

# Australia. Progress report on cetacean research, January 2007 to December 2007, with statistical data for the calendar year 2007

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## 1. SPECIES AND STOCKS STUDIED

| IWC common name                              | IWC recommended scientific name               | Area/stock(s)   | Items referred to  |
|--|---|---|--|
| <b><u>Mysticetes</u></b>                     |   |   |  |
| Blue whale (Antarctic<br>and/or pygmy forms) | <i>Balaenoptera musculus<br/>(brevicauda)</i> | Australia/Antarctica;<br>Geographe Bay, WA; S.A.;<br>Scott Reef/Browse Island | 2.1.1; 2.1.2; 3.1.1; 3.1.3; 4.1;<br>4.3; 8; 9  |
| Bryde's whale                                | <i>Balaenoptera edeni</i>                     |   | 8  |
| Humpback whale                               | <i>Megaptera novaeangiliae</i>                | Groups D, E; F Area IV & V  | 2.1.1; 2.1.2; 2.2; 3.1.1; 3.1.3;<br>4.1; 4.3; 4.4; 6.3.1; 6.3.2; 8; 9;<br>11.1; 11.2 |
| Minke whale, Antarctic                       | <i>Balaenoptera bonaerensis</i>               | S.A.  | 8  |
| Minke whale, likely Dwarf<br>form            | <i>Balaenoptera acutorostrata</i>             | Southern Hemisphere; NSW –<br>Cape Solander; S.A.                             | 2.1.1; 2.1.2; 3.1.1; 4.3; 6.3.2; 8;<br>9   |
| Right whale, pygmy                           | <i>Caperea marginata</i>                      | Southern Hemisphere; TAS; SA  | 4.3; 8; 9  |
| Right whale, Southern                        | <i>Eubalaena australis</i>                    | Southern Coastline; NSW; VIC;<br>TAS; SA                                      | 2.1.1; 2.1.2; 3.1.1; 4.1; 6.3.2;<br>11.1; 11.2                                       |
| <b><u>Odontocetes</u></b>                    |   |   |  |
| Atlantic humpback dolphin                    | <i>Sousa teuszii</i>                          | Mauritania  | 9; 10; 11  |
| Australian snubfin dolphin                   | <i>Orcaella heinsohni</i>                     | Australia   | 2.1.1; 2.2; 3.1.1; 4.1; 9; 11.1  |
| Blainville's beaked whale                    | <i>Mesoplodon densirostris</i>                | NSW   | 4.3; 8   |
| Bottlenose dolphin,<br>common or unid. sp.   | <i>Tursiops truncatus or Tursiops sp</i>      | Australia, SW Australia; Shark<br>Bay; WA; VIC; SA; NSW;                      | 2.1.1; 2.2; 3.1.1; 4.1; 4.3; 4.4;<br>7.3.2; 8; 9; 10; 11.1                           |
| Bottlenose dolphin, Indo-<br>Pacific         | <i>Tursiops aduncus</i>                       | Australia, NSW, SA  | 2.1.1; 3.1.1; 4.1; 4.2; 4.3; 4.4;<br>5; 7.3.2; 8; 9                                  |
| Common dolphin                               | <i>Delphinus delphis</i>                      | Australia; NSW; TAS; VIC; SA  | 2.1.1; 2.1.2; 2.2; 3.1.1; 3.1.2;<br>4.1; 4.2; 4.3; 4.4; 5; 7.3.2; 8;<br>11.1         |

|                               |                                       |  |   |
|-------------------------------|---------------------------------------|--|---|
| Cuvier's beaked whale         | <i>Ziphius cavirostris</i>            | worldwide                                  | 9; 10   |
| False killer whale            | <i>Pseudorca crassidens</i>           | Southern hemisphere                        | 2.1.2; 7.3.2; 8   |
| Ginkgo-toothed beaked whale   | <i>Mesoplodon ginkgodens</i>          | Indo-Pacific                               | 9; 10; 11   |
| Indo-Pacific humpback dolphin | <i>Sousa chinensis and S. plumbea</i> | Australia, China (Hong Kong), South Africa | 2.1.1; 2.2; 3.1.1;4.1;7.3.2; 8; 9; 10; 11.1                       |
| Irrawaddy dolphin             | <i>Orcaella brevirostris</i>          | Australia                                  | 7.3.2; 8  |
| Spinner dolphin               | <i>Stenella longirostris</i>          | Australia                                  | 7.3.2; 9  |
| Melon-headed whale            | <i>Peponocephala electra</i>          | Australia                                  | 8   |
| Pilot whale                   | <i>Globicephala sp.</i>               | S.A.                                       | 2.1.2; 7.3.2; 8   |
| Pilot whale, long-finned      | <i>Globicephala melas</i>             | Southern hemisphere, Tasmania              | 2.1.1; 2.2; 4.3; 4.4; 7.3.2; 8; 9; 11.2                           |
| Sperm whale                   | <i>Physeter macrocephalus</i>         | Australia; SA; VIC; TAS;                   | 2.1.1; 2.1.2; 2.2; 3.1.2; 4.2; 4.3; 4.4; 6.3.1; 6.3.2; 8; 9; 11.1 |
| Sperm whale, pygmy            | <i>Kogia breviceps</i>                | S.A.                                       | 4.2; 7.3.2; 8   |
| Unid. beaked whale            | <i>Mesoplodon sp.</i>                 | S.A.                                       | 8; 9; 10; 11.1  |
| Unid. dolphin                 |                                       | Australia; S.A.                            | 4.3; 7.3.2; 8   |
| Unid. whale                   | <i>Cetacea</i>                        | S.A.                                       | 2.1.2; 6.3.2; 8   |
| Unid. Ziphiid                 | <i>Ziphiidae</i>                      | Tasmania                                   | 4.3;8; 10   |

## 2. SIGHTINGS DATA

### 2.1 Field work

#### 2.1.1 Systematic

##### Summary Table:

| Target species                   | Date   | Area  | No. of sightings   | Contact person/institute and references   |
|----------------------------------|--|---|--|---|
| Australian snubfin dolphin (*1)  | 01/05/2007-31/08/2007                            | NE QLD- Cardwell-Townsville                       | 70   | Guido J. Parra, UQCEAL  |
| Australian snubfin dolphin       | March 2007 monthly (ongoing)                     | NT- Alligator Rivers Region, Kakadu National Park | 43   | Carol Palmer, NRETA, internal report  |
| Blue whale                       | 26/3-12/4/07;<br>20/4/07;<br>30/4/07;<br>16/5/07 | VIC- Bonney Upwelling                             | 5 (9 ind.);<br>4 (6 ind.);<br>4 (5 ind.);<br>1 (1 ind.)      | M. Morrice & P. Gill /BWS&DU/Gill and Morrice 2007a, Morrice 2007, Morrice et al. 2007a and b |
| Blue whale                       | 1/9/07-19/12/07                                  | WA-Geographe Bay                                  | Approx 150   | C. Burton /WWR –land & small vessel surveys   |
| Blue whale, pygmy (*2)           | 15/05-04/06,2007                                 | Browse Island, WA                                 | 0  | C.Jenner/CWR , Jenner and Jenner 2007a  |
| Bottlenose dolphin               | 14/10/07   | NSW- Off Sydney                                   | 1  | MqU Luciana Moller  |
| Bottlenose dolphin               | 13/03/07-29/12/07                                | WA- Bunbury                                       | 218 (animals identified off Bunbury during transect surveys) | Holly Smith/MU-CRU  |
| Bottlenose dolphin               | Regularly through 2007                           | SA-Gulf St Vincent                                | numerous   | M. Bossley/WDCS   |
| Bottlenose dolphin (*3)          | 20/03/2007-10/12/2007                            | VIC- Gippsland Lakes                              | 16   | Sue Mason/DRI   |
| Bottlenose dolphin (*3)          | 10/05/2007-08/10/2007                            | VIC- Port Philip Bay                              | 35   | Sue Mason /DRI  |
| Bottlenose dolphin (*1)          | 01/05/2007-31/08/2007                            | NE QLD- Cardwell-Townsville                       | 20   | Guido J. Parra, UQCEAL  |
| Bottlenose dolphin, Indo-pacific | 5/2-3/3/07<br>31/5-28/6/07<br>23/8-29/8/07       | NSW- Port Stephens                                | 115<br>91<br>47  | MqU J. Wiszniewski  |
| Common dolphin                   | 24/5/07 – 31/07/07                               | NSW-Cape Solander, Sydney                         | 722  | DECC-NSW Geoff Ross   |
| Common dolphin                   | 14/10/07   | NSW- Off Sydney                                   | 1  | MqU Luciana Moller  |

