Assessment of mortality of dolphins in North Spencer Gulf (Kemper, Warhurst and Parra (Flinders University)). An Honours student (Kathryn Warhurst) will soon begin a project relating to the problem of the high number of dolphin mortalities and interactions with fisheries and finfish aquaculture in North Spencer Gulf. The details of the research have not yet been finalized but are likely to include carcass evaluations and determining hotspots of interaction. There were four dolphin deaths in the Point Lowly, Fitzgerald Bay area during 2009 and several of these were suspected entanglements. It is likely that these dolphins died in the kingfish aquaculture pens. The project will aim to determine hotspots of mortality and advise government on actions needed.

Lung nematode epidemic in common dolphins (Tomo, Kemper SAM). A publication is in press on this research (see below). Another publication is anticipated on the details of the pathology of the infections. Although there are a few more cases being documented during necropsies, the outbreak of lung nematode infections subsided at the beginning of 2007.

Investigating dolphin mortality in the South Australian Sardine Fishery (Hamer, Tomo, Kemper and Gibbs, SARDI). This project has not advanced much further due to lack of funding. Teeth are being prepared for ageing at the SA Museum.

National Centre for Aging Marine Mammals (SA Museum). The results of Elena Trentin's study of age at sexual maturity male in *T. aduncus* are being prepared for publication. It appears that the regression of male testis function has not been previously described in bottlenose dolphins from Australia or elsewhere. A presentation was made to the Australian Mammal Society meeting in July 2009. Another international student (Mauro Talamonti, Istituto di Biologia e Genetica Università Politecnica delle Marche, Italy) has joined the Museum to conduct a study of female sexual maturity in *T. aduncus* from South Australia. In addition to the cetacean studies, there has been some use of the lab for pinniped ageing (e.g. USA fur seals by Jane McKenzie).

Oceanographic influences on the distribution of *Caperea marginata* (Kemper, Middleton and Van Ruth). This project has progressed to near-final manuscript stage.

Oceanographic influences on cetacean strandings in South Australia (Segawa, Kemper, Seuront, Flinders University). Tomoyo Segawa has completed her Honours degree on temporal trends in the stranding record for South Australia. The study focused on 856 events recorded between 1990 and 2008. The total number of stranding events increased (decreased) during La Nina (El Nino) years. In preparing data for the project, all outstanding non-specimen stranding records were entered into the KE Emu collections database.

South Australian cetacean sightings database (SA Museum). The South Australian Museum has been the primary repository for cetacean sighting records and in recent years has done this in partnership with the South Australian Whale Centre at Victor Harbour. There were many more southern right whale sightings in South Australia during 2009 and it has not been possible to enter all these into the Museum's database. Although there is some potential for a small amount of support from the Whale Centre, it is vital that the Museum enters into discussions with State and Commonwealth Governments as to how to fund the database and provide data for Australian and international distribution.

Dwarf minke whale biology (JCU). A PhD study by Ms. S. Soltzick (2006-2010; supervised by Dr Alastair Birtles & Prof Helene Marsh, JCU) is investigating dwarf minke whale population structure, site fidelity and social structure in the northern GBR using photo-identification and underwater videogrammetry.

Dwarf minke whale behaviour (JCU). A PhD study by Mr. A. Mangott (2005-2010; supervised by Dr Alastair Birtles, Prof Helene Marsh, JCU and A/Prof Peter Valentine Associate) is investigating behaviours of dwarf minke whale associated with human interactions in the northern GBR.

Whalewatching: swim-with-dwarf minke whales tourism (JCU). A PhD study by Mr. M. Curnock (2005-2010; supervised by Dr Alastair Birtles & A/Prof Peter Valentine) is investigating mechanisms for assessing the sustainability of the swim-with-dwarf minke whales tourism industry in the northern GBR.