|                                     |                              |   |  |  |
|-------------------------------------|------------------------------|---|--|--|
| Common dolphin (*4)                 | 2007                         | Western TAS   | 12   | K.Evans (UTAS)   |
| Common dolphin (*3)                 | 15/05/2007-08/10/2007        | VIC-Port Philip Bay   | 23   | Sue Mason /DRI   |
| Common dolphin                      | Regularly through 2007       | SA-Gulf St Vincent  | numerous   | M. Bossley/WDCS  |
| Humpback whale                      | 01/07-28/07/07               | Norfolk Is.   | 9  | A. Oosterman (NIWS); Oosterman & Whicker (2008)                                  |
| Humpback whale                      | 24/5/07 – 31/07/07           | NSW-Cape Solander, Sydney   | 1295   | DECC-NSW Geoff Ross  |
| Humpback whale                      | 1/9/07-19/12/07              | WA-Geographe Bay  | Approx 750   | C. Burton/WWR – land and small vessel surveys                                    |
| Humpback whale                      | 16/07/07-24/07/07            | WA- Shark Bay   | Approx 100   | C. Burton/WWR – aerial surveys   |
| Humpback whale                      | 29/07/07-04/09/07            | WA Pender Bay   | 377 pods/783 whales tracked by theodolite. 45 pods/117 whales w/ hydrophone recordings | S. McKay/WEG - Unpublished data (part of PhD thesis to be submitted by mid-2009) |
| Humpback whale (*5)                 | 2007                         | Eastern TAS   | 159  | R.Gales/DPIW-TAS   |
| Humpback whale (*6)                 | 17/6/07-28/7/07              | SE QLD-Pt Lookout   | 1824   | Mike Noad, UQCEAL  |
| Humpback whale, Aerial surveys (*2) | 02/08-30/09, 2007            | WA-Browse/Kimberley   | 1150   | C.Jenner/CWR, Jenner and Jenner 2007b  |
| Humpback whale, Aerial surveys (*2) | 24/06 – 25/10, 2007          | WA- NW Cape   | 789  | C.Jenner/CWR, Jenner et al. unpubl.  |
| Humpback whale, vessel surveys (*2) | 15/08 – 29/10, 2006          | WA - Browse/Kimberley   | 534  | C.Jenner/CWR, Jenner and Jenner 2006   |
| Humpback whale, Vessel surveys (*2) | 04/07 – 17/08, 2007          | WA-Browse/Kimberley   | 1128   | C.Jenner/CWR, Jenner and Jenner 2007b  |
| Indo-Pacific humpback dolphin       | March 2007 monthly (ongoing) | NT- Alligator Rivers Region, Kakadu National Park                 | 69   | Carol Palmer, NRETA, internal report   |
| Indo-Pacific humpback dolphin (*1)  | 01/05/2007-31/08/2007        | NE QLD- Cardwell-Townsville                                       | 60   | Guido J. Parra, UQCEAL   |
| Long finned pilot whale (*4)        | 2007                         | Western TAS   | 3  | K.Evans (UTAS)   |
| Minke whale                         | 24/5/07 – 31/07/07           | NSW-Cape Solander, Sydney   | 29   | DECC-NSW Geoff Ross  |
| Right whale, Southern               | 16-30/8/07                   | SA-Head of Bight  | Max. single day: 68 (19/8/06)  | Dr. S Burnell (Eubalaena); Burnell 2007  |
| Right whale, Southern               | 1/9/07-19/12/07              | Geographe Bay   | Approx 10  | C. Burton /WWR– land and small vessel surveys                                    |
| Right whale, Southern               | 31 Aug – 6 Sept 2007         | Southern coast of Australia between C Leeuwin (WA) and Ceduna, SA | 286 animals including 57 cow-calf pairs.   | J Bannister, WAM   |
| Right whale, Southern (*5)          | 2007                         | Eastern TAS   | 0  | R.Gales/DPIW-TAS   |
| Sperm whale(*4)                     | 2007                         | Western TAS   | 8  | K.Evans (UTAS)   |

#### Notes

(\*1) *Conservation genetics of Australian snubfin and humpback dolphins.* This study, led by Guido J. Parra, is using molecular techniques together with behavioural observations of individual animals to provide new insights into the population structure, social organization and dispersal behaviour of Australian Snubfin and humpback dolphins. This is the first study to look at the population genetics of these two rare dolphin species in Australia. This information coupled with concurrent studies on their ecology will greatly enhance our ability to manage local populations and ensure the long-term survival of snubfin and humpback dolphins in Australian waters.

(\*2) Centre for Whale Research – Pygmy blue and humpback whale surveys.

The Browse Basin region in NW Australia was systematically searched for evidence of a pygmy blue whale feeding ground during May, 2007. No large whales were sighted during this month, although this species has now been identified from acoustic records in this area during July and November (R. McCauley *pers.comm.*)

Further systematic vessel surveys during the July/August period detailed migratory patterns of humpback whales throughout the Kimberley, as far north as the Maret Islands and off-shore to Browse Island. This survey, in combination with an identical series of transects conducted during 2006 from mid August to end October, identified the main humpback whale calving grounds along the Kimberley coast and highlighted the high species diversity found near Browse Island where 15 species of cetacean were sighted.

Aerial surveys were used to further confirm the spatial and temporal high density areas of humpback whales in the Kimberley region, as well as to calculate abundance estimates. Aerial surveys off NW Cape were carried out as part of a “before and after” experimental design aimed at determining the reaction of migrating humpback whales to increasing oil and gas activity. Identical surveys in 2006/2007 were compared to pre-impact surveys in 2000/2001 (Jenner *et al.*, in press) in an ongoing study that has suggested that pregnant females may be negatively impacted by seismic and other oil and gas related noise (data presented at 2007 Marine Mammal Conference).