Summary of cetacean permits current in 2009 (GBRMPA). The maximum allowable number of 9 permits remains current (first issued in 2003) for tourist programs that include the swim-with-dwarf minke whale activity in the Ribbon Reef Sector and Offshore Port Douglas Sector of the Marine Park. In 2009:

- The total number of dedicated tourism whale watching activities allowed to operate in the Far Northern Management Area of the Marine Park was 24.
- The total number of dedicated tourism whale watching activities allowed to operate in the Cairns Management Area of the Marine Park was 28.
- The total number of dedicated tourism whale watching activities allowed to operate in the Cairns Area of the Marine Park was 7.
- The total number of dedicated tourism whale watching activities allowed to operate in the Townsville/Whitsundays Management Area of the Marine Park was 64.
- The total number of dedicated tourism whale watching activities allowed to operate in the Whitsundays Area of the Marine Park was 32.
- No permits were issued for tourist programs that included the activity of dolphin watching.
- Four permits were current for the conduct of a research program involving whales or dolphins:
 - The study of dwarf minke whales (*Balaenoptera acutorostrata*) in the northern Great Barrier Reef and opportunistic observation of other cetacean species. Permit expires 31/07/2010.
 - Conservation genetics of three species of cetaceans: Australian snubfin, Indo-Pacific humpback dolphins and Bottlenose dolphins in northeast Queensland waters. Permit expires 28/02/2012.
 - The acoustic and surface behaviour of coastal dolphins (Indo-Pacific humpback and Australian Snubfin dolphin) in Queensland. Permit expires 31/07/2010.
 - Photographic identification of humpback whales (*Megaptera novaeangliae*) in the Whitsundays Island Region, Port Douglas and Cooktown. Permit expires 01/07/2011.

Distribution and population structure of Australian humpback whales (*Megaptera novaeangliae*) (N. Schmitt, Australian Antarctic Division). Using a combination of mitochondrial and microsatellite markers, the project aims to:

- Measure the degree of gene flow between Eastern and Western Australia.
- Determine the allocation of humpback breeding stocks to Antarctic feeding area V using mtDNA haplotypes and mixed stock analysis.
- Genetically assign humpback whale individuals from Antarctic feeding area V to low-latitude breeding grounds using genotype matching.
- Determine the population structure of humpback whales in the Antarctic feeding grounds between 150 deg East and 150 deg West.
- Estimate the minimum historical population size of stock D based on the diversity of mtDNA haplotypes, developed from an existing mathematical model.

10. LITERATURE CITED

- Bannister, J.L. 2010. Southern right whale aerial survey, southern Australian coast, August 2009. Final Report on work funded by the Island Foundation, Massachusetts, USA. 17pp. Unpublished, available from J Bannister, bannisj@bigpond.com.
- Hedley, S., Bravington, M., Gales, N., Kelly, N. and Peel, D. (2007a). Aerial survey for minke whales off eastern Antarctica. Paper SC/59/IA2 presented to the IWC Scientific Committee (unpublished).
- Kelly, N., Peel, D., Pike, D., Bravington, M.V. and Gales, N. (2008). Aerial survey of minke whales off East Antarctica: report on 2007/08 test survey and future plans. Paper SC/60/IA4 presented to the IWC Scientific Committee (unpublished).
- Kelly, N., Peel, D., Pike, D., Bravington, M.V. and Gales, N. (2009). An aerial survey for Antarctic minke whales in sea ice off East Antarctica: A pilot study. Paper SC/61/IA3 presented to the IWC Scientific Committee (unpublished).
- Kelly, N., Peel, D., Bravington, M.V. and Gales, N. (2009b). A description of killer whales (*Orcinus orca*) observed in Vincennes Bay, Eastern Antarctica. Paper SC/61/SM10 presented to the IWC Scientific Committee (unpublished).
- Oosterman, A., Whicker, M. and Garbett, P. 2010. A review of the 2009 Norfolk Island Whale Survey. 6 pp. [Available from adrianoosterman@hotmail.com].

11. PUBLICATIONS

11.1 Published or 'In Press' papers only

- Anderson, M.J., Hinten, G., Paton, D., Baverstock, P.R., 2001. A model for the integration of microsatellite genotyping with photographic identification of humpback whales. *Memoirs of the Queensland Museum* 47(2): 451-457.
- Bilgmann, K., Moller, L.M., Harcourt, R. G., Gales, R., and L. Beheregaray. 2009. Reply to "Clarifying the interpretations of Hamer et al. (2009) by Bilgmann et al. (2008)". *Animal Conservation* doi: 10.1111/j.1469-1795.00270.x
- Byard, R.W., Tomo, I., Kemper, C.M., Gibbs, S.E., Bossley, M., Machado, A. and Hill, M. 2010. Unusual causes of fatal upper aerodigestive tract obstruction in wild bottlenose dolphins (*Tursiops aduncus*). *Forensic Science Medical Pathology* [doi 10.1007/s12024-010-9143-3].
- Elphinstone M.S., Hinten G.N., Anderson M.J. and Nock C.J. 2003. An inexpensive and high-throughput procedure to extract and purify total genomic DNA for population studies. *Molecular Ecology Notes - Technical Note* 3:317
- Forestell, P.H., Kaufman, G.D., Mallo, A. and Lehman, S. (In press). Calving Rates and Intervals for East Australia Female Humpback Whales, based on Individual Photo-Identifications: 1984 – 2007. IWC Special Reports: Comprehensive Assessment of Southern Hemisphere Humpback Whales.

- Forestell, P.H., Kaufman, G.D. and Chaloupka, M. (In press). Abundance of Humpback Whales in Hervey Bay, Australia, Based on CMR Profiles, 1998 -2007. IWC Special Reports: Comprehensive Assessment of Southern Hemisphere Humpback Whales.
- Franklin, W., Franklin, T., Jenner, C., Jenner, M., Goncalves, L., Leaper, R., Brooks, L. and Clapham, P. 2008. Photo-identification comparison of humpback whale (*Megaptera novaeangliae*) flukes from Antarctic Area IV with Western and Eastern Australian fluke catalogues. IWC Scientific Committee SC/60/SH1.
- Hedley, S. L., Bannister, J. L. and Dunlop, R. A. (In Press). Abundance estimates of southern hemisphere Breeding Stock 'D' humpback whales from aerial and land-based surveys off Shark Bay, Western Australia, 2008. IWC Special Publications series.
- Jensen, F.H., Bejder, L., Wahlberg, M., Madsen, P.T. 2009. Biosonar adjustments to sonar range of echolocating bottlenose dolphins (*Tursiops sp.*) in the wild. *The Journal of Experimental Biology* **212**:1078-1086
- Jensen, F.H., Bejder, L., Wahlberg, M., Auilar Soto, N., Johnson, M., and Madsen, P.T. 2009. Vessel noise effects on delphinid communication. *Marine Ecology Progress Series* Vol. **395**: 161–175.
- Kniest, E., Burns, D. and Harrison, P. (In press) 'Fluke Matcher': A computer-aided matching system for humpback whale (*Megaptera novaeangliae*) flukes. *Marine Mammal Science*. DOI: 10.1111/j.1748-7692.2009.00368.x
- Mangott, A., Birtles, R.A., Marsh, H. (In press). Attraction of dwarf minke whales (*Balaenoptera acutorostrata* subsp.) to vessels and swimmers in the Great Barrier World Heritage Area – the management challenges of an inquisitive whale. *Journal of Ecotourism*
- Moss, Franklin, W. and Franklin, T. "Long-term monitoring of chlorophyll-a in Hervey Bay, Queensland (1993-2003) by The Oceania Project". See: <http://www.epa.qld.gov.au/publications?id=1771>
- Oremus, M., Gales, R., Dalebout, L. M., Funahashi, N., Endo, T., Kage, T., Steel, D. and C. S. Baker. (In press). Worldwide mtDNA diversity and phylogeography of pilot whales (*Globicephala* spp.). *Biological Journal of the Linnean Society*
- Palmer, C., Fitzgerald, P., Wood A., Harley, S. and McKenzie A. 2009. False Killer Whales *Pseudorca crassidens*: regular visitors to Port Essington and Darwin Harbour in the Northern Territory, Australia. *Northern Territory Naturalist* 21: 49-53
- Paton, D.A., Brooks, L., Burns, D., Franklin, T., Franklin, W., Harrison, P. and Baverstock, P. (In press). First abundance estimate of east coast Australian humpback whales (*Megaptera novaeangliae*) utilising mark-recapture analysis and multi-point sampling. *J. Cetacean Res. Manage.*
- Paxton, C. G. M., Hedley, S. L. and Bannister, J. L. (In Press). Group IV Humpback whales: their status from aerial and land-based surveys off Western Australia, 2005. IWC Special Publications series
- Queensland Department of Environment & Heritage. 1998. Environmental Technical Report No 23: Hervey Bay Report - Chlorophyll-a Sampling by The Oceania Project, Andrew Moss and Julie Kocovski, ISSN 1037-4671 RE271.
- Tomo, I., Kemper, C.M and Lavery, P.J. (In press). 18-year study of South Australian dolphins shows variation in lung nematodes by season, year, age class and location. *Journal of wildlife diseases*