(\*3) Common and bottlenose dolphin populations surveys. The Dolphin Research Institute and Monash University conducted surveys on common and bottlenose dolphin populations in Port Phillip from May to December 2007, and on the bottlenose dolphin population in the Gippsland Lakes from March to December 2007. During 2007, the Institute collected dorsal fin photographs for use in photo-identification of individuals, and collected behavioural data, Monash University researcher collected biopsy samples and acoustic recordings. Researchers conducted 82 surveys from the Institute’s vessel. A total of 74 sightings of dolphins were made over this period.

(\*4) The distribution and habitat preferences of cetaceans along the west coast of Tasmania. The results presented are the preliminary results from this project. A final report for this project is due to be complete in May 2008. This project involves regular aerial surveys across an area bounding the west coast of Tasmania from 41°S to 43°S.

(\*5) Aerial line transect surveys off Tasmania. The results presented are the yearly results resulting from aerial line transect surveys conducted along Tasmania’s east coast. Sightings represent number sighted from flights during the calendar year. The project report will be completed during 2008.

(\*6) East coast humpback whale population abundance. In 2007, UQCEAL conducted a 6 week land-based survey of humpback whales at Pt Lookout, SE Qld, Australia. When compared with previous surveys at this study site, there is a continuation of the long-term rapid rate of increase of this population. The rate of increase between 1984 and 1997 is calculated as 11.1% per annum (95% CI 10.5-11.6%). Aerial surveys were also conducted to compare with the land-based sightings. Analyses are on-going.

### 2.1.2 Opportunistic, platforms of opportunity

Summary Table:

| Primary species     | Area                          | Data type/method              | Collected by                 | Platform                   | Location of archive (if applicable) | Contact person/institute and refs   |
|---------------------|-------------------------------|-------------------------------|------------------------------|----------------------------|-------------------------------------|---|
| Blue whale          | Southern Australia            | 14/3/07<br>13/4/07            | D. Levings<br>P. Gill        | Fixed-wing aircraft        |                                     | P. Gill/BWS/ Gill and Morrice 2007a, Gill et al 2007b                     |
| Common dolphin      | VIC - Off Portland            | 20/04/07<br>Tissue/<br>biopsy | Luciana Moller/<br>Pete Gill | Blue whale research boat   |                                     | Luciana Moller, MqU; Peter Gill and Margie Morrice, Blue Whale Study Inc. |
| Humpback whale      | QLD- Byron Bay / NSW- Ballina | Sightings & photo-ID data     | Scientists                   | University research vessel |                                     | D.Burns, SCU-WRC  |
| Humpback whale (*1) | NSW - Eden                    | Photo-id; sightings           | Scientists                   | Whale watching vessel      |                                     | Dr. Quincy Gibson, PWF  |
| Humpback whale (*1) | QLD- Hervey Bay               | Photo-id; sightings           | Scientists                   | Research vessel            |                                     | Dr. Quincy Gibson, PWF  |

|  |                               |   |                                    |                            |  |  |
|--|-------------------------------|---|------------------------------------|----------------------------|--|--|
| Humpback whale & Southern right whales   | Eastern TAS                   | Photo-id; sightings   | DPIW-TAS                           | Biopsy Vessel              |  | R.Gales/DPIW-TAS                           |
| Humpback whale; Southern Right whale (*2)  | VIC-Port Phillip Bay          | Photo Identification & behavioural observations                       | scientists                         | DRI Research Vessel        |  | Sue Mason/DRI                              |
| Humpback whales (*3)   | WA-NW Shelf                   | Visual sightings with effort  | crew                               | FPSO vessel                |  | C.Jenner/CWR, CWR website oil and gas link |
| Minke whale, dwarf   | N GBR                         | Photo-id; behavioural observation; sightings                          | Primarily scientists + vessel crew | whalewatching vessel       |  | Dr A. Birtles; JCU                         |
| Southern right whale<br>Humpback whale<br>Blue whale<br>Pilot whale<br>Sperm whale<br>Unid. Large cetacean | SA                            | n = 94 sightings<br>n=8<br>n = 3-4<br><br>n =6-8<br>n ≥1<br><br>n = 3 | Various                            | Various                    |  | C. Kemper/S.A. Museum                      |
| Southern right whale & Humpback whale  | VIC-Logans Beach, Warrnambool | Sightings   | M. Watson and volunteers           | Whale watching platform    |  | Mandy Watson, DSE, Victoria                |
| Various (*4)   | Australia-wide                | Sightings   | Fisheries observers & fishers      | Commercial Fishing Vessels |  | Cate Coddington, AFMA                      |
| Various (*5)   | NSW                           | Sightings   | Public                             | Land-based                 |  | Ronald Ling, ORRCA                         |

## Notes

(\*1) *Pacific Whale Foundation-Eden, NSW & Hervey Bay, QLD.* Vessel-based research activities were conducted by PWF onboard the Cat Balou, Eden, NSW from 5 October to 26 October 2007. Vessel-based research activities were also conducted by PWF under Hervey Bay Marine Park Permit (MP2004/005) to document the use of Hervey Bay Marine Park by humpback whale mothers with calf. Observations were conducted from 2 August - 11 October 2007. 572.8 hours were spent on the water in Hervey Bay during 62 days of field effort. A total of 638 groups (including affiliations and disaffiliations) of whales were observed comprised of 1,729 animals (984 adults, 478 sub-adults, 218 calves, and 49 undetermined). Mean pod size was 2.7 whales. 245.1 hours were spent observing whales (43% of field effort), with approximately 28 (total) animals observed each day. Using photographic identifications techniques, 753 unique whales were identified.

(\*2) *Dolphin Research Institute.* DRI continued building its community dolphin-sighting network which has resulted in the recording of regular dolphin sightings within most of Victoria's coastal waters including Port Phillip, Western Port and the Gippsland Lakes, resulting in approximately 218 sightings of cetaceans being reported throughout the year. During routine surveys within Port Phillip Bay, DRI and Monash University researchers opportunistically collected data on animals not regularly observed in PPB.

(\*3) *Centre for Whale Research.* This is the 3<sup>rd</sup> year of this programme involving BHP Billiton employees on their FPSO Griffin Venture near NW Cape, Western Australia. The programme aims to stimulate interest in the environment for oil and gas workers and won an industry award last year. CWR will extend this programme to at least two other FPSO's in 2008. For details see [www.cwr.org.au/research/fpso.html](http://www.cwr.org.au/research/fpso.html)

(\*4) *Australian Fisheries Management Authority.* Opportunistic sightings made by AFMA fisheries observers and fishers, from commercial fishing vessels between 1 January 2007 and 31 December 2007 included blue, humpback, Southern right, unidentified, killer, false killer, and pilot whales, and dolphins. In 2007, AFMA fisheries observers were present on board a total of 246 trips to a variety of fisheries including: the Great Australian Bight Trawl Fishery (8), South East Trawl Fishery (44), Torres Strait Prawn Fishery (5), Northern

Prawn Fishery (7), Eastern Tuna and Billfish Fishery (148), Southern and Western Tuna and Billfish Fishery (1), Gillnet Hook and Trap fishery (longline) (11), Gillnet Hook and Trap Fishery (gillnet) (3), Coral Sea Fishery (trap & Autoline) (4), Coral Sea Fishery (trawl) (1), North West Slope Trawl Fishery (2), Western Deepwater Fishery (1), East Coast Deepwater Fishery (2), Macquarie Island Fishery (2), and Heard and McDonald Island Fisheries (7).