11.2 Unpublished literature

- All activities undertaken by the DPIPWE Marine Mammal Conservation Program are reported annually in comprehensive reports. These can be obtained on request from Rosemary Gales, DPIPWE.
- Bannister, J. L. 2010. Southern right whale aerial survey, southern Australian coast, August 2009. Final Report on work funded by the Island Foundation, Massachusetts, USA, 17pp. [Unpublished, available from J Bannister, bannisj@bigpond.com].
- Charlton-Robb, K., A. C. Taylor and S. W. McKechnie. Skull morphology of 'bottlenose' dolphins from south eastern Australia confirms genetic identification of a new long-separated inshore species. Poster presented at the 18th Biennial Conference of the Biology of Marine Mammals for the Society of Marine Mammalogy, October 2009. [Available from kate.charlton@sci.monash.edu.au]
- Curmook, M., Birtles, A. and Valentine, P. (2009) Key steps towards adaptive management of a whalewatching industry: developing sustainability objectives and indicators for the swimming-with-dwarf minke whales activity in the Great Barrier Reef. Poster presentation at the 18th Biennial Conference on the Biology of Marine Mammals, Quebec City, Canada, 12-16 October 2009
- Franklin, T., Franklin, W., Brooks, L., Baverstock, B., Harrison, P., and Clapham, C. (in prep). Group characteristics of Eastern Australian Humpback whales (*Megaptera novaeangliae*) in Hervey Bay 1992-2005; A population in recovery from severe overexploitation.
- Franklin, W., Franklin, T., Brooks, L., Gibbs, N., Childerhouse, S., Burns, D., Paton, D., Garrigue, C., Constantine, R., Poole, M., Hauser, N., Donoghue, M., Russell, K., Mattila, D.K., Robbins, J., Anderson, M., Olavarria, C., Jackson, J., Noad, M., Harrison, P., Baverstock, P., Leaper, R., Baker, B. and Clapham, P. (in review). Eastern Australia (E1 breeding grounds) may be a wintering destination for Area V Humpback Whales (*Megaptera novaeangliae*) migrating through New Zealand waters. *J. Cetacean Res. Manage.*
- Franklin, W., Franklin, T., Brooks, L., Gibbs, N., Childerhouse, S., Smith, F., Burns, D., Paton, D., Garrigue, C., Constantine, R., Poole, M., Hauser, N., Donoghue, M., Russell, K., Mattila, D.K., Robbins, J., Oosterman, A., Leaper, R., Baker, S. and Clapham, P. (in review) The Balleny Islands and Ross Sea (Antarctic Area V) may be the summer feeding area for Eastern Australian (E1 breeding group) Humpback whales (*Megaptera novaeangliae*). *J. Cetacean Res. Manage.*
- Garrigue, C., T. Franklin, K. Russell, D. Burns, M. Poole, D. Paton, N. Hauser, M. Oremus, R. Constantine, S. Childerhouse, D. Mattila, N.Gibbs, W. Franklin, J. Robbins, P. Clapham, C.S. Baker (in review). First assessment of interchange of humpback whales between Oceania and the east coast of Australia. *J. Cetacean Res. Manage.*
- Hedley, S., Bravington, M., Gales, N., Kelly, N. and Peel, D. (2007a). Aerial survey for minke whales off eastern Antarctica. Paper SC/59/IA2 presented to the IWC Scientific Committee (unpublished).
- Kelly, N., Peel, D., Pike, D., Bravington, M.V. and Gales, N. (2008). Aerial survey of minke whales off East Antarctica: report on 2007/08 test survey and future plans. Paper SC/60/IA4 presented to the IWC Scientific Committee (unpublished).
- Kelly, N., Peel, D., Pike, D., Bravington, M.V. and Gales, N. (2009). An aerial survey for Antarctic minke whales in sea ice off East Antarctica: A pilot study. Paper SC/61/IA3 presented to the IWC Scientific Committee (unpublished).
- Kelly, N., Peel, D., Bravington, M. and Gales, N. (2009a). A planned aerial survey for minke whales in East Antarctica during summer 2009/10. Paper SC/61/IA4 presented to the IWC Scientific Committee (unpublished).
- Kelly, N., Peel, D., Bravington, M.V. and Gales, N. (2009b). A description of killer whales (*Orcinus orca*) observed in Vincennes Bay, Eastern Antarctica. Paper SC/61/SM10 presented to the IWC Scientific Committee (unpublished).
- Mangott, A., Birtles, A., Marsh, H. 2009. Attraction of dwarf minke whales (*Balaenoptera acutorostrata* subsp.) to vessels and their swimmers in the Great Barrier Reef World Heritage Area – management challenges for an inquisitive whale. Oral presentation at the Marine and Tropical Science Research Facility (MTRSF) conference, Townsville, Australia
- Mangott, A., Birtles, A., Marsh, H., Valentine, P. 2009. Curious dwarf minke whales (*Balaenoptera acutorostrata* subsp.) – exceptional exploratory behaviour of a marine mammal associated with a swim-with industry. Poster presentation at the 18th Biennial Conference on the Biology of Marine Mammals, Quebec City, Canada, 12-16 October 2009
- Mason, S., Charlton-Robb, K. and Donnelly, D. 2009. Common or uncommon? The unusual presence of short-beaked common dolphins (*Delphinus delphis*) in a shallow, semi-enclosed embayment in Victoria, Australia. Poster presented at the 18th Biennial Conference of the Biology of Marine Mammals for the Society of Marine Mammalogy, October 2009. [Available from research@dolphinresearch.org.au]