(\*5) Annual Whale Census (ORRCA). On June 24 2007, ORRCA conducted their annual whale census. Members of the public were encouraged to count the number of whales they see along the east coast of New South Wales. A total of 453 whales were sighted on the day.

## 2.2 Analyses/development of techniques

| Target species                | Date                  | Area                        | Methods/effort                                       | Parameters/ factors measured   | Contact person/institute; refs                                 |
|-------------------------------|-----------------------|-----------------------------|--|--|--|
| Australian Snubfin dolphin    | 01/05/2007-31/08/2007 | Cardwell-Townsville, NE QLD | Boat based photo-identification and biopsy surveys   | School size and age composition, behaviour, spatial distribution, habitat preferences, movement patterns, social structure | Guido J. Parra, UQCEAL   |
| Bottlenose dolphin            | 2007                  | SA-Gulf St Vincent          | Photo ID, strip transect                             | Distribution; sighting frequency   | M. Bossley/WDCS  |
| Bottlenose dolphin            | 13/03/2007-29/12/2007 | WA-Bunbury                  | Line transect method                                 | Frequency of sighting and distribution/habitat use   | Holly Smith MU-CRU (thesis in prep)                            |
| Bottlenose dolphin            | 01/05/2007-31/08/2007 | Cardwell-Townsville, NE QLD | Boat based photo-identification and biopsy surveys   | School size and age composition, behaviour, spatial distribution, habitat preferences, movement patterns, social structure | Guido J. Parra, UQCEAL   |
| Common dolphin                | 2007                  | Western TAS                 | Line transect survey                                 | Distribution; sighting frequency   | K.Evans (UTAS)   |
| Common dolphin                | 2007                  | Gulf St Vincent             | Photo ID, strip transect                             | Distribution; sighting frequency   | M. Bossley/WDCS  |
| Humpback whale                | 2007                  | Eastern TAS                 | Line transect survey                                 | Distribution; sighting frequency   | R.Gales/DPIW-TAS   |
| Humpback whale                | 5/10/07               | Eden, NSW                   | Photo-ID   | Distribution; population estimate, calving rates   | Dr. Quincy Gibson, PWF   |
| Humpback whale                | 2/8/07-11/10/07       | Hervey Bay, QLD             | Photo-ID   | Distribution; population estimate, calving rates   | Dr. Quincy Gibson, PWF   |
| Humpback whale (*1)           | 02/08-30/09, 2007     | WA-Browse/Kimberley         | Aerial Line transect survey<br>Distance modelling    | Distribution; sighting frequency, abundance estimate   | C.Jenner/CWR, Jenner and Jenner 2007b                          |
| Humpback whale (*2)           | 17/6/07-28/7/07       | Pt Lookout, SE QLD          | Land-based relative abundance survey; aerial surveys | Daily counts with distribution; some aerial surveys to compare with land-based counts                                      | Mike Noad, UQCEAL  |
| Humpback whale (*3)           | 01/07-28/07/07        | Norfolk Island              | Replica survey of Dawbin's July 1956 work            | Numbers observed, weather statistics, additional spp. observed   | A. Oosterman and M. Whicker (NIWS); Oosterman & Whicker (2008) |
| Indo-Pacific humpback dolphin | 01/05/2007-31/08/2007 | Cardwell-Townsville, NE QLD | Boat based photo-identification and biopsy surveys   | School size and age composition, behaviour, spatial distribution, habitat preferences, movement patterns, social structure | Guido J. Parra, UQCEAL   |
| Long finned pilot whale       | 2007                  | Western TAS                 | Line transect survey                                 | Distribution; sighting frequency   | K.Evans (UTAS)   |
| Right whale, Southern         | 2007                  | Eastern TAS                 | Line transect survey                                 | Distribution; sighting frequency   | R.Gales/DPIW-TAS   |
| Sperm whale                   | 2007                  | Western TAS                 | Line transect survey                                 | Distribution; sighting frequency   | K.Evans (UTAS)   |

Notes:

(\*1) *Centre for Whale Research – Humpback whale aerial surveys.* Humpback whale aerial survey data collected during 2007 for the Kimberley region were analysed using Distance 5.0 software. The Kimberley surveys yielded a preliminary population estimate of 16,345 whales across the August to October peak of season although issues of residency time and resulting correction factors remain to be more thoroughly addressed during the 2008 season.

(\*2) *UQCEAL Humpback whale aerial survey data.* Aerial survey data collected at Pt Lookout (see 2.1.1) will allow some of the underlying assumptions of the land-base to be tested. It will also allow g(0) to be calculated for aerial flights by comparison with the land-based counts. Analyses are on-going.

(\*3) *Norfolk Island humpback whale survey.* A replica survey of Dawbin's July 1956 survey was conducted by NIWS during July 2007 (351x humpbacks recorded for July 1956 / 9x humpbacks recorded for July 2007) (Oosterman and Whicker 2008).

### 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 dolphin       | Dorsal fin               | NE QLD                 | To be estimated   | Y               | >70              | Guido J. Parra, UQCEAL   |
| Blue whale                       | Dorsal fin/flank pigment | Southern coastline     | 19                | Y               | 74               | M. Morrice & P. Gill/BWS&DU/ Gill and Morrice 20071, Gill et al. 2007a and b |
| Blue whale                       | lateral                  | WA-Geographe Bay       | 15                | Y               | 150              | Chris Burton – land and small vessel surveys                                 |
| Bottlenose dolphin               | Dorsal                   | SA-Gulf St Vincent     | Approx 20         | Y               | Approx 300       | M. Bossley/WDCS  |
| Bottlenose dolphin               | Dorsal, body scarring    | WA                     | 100               | Y               | 100              | Holly Smith/MU-CRU   |
| Bottlenose dolphin               | Dorsal fin               | VIC-Port Phillip Bay   | Analysis underway | Y               | 110              | Sue Mason/DRI & Kate Charlton/MnU  |
| Bottlenose dolphin               | Dorsal fin               | Northeast Queensland   | To be estimated   | Y               | >30              | Guido J. Parra, UQCEAL   |
| Bottlenose dolphin, Indo-pacific | Dorsal fin               | NSW coast              | 158               | Y               | 257              | J. Wiszniewski/MqU   |
| Common dolphin                   | Dorsal fin               | VIC-Port Phillip Bay   | 35                | Y               | 35               | Sue Mason/DRI  |
| Common dolphin                   | Dorsal                   | SA-Gulf St Vincent     | Approx 60         | Y               | Approx 60        | Nicole Filby (M. Bossley/WDCS)   |
| Humpback whale                   | Fluke                    | Norfolk Island         | 2                 | Y               | 5                | A. Oosterman and M. Whicker (NIWS); Oosterman & Whicker (2008)               |
| Humpback whale                   | Fluke<br>Dorsal fin      | Tasmania (Group V)     | 41<br>42          | Y               | 44<br>42         | R.Gales/DPIW-TAS   |
| Humpback whale                   | Flukes, lateral body     | Eden/EA                | 134               | Y               | 3,211 (thru '06) | Dr. Quincy Gibson , PWF  |
| Humpback whale                   | Fluke                    | S Pacific              | 100+              | Y               | .                | R.Harcourt MqU   |
| Humpback whale                   | Fluke                    | Group E (i)            | 15                | Y               | 630              | D.Burns, SCU-WRC   |
| Humpback whale                   | Flukes, Lateral Body     | E Australia-Hervey Bay | 753               | Y               | 3,211 (thru '06) | Dr. Quincy Gibson, PWF   |