- Monk, A., Charlton-Robb, K., Buddhadasa, S. and Thompson, R. 2009. Contribution of mercury contamination to bottlenose dolphin (*Tursiops sp.*) deaths. Poster presented at the 18th Biennial Conference of the Biology of Marine Mammals for the Society of Marine Mammalogy, October 2009. [Available from alissa.monk@sci.monash.edu.au]
- Oosterman, A., Whicker, M. and Garbett, P. 2010. A review of the 2009 Norfolk Island Whale Survey. 6 pp. [Available from adrianoosterman@hotmail.com].
- Owen, Thompson, R. and Charlton-Robb, K. 2009. Diet and foraging ecology of bottlenose dolphins (*Tursiops spp.*) in Victoria, Australia. Poster presented at the 18th Biennial Conference of the Biology of Marine Mammals for the Society of Marine Mammalogy, October 2009. [Available from research@dolphinresearch.org.au]
- Segawa, T. 2009. Cetacean strandings in South Australia, 1881-2008: temporal dynamics and influence of El Niño and La Niña. BSc in Marine Biology (Honours) Thesis, Flinders University. 87 pp.
- Sobtzick, S., Birtles, A. and Marsh, H. 2009. First insights into population demographics of dwarf minke whales involved in swim-with activities, using a photo-identification network. Poster presentation at the 18th Biennial Conference on the Biology of Marine Mammals, Quebec City, Canada, 12-16 October 2009
- Sobtzick, S., Birtles, A. and Marsh, H. 2009. The value of photo-identification data of dwarf minke whales (*Balaenoptera acutorostrata* subspecies) collected by whalewatching tourists in providing critical information for sustainable management. Poster presentation at the Marine and Tropical Science Research Facility (MTSRF) Conference in Townsville, Australia, 28-30 April 2009
- Trentin, E. and Kemper, C. 2009. Sexual maturity in male Indo-Pacific Bottlenose Dolphins: evidence for non-breeding adults. Australian Mammal Society meeting July 2009, Perth, Western Australia [abstract].

Appendix 1. FOA fishing descriptions and codes

FAO FISHING GEAR CATEGORIES:		FALLING GEAR	
SURROUNDING NETS		Cast nets	FCN
With purse lines	PS	Falling gear (not specified)	FG
One-boat operated purse seines	PS1	GILLNETS AND ENTANGLING GEAR	
Two-boat operated purse seines	PS2	Set gillnets (anchored)	GNS
Without purse lines (lampara)	LA	Driftnets	GND
SEINE NETS		Encircling gillnets	GNC
Beach seines	SB	Fixed gillnets (on stakes)	GNF
Boat seines	SV	Trammel nets	GTR
Danish seines	SDN	Combined gillnet-trammel nets	GTN
Scottish seines	SSC	Gillnets and entangling gillnets (not specified)	GEN
Pair seines	SPR	Gillnets (not specified)	GN
Seine nets (not specified)	SX	TRAPS	
TRAWLS		Stationary uncovered pounds nets	FPN
Bottom trawls	TBB	Pots	FPO
Beam trawl	OTB	Fyke nets	FYK
Otter trawls (side or stern)	PTB	Stow nets	FSN
Pair trawls	TBN	Barriers, fences, weirs, etc	FWR
Nephrops trawls	TBS	Aerial traps	FAR
Shrimp trawls (not specified)	TM	Traps (not specified)	FIX
Midwater trawls		HOOKS AND LINES	
Otter trawls (side or stern)	OTM	Handlines and pole-lines (hand operated)	LHP
Pair trawls	PTM	Handlines and pole-lines (mechanised)	LHM
Shrimp trawls	TMS	Set longlines	LLS
Midwater trawls (not specified)	TM	Drifting longlines	LLD
Otter twin trawls	OTT	Longlines (not specified)	LL
Otter trawls (not specified)	OT	Trolling lines	LTL
Pair trawls (not specified)	PT	Hooks and lines (not specified)	LX
Other trawls (not specified)	TX	GRAPPLING AND WOUNDING	
DREDGES		Harpoons	HAR
Boat dredges	DRB	HARVESTING MACHINES	
Hand dredges	DRH	Pumps	HMP
LIFT NETS		Mechanised dredges	HMD
Portable lift nets	LPN	Harvesting machines (not specified)	HMX
Boat-operated lift nets	LNB	MISCELLANEOUS GEAR	MIS
Shore operated stationary lift nets	LNS	RECREATIONAL FISHING GEAR	RG
Lift nets (not specified)	LN	GEAR NOT KNOWN OR NOT SPECIFIED	NK
		SHARK CONTROL NETS	NSC
		DERELICT FISHING GEAR	