|                               |   |   |   |         |  |  |
|-------------------------------|---|---|---|---------|--|--|
| Humpback whale                | Dorsal fin, fluke & body markings                 | VIC-Port Phillip Bay  | 5   | Y       | 6  | Sue Mason/DRI<br>Kate Charlton/MnU                     |
| Humpback whale                | Fluke<br>Dorsal fin                               | WA-Exmouth Gulf   | 221<br>918  | Y       | 1774<br>4951   | C.Jenner/CWR   |
| Humpback whale                | Fluke<br>Lateral                                  | WA-Geographe Bay  | 30<br>30  | Y       | 2000<br>2500   | Chris Burton/WWR –<br>land and small vessel<br>surveys |
| Humpback whale                | Fluke<br>Dorsal fin                               | Group D   | 41<br>76  | Pending | Pending  | S. McKay/WEG   |
| Indo-Pacific humpback dolphin | Dorsal fin  | Northeast Queensland  | To be estimated   | Y       | >50  | Guido J. Parra/UQCEAL                                  |
| Minke whale, dwarf            | L/R thorax primarily; plus scar & unique features | QLD- Northern GBR   |   | Y       |  | Dr A. Birtles/JCU.                                     |
| Right whale, Southern         | Callosities                                       | Tasmania  | 5   | y       | 75   | R.Gales/DPIW-TAS                                       |
| Right whale, Southern         | callosities                                       | Southern NSW and southern Australia                               | 1   | Y       | 30+  | R.Harcourt and N. Patenaude/MqU                        |
| Right whale, Southern         | Callosities                                       | Hervey Bay/EA   | 1   | Y       | 5  | Dr. Quincy Gibson/PWF                                  |
| Right whale, Southern         | Callosity   | Head of Bight   | 69  | Y       | 789  | S. Burnell/Eubalaena                                   |
| Right whale, Southern         | Callosity pattern                                 | SE Australia  | 10  | Y       | 39   | Mandy Watson/DSE, Victoria                             |
| Right whale, Southern         | Dorsal fin, fluke & body markings                 | VIC-Port Phillip Bay  | 1   | Y       | 1  | Sue Mason/DRI  |
| Right whale, Southern         | Head callosity photos                             | Southern coast of Australia between C Leeuwin (WA) and Ceduna, SA | 376 digital photos selected for further analysis ('matching' to catalogue, for individual id) | N       | Currently 5069 photographs representing 1214 individuals identified from 1976 (mainly 1980-2004) | J Bannister/WAM  |

### 3.1.2. Artificial marking data

The Department of Primary Industries and Water (TAS) use green floy tags when releasing stranded cetaceans. They have a return address GPO Box 8, Canberra, ACT 2601, Australia. These tags are used to re-identify stranded animals and for tracking individual animals throughout the stranding and rescue process.

| Species              | Age class | Sex    | Tag Type       | Tag ID  | Date deployed | Location               | Notes                    |
|----------------------|-----------|--------|----------------|---|---------------|------------------------|--------------------------|
| Sperm whale (n=7)    | Subadult  | Male   | Floy/Spaghetti | W00-543;<br>W00-542;<br>W00-529:531;<br>W00-534:533;<br>W00-537:538;<br>W00-541:540;<br>W00-523 | 9/03/2007     | Western Tasmania       | Stranded animal released |
| Common dolphin (n=6) | Adult     | Male   | Floy/Spaghetti | W00-500;<br>W00-501;<br>W00-502;<br>W00-503;<br>W00-504;<br>W00-506                             | 24/12/2007    | South Eastern Tasmania | Stranded animal released |
| Common dolphin (n=3) | Adult     | Female | Floy/Spaghetti | W00-505;<br>W00-507;<br>W00-508;  | 24/12/2007    | South Eastern Tasmania | Stranded animal released |
| Common dolphin (n=2) | Subadult  | Female | Floy/Spaghetti | W00-510;<br>W00-511   | 24/12/2007    | South Eastern Tasmania | Stranded animal released |

### 3.1.3 Telemetry data

| Species           | Tag type          | No. successfully deployed | Maximum time transmitting | Contact person/institute; refs  |
|-------------------|-------------------|---------------------------|---------------------------|---|
| Blue whale        | Suction-cup radio | 7                         | 10.62 hrs                 | M. Morrice/DU/ Gill and Morrice 2007a, Morrice 2007, Morrice et al. 2007a and b, Attard et al. 2007, Moller et al. 2007 |
| Humpback whale    | Satellite         | 10                        | 8 days                    | N.Gales/ACAMMS, C.Jenner/CWR  |
| Blue whale, pygmy | Satellite         | 7                         | 10 days                   | N.Gales/ACAMMS, C.Jenner/CWR  |

### 3.2 Analyses/development of techniques

NA

## 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 dolphin       | Northeast Queensland                     | 2007-14  | Y               | 0                 |                                | Guido J. Parra/UQCEAL  |
| Blue whale                       | Southern coastline                       | 5 (biopsy)                                       | Y               | 5                 | 5                              | P. Gill/BWS & L. Moller/Macquarie University/ Attard et al. 2007, Gill and Morrice 2007a, Moller et al. 2007 |
| Blue whale                       | Southern coastline                       | 7 (sloughed skin)                                | Y               | 0                 | 7                              | P. Gill/BWS & L. Moller/Macquarie University   |
| Bottlenose dolphin               | SE Aust                                  | 8  | Y               | 22                | 30                             | Luciana Moller/MqU   |
| Bottlenose dolphin               | Northeast Queensland                     | 2007   | Y               | 0                 |                                | Guido J. Parra/ UQCEAL   |
| Bottlenose dolphin               | Bunbury Busselton Cockburn Sound Sound   | 21 days<br>77 samples<br>(+21 samples from 2006) | Y<br>(Y – 2006) | 0<br>(21 – 2006)) | 77<br>(21 - 2006)<br>TOTAL: 98 | Dr Lars Bejder/MU-CRU  |
| Bottlenose dolphin               |  | 21 Sep 2006 to 21 Sep 2007 – 76 biopsies         | Y               |                   |                                | M Krutzen/University of Zurich   |
| Bottlenose dolphin               | PPB Gippsland Lakes                      | 19<br>16   | Y               | 30<br>7           | 49<br>23                       | Kate Charlton/MnU  |
| Bottlenose dolphin, Indo-pacific | NSW coast                                | 2007/24  | N               | 24                | 269                            | J. Wiszniewski MqU   |
| Common dolphin                   | SE Aust. Southern Australia              | 2<br>3   | Y<br>Y          | 113<br>0          | 115<br>3                       | Luciana Moller/MqU<br>Luciana Moller/ MqU, Peter Gill and Margie Morrice/ Blue Whale Study Inc.              |
| Humpback whale                   | Norfolk Is. Group V Breeding Stock E(ii) | 2007 – 4   | N               | 0<br>(6 pending)  | 6                              | W. Franklin/SCU-WRC  |
| Humpback whale                   | Group E                                  | 2007/59  | Y               | 0                 | 62                             | R.Gales/DPIW-TAS   |
| Humpback whale                   | Group E (east coast)                     | 10   | Y               | 0                 | 10                             | UQ-EnTox   |
| Humpback whale                   | WA-Exmouth Gulf                          | 2007/220   | Y               | 0                 | 220                            | Mike Double/ACAMMS   |

|                               |                      |         |   |    |    |                                 |
|-------------------------------|----------------------|---------|---|----|----|---------------------------------|
| Indo-Pacific humpback dolphin | Northeast Queensland | 2007-12 | Y | 0  |    | Guido J. Parra, UQCEAL          |
| Right whale, Southern         | Tasmania             | 2007/2  | Y | 0  | 2  | R.Gales/DPIW-TAS                |
| Right whale, Southern         | S. Australia         | 1       | Y | 87 | 88 | R.Harcourt & N. Patenaude , MqU |

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

| Species (*1)                     | Area/stock | Tissue type(s)*     | No. collected | Archived (Y/N) | No. analysed | Contact person/institute |
|----------------------------------|------------|---------------------|---------------|----------------|--------------|--------------------------|
| Bottlenose dolphin, Indo-pacific | S.A.       | Genetic tissues(*2) | 3             | 3Y             |              | C. Kemper/S.A. Museum    |
| Common dolphin                   | S.A.       | Genetic tissues(*2) | 9             | 9Y             |              | C. Kemper/S.A. Museum    |
| Sperm whale                      | S.A.       | Genetic tissues(*2) | 1             | 1Y             |              | C. Kemper/S.A. Museum    |
| Sperm whale, pygmy               | S.A.       | Genetic tissues(*2) | 1             | 1Y             |              | C. Kemper/S.A. Museum    |

(\*1)This list includes: Entanglement in net or line, or entanglement probable, or accidental or intentional anthropogenic injury probable  
(\*2)Genetic tissues, (blood, liver, kidney, muscle, skin) reproductives, stomach and intestines, toxic contaminants (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         |
|----------------------------------|-----------------------|--|-------------------------------------|----------------|--------------|----------------------------------|
| Blainville's Beaked whale        | Bundeena, NSW         | Full tissue set  | 1                                   | Y              | 1            | ARWH-JH                          |
| Blainville's Beaked whale        | NSW                   | Muscle tissue and skull  | 1                                   | Y              | 1            | Sandy Ingleby, Australian Museum |
| Blue whale                       | S.A.                  | Genetic tissues (*1)   | 1                                   | 1Y             |              | C. Kemper/S.A. Museum (*2)       |
| Bottlenose dolphin               | East Coast, Australia | skin   | 1                                   | Y              |              | Col Limpus-EPA-QLD               |
| Bottlenose dolphin               | WA-Mandurah, Bunbury  | Skin, blubber, tooth, organs (liver, kidneys, lung, heart, stomach lung) | 2                                   | Y              | 0            | Dr Lars Bejder MU-CRU            |
| Bottlenose dolphin               | SE Australia          | Skin, blubber, liver, kidney, melon                                      | 7                                   | Y              | 0            | Kate Charlton/MnU                |
| Bottlenose dolphin               | VIC                   | skull  | 2                                   | Y              | 2            | Rory O'Brien, Museum Victoria    |
| Bottlenose dolphin               | S.A.                  | Genetic tissues (*1)   | 2                                   | 2Y             |              | C. Kemper/S.A. Museum (*2)       |
| Bottlenose dolphin, Indo-pacific | Port Stephens, NSW    | Skin and blubber   | 1                                   | N              | 1            | MqU J. Wiszniewski               |
| Bottlenose dolphin, Indo-pacific | S.A.                  | Genetic tissues (*1)   | 6                                   | 6Y             |              | C. Kemper/S.A. Museum (*2)       |
| Common dolphin                   | VIC- Portland         | Skin, blubber, whole foetus, skeleton                                    | 2 (each with near full-term foetus) | Y              | 2            | Rory O'Brien, Museum Victoria    |
| Bottlenose dolphin, common       | S.A.                  | Genetic tissues (*1)   | 2                                   | 2Y             |              | C. Kemper/S.A. Museum (*2)       |

|                           |  |   |     |    |     |  |
|---------------------------|--|---|-----|----|-----|--|
| Common dolphin            | TAS  | Skin(9), blubber(5), Foetus(1), Muscle(5), Kidney(5), Liver(5), Stomach Contents (1). | 9   | Y  | 0   | R.Gales/DPIW-TAS (*3)  |
| Common dolphin            | Cronulla, NSW  | Full tissue set   | 1   | Y  | 1   | ARWH-JH  |
| Common dolphin            | East Coast, Australia                                    | skin  | 1   | Y  |     | Col Limpus-EPA-QLD   |
| Common dolphin            | SE Australia   | Skin, blubber, liver, kidney, melon   | 11  | Y  | 0   | Kate Charlton/MnU  |
| Common dolphin            | S.A.   | Genetic tissues (*1)  | 4   | 4Y |     | C. Kemper/S.A. Museum (*2)   |
| Delphinus sp.             | Northern NSW   | Skin, blubber, lung, liver, ovary, brain, kidney                                      | 1   | Y  | 0   | Christine Fury SCU-WRC   |
| Humpback whale            | Area 5   | Skin, blubber, lung   | 1   | Y  | 1   | Christine Fury SCU-WRC   |
| Humpback whale, None      | Port Hurd, Bathurst Is, NT<br>11deg 37min/130 deg 11 min | Skin and flesh<br>Stored in DMSO2   | 2   | Y  | 0   | Paul Horner, Museum and Art Gallery of NT +<br>Ray Chatto, NRETA 08 89209260 |
| Minke whale               | East Coast, Australia                                    | skin  | 1   | Y  |     | Col Limpus-EPA-QLD   |
| Pilot whale, long-finned  | Tasmania   | Skin (1), Tooth (1)   | 1   | y  | 0   | R.Gales/DPIW-TAS (*3)  |
| Pilot whale, long-finneds | Tasmania   | Skin  | 227 | Y  | 227 | R.Constantine UoA  |
| Right whale, pygmy        | Tasmania   | Skin, Muscle, Kidney, Faeces, Liver, Testis,  | 1   | Y  | 0   | R.Gales/DPIW-TAS (*3)  |
| Sperm whale               | Tasmania   | Blubber(5), Muscle(4), Skin(5), Tooth(5), Stomach Contents(4)                         | 5   | Y  | 0   | R.Gales/DPIW-TAS (*3)  |
| Sperm whale               | East Coast, Australia                                    | skull   | 1   | Y  |     | Heather Janetzki   |
| Sperm whale               | VIC, Venus Bay   | Skin, blubber, muscle, flipper, whole jaw & teeth                                     | 1   | Y  | 1   | Rory O'Brien, Museum Victoria  |
| Sperm whale               | S.A.   | Genetic tissues (*1)  | 1   | 1Y |     | C. Kemper/S.A. Museum (*2)   |
| Unid. dolphin             | S.A.   | Genetic tissues (*1)  | 1   | 1Y |     | C. Kemper/S.A. Museum (*)  |
| Unid. dolphin             | East Coast, Australia                                    | skin  | 1   | Y  |     | Col Limpus-EPA-QLD   |
| Unid. Ziphiid (*4)        | Tasmania   | Skin, Skull   | 1   | Y  | 0   | R.Gales/DPIW-TAS (*3)  |
| Unid. Ziphiid (*4)        | Tasmania   | Skin, Skull, Blubber, Stomach   | 1   | Y  | 0   | R.Gales/DPIW-TAS (*3)  |

(\*1) Genetic tissues, (blood, liver, kidney, muscle, skin) reproductives, stomach and intestines, toxic contaminants (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.

(\*2) Samples collected by C. Kemper/S.A. Museum includes strandings of the following types: Unknown; Diseased; Live stranding; Other natural causes.

(\*3) The Department of Primary Industries and Water-TAS conducts full necropsies on deceased cetaceans where accessible. Samples taken depend on the freshness of the animal indicated by the carcass code. When the specimen is highly degraded usually only skin is archived for DNA purposes.

(\*4) The two unidentified Ziphiids are currently undergoing genetic identification and species identification will be provided in next year's report

#### 4.4 Analyses/development of techniques

Humpback whale population structure-ACAMMS. Through the isolation and characterization of SNPs (Single Nucleotide Polymorphisms), and the application of microsatellite loci, population substructure within breeding stocks D & E and also the distribution of these breeding stocks in Antarctic waters will be investigated.

Bottlenose and common dolphin genetic analyses-MnU. The samples collected during 2007 are in the process of being genetically processed and analysed. The DNA of these samples will be extracted and analysis will involve the mitochondrial DNA control region and cytochrome *b* will be sequenced and nuclear (microsatellite markers). Genetic data is being processed at Monash University.

Long finned pilot whale population and social dynamic of mass stranding-UoA. Oremus et al. (2008) investigated the diversity of mitochondrial (mt) DNA control region sequences (345 bp) and microsatellite alleles (n = 16 loci) of 227 long-finned pilot whale samples from five strandings around Tasmania between 2002 and 2006. In order to investigate regional population structure and social dynamic of mass stranding, these results were combined with previously analysed data from pilot whale mass strandings in New Zealand (n = 341). Kinship of individual pilot whales in two mass strandings from Tasmania (Marion Bay 2006, n = 145; Ocean Beach 2006, n = 27), for which position and age/sex class of each stranded whale was mapped along the shore was also investigated. In particular, the assumption commonly made during rescue attempts that social bonds are maintained during these events was tested using mtDNA haplotypes.

#### 5. POLLUTION STUDIES

Heavy metal and PCB levels in South Australia dolphins. Trish Lavery and Ikuko Tomo are conducting a study that examines the possible relationship between PCBs, heavy metals, bone structure and lung nematode infections. A total of 14 male dolphins (*T. aduncus* and *D. dephis*) were sampled. Twenty-one PCB 21 congeners, metal concentrations and bone histomorphometry were analysed. Preliminary analyses on the data have shown that there may be a strong correlation between PCBs and bone histomorphometry, such that high PCBs = loss of bone structure. T. Lavery and others have published a paper summarizing heavy metal levels in South Australian *Tursiops truncatus*, *T. aduncus* and *Delphinus delphis* (see published literature).

Persistent organic pollutants in southern ocean food webs- Dr. Susan Bengtson Nash & Courtney Waugh-UQ/EnTox. This research aims to examine levels of a persistent and toxic organochlorine (OC) compound found in humpback whales; examine the relationship between OC compound levels and migration-based weight (blubber) loss and; and examine the relationship between OC compound concentrations throughout different layers of blubber. Research methods involve the taking of deep-core biopsy samples from the dorsal surface of humpback whales and tissue and muscle samples (approximately 10cm x cm) from stranded whale carcasses.

Bottlenose dolphin stranding toxicology analysis-MnU. Blubber of bottlenose dolphin strandings are being processed at Monash University for toxicology analysis by Ms Alissa Monk (supervisor Dr Ross Thompson). Liver, kidney and blubber samples will be processed and analysed throughout 2008 at Monash University.

#### 6. STATISTICS FOR LARGE CETACEANS

##### 6.1 Corrections to earlier years' statistics for large whales

N/A

##### 6.2 Direct catches of large whales (commercial, aboriginal and scientific permits) for the calendar year 2007

N/A

### 6.3 Anthropogenic mortality of large whales for the calendar year 2007

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

Type of vessel: 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).

| Whale species                  | Sex | No. | Date                  | Location  | Vessel type | Speed  | Fate | How observed     | Contact person/ institute and refs |
|--------------------------------|-----|-----|-----------------------|---|-------------|--------|------|------------------|------------------------------------|
| Humpback whale (*1)            | U   | 1   | 2007                  | East Coast Tasmania                             | O           | U      | X    | DPIW-TAS         | R.Gales/DPIW-TAS                   |
| Humpback whale (*2)            | U   | 1   | 29 Aug 2007           | Whitsundays<br>20.3368°S<br>148.966°E           | Comm        | ~20kts | X    | Tourism operator | Col Limpus/EPA-QLD                 |
| Humpback whale cow & calf (*3) | F+U | 2   | 17 Sept 2007          | Near Dunk Island -<br>17.9177° S<br>146.1497° E |             |        | X    | Tourism operator | Col Limpus/EPA-QLD                 |
| Sperm whale (*4)               | U   | 1   | 12/8/07<br>first seen | 37° 56' S<br>140° 27' E                         | U           | U      | D    | Carcass photos   | C. Kemper/S.A. Museum              |

This list may include reports of probable ship strikes based on the sighting of scarring or wounds on live or stranded animals, rather than witnesses to the actual ship strike itself.

(\*1) Animal observed to have severe trauma from propeller strike. Unique marking, photos taken housed with R.Gales/DPIW-TAS

(\*2) Vessel operator collided with the whale and then spent ~10 minutes observing the animal. No visible injuries and no changes in behaviour of the animal. Animal observed to swim away displaying normal behaviour after the incident.

(\*3) Both mother and calf observed with propeller cuts. Both whale observed to swim normally irrespective of the injuries.

(\*4) The large gash on the back of this animal strongly suggested that it had been involved in a ship collision.

In addition, one anecdotal report of a fast ferry hitting and killing a humpback whale on the Northern Great Barrier Reef off QLD (near Fitzlin Island), was received. However this has not yet been confirmed and no further details are available at this time.

#### 6.3.2 Fishery bycatch of large whales

Indicate 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.). Please use the internationally recognised standard gear description codes from FAO, although more detail can be supplied if known. More detailed information and illustrations of the different types of fishing gear can be found on the FAO/FIGIS website<sup>1</sup>. Please also include any instances of entanglement in shark exclusion nets, which are another important source of bycatch. Please indicate 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.).

| Whale species              | Sex | No. | Date     | Location                                     | Fate | Targeted fish species | Gear | How observed? | Source or contact  |
|----------------------------|-----|-----|----------|--|------|-----------------------|------|---------------|--------------------|
| (*1) Humpback whale & calf | F+U | 2   | 14/08/07 | Mouth of the Russell River, south of Cairns  | R    |                       | GN   | Skipper       | Col Limpus/EPA-QLD |
| Humpback whale             | U   | 1   | 12/08/07 | Currumbin Beach, Gold Coast                  | R    | Shark                 | NSC  | F             | QDPI&F             |
| Humpback whale             | U   | 1   | 06/07    | 31:37:93; 115:21:66<br>Two Rocks             | R    | Western Rock Lobster  | FPO  | M             | D. Coughran, DEC   |
| Humpback whale             | U   | 1   | 11/07    | 32:29:727;<br>115:30:086<br>6nm off Mandurah | U    | Recreational          | MIS  | F             | D. Coughran, DEC   |

<sup>1</sup> [http://www.fao.org/figis/servlet/static?dom=root&xml=tech/gears\\_search.xml](http://www.fao.org/figis/servlet/static?dom=root&xml=tech/gears_search.xml)

|  |   |   |                                |  |       |              |     |             |                             |
|--|---|---|--------------------------------|--|-------|--------------|-----|-------------|-----------------------------|
| (*2) Humpback whale                          | U | 1 | 20/8/07                        | VIC- Oberon Bay, Wilson's Promontory         | U     | Rock Lobster | FPO | DA          | Mandy Watson, DSE, Victoria |
| Minke whale                                  | M | 1 | 2/07                           | 33° 34' S 115° 05' E Dunsborough             | I     | U            | MIS | M           | D. Coughran, DEC            |
| (*3) Right whale, Southern (with calf)       | F | 1 | 12/9/07                        | Cape Woolamai, Phillip Island, Victoria      | R     | Rock Lobster | FPO | DA          | Mandy Watson, DSE, Victoria |
| (*4) Sperm whale                             | F | 1 | 9/6/07<br>1 <sup>st</sup> seen | 34° 41' 15'' S<br>135° 19' 52'' E            | K & D | Unknown      | NK  | post mortem | C. Kemper/<br>S.A. Museum   |
| (*5) Sperm whale                             | M | 1 | 13/8/07<br>reported            | 35° 35' S<br>137° 26' E                      | K & D | Unknown      | LL  | post mortem | C. Kemper/<br>S.A. Museum   |
| (*7) Unid. large whale (possible humpback)   | U | 1 | 23/06/07                       | Whitsundays<br>19°36'985 S;<br>149°08' 595 E | U     | U            | U   | Skipper     | Col Limpus/EPA-QLD          |
| (*8) Unid. large whales (possible humpbacks) | U | 2 | 30/06/07                       | Cape Upstart area                            | U     | U            | U   | A (Public)  | Col Limpus/EPA-QLD          |
| (*9) Unid. large whale (possible humpback)   | U | 1 | 12/07/07                       | Near Hayman Island                           | U     | U            | U   | A (Public)  | Col Limpus/EPA-QLD          |

Comments:

(\*1) Both mother and calf caught in net but released unharmed.

(\*2) Last seen alive with entanglement

(\*3) Released in New South Wales 4/10/07

(\*4) Tail almost severed, probable entanglement

(\*5) Unknown cause of death - broken/missing mandible suggests longline entanglement

(\*6) Possible humpback whale. Whale observed with line and blue plastic drum attached wrapped around right fluke.

(\*7) Possible humpback whales. 2 whales reported with debris attached. Gear entangled described as "about 2.5-3m of 10-15mm rope (green or blue) trailing from right side of whale, appears to be embedded in back of the whale by about 6-8 inches". The second report also indicated rope embedded "by about 300mm in the back behind the dorsal fin, with a bundle of other rope trailing off the main rope"

(\*8) Possible humpback whale. The whale was entangled with a green nylon rope (diameter approx 13 mm) encircling its body just before the dorsal fin. The rope appeared to be causing the whale to have difficulty swimming.

## 7. STATISTICS FOR SMALL CETACEANS

### 7.1 Corrections to earlier years' statistics for small cetaceans

The following represent bycatch figures for all of 2006 from the Pilbara trawl fishery. In last year's report, only the 1<sup>st</sup> & 2<sup>nd</sup> quarters of 2006 were presented. Figures for 2007 are given below under 7.3.2 and indicate a continuing reduction in the level of bycatch with the use of exclusion devices.

| Species            | Sex                             | No.         | Date     | Location                | Fate                            | Targeted fish species | Gear | How observed? | Source or contact  |
|--------------------|---------------------------------|-------------|----------|-------------------------|---------------------------------|-----------------------|------|---------------|--|
| Bottlenose dolphin | 10M/<br>3F,<br>21<br>(27*)<br>U | 34<br>(40*) | 01-12/06 | ~18-20°S,<br>~116-120°E | 31D/<br>3A<br>(36D<br>/4A)<br>* | Multiple              | TX   | F/DA          | Commercial Fisheries Program<br>Department of Fisheries (WA)<br>168-170 St Georges Terrace,<br>Perth, WA, 6000 |

\* An additional 6 dolphins (5 presumed dead/ 1 alive) were observed to exit the net through the grid escape hole observed via video footage

## 7.2 Direct catches of small cetaceans for the calendar year 2007

NA

## 7.3 Anthropogenic mortality of small cetaceans for the calendar year 2007

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

None reported

### 7.3.2 Fishery bycatch of small cetaceans

| Species                         | Sex            | No. | Date                   | Location                   | Fate       | Targeted fish species       | Gear                      | How observed? | Source or contact   |
|---------------------------------|----------------|-----|------------------------|----------------------------|------------|-----------------------------|---------------------------|---------------|---|
| Bottlenose dolphin              | M/F            | 2   | 2007                   | Illawarra                  | Dead       | Sharks                      | NSC                       | Dead in net   | DPI-NSW   |
| Bottlenose dolphin              | M              | 1   | 27/04/07               | 16.80400°S<br>145.72900°E  | D          | Shark                       | NSC                       | F             | QDPI&F  |
| Bottlenose dolphin              | M              | 1   | 01/02/07               | 27.97343°S<br>153.43602°E  | D          | Shark                       | NSC                       | F             | QDPI&F  |
| Bottlenose dolphin              | F              | 1   | 23/06/07               | 26.40090°S<br>153.06860°E  | D          | Shark                       | NSC                       | F             | QDPI&F  |
| Bottlenose dolphin              | M              | 1   | 1/6/07<br>First seen   | 32°58'00"S<br>137°47'00" E | D          | Finfish                     | MIS<br>(aquaculture cage) | A             | C. Kemper/S.A. Museum   |
| Bottlenose dolphin              | F              | 1   | 7/4/07<br>reported     | 34°43'00" S<br>136°57'00"E | K          | Unknown                     | NK(*1)                    | post mortem   | C. Kemper/S.A. Museum   |
| Bottlenose dolphin              | 3M/2 F,<br>17U | 22  | 01-12/07               | ~18-20°S,<br>~116-120°E    | 19D,<br>3A | Multiple in Pilbara fishery | TX                        | F/DA          | Comm. Fisheries Prog./ Dept. of Fisheries (WA)<br>168-170 St Georges Terrace, Perth, WA, 6000 |
| Bottlenose dolphin, Indopacific | F              | 1   | 25/5/07<br>reported    | 35°06'53"S<br>137°45'25"E  | K          | Unknown                     | NK                        | post mortem   | C. Kemper/S.A. Museum   |
| Bottlenose dolphin, Indopacific | M              | 1   | 30/5/07<br>first seen  | 35°08'00"S<br>137°35'00"E  | K          | Unknown                     | NK                        | post mortem   | C. Kemper/S.A. Museum   |
| Bottlenose dolphin, Indopacific | M              | 1   | 23/9/07<br>first seen  | 35°13'25"S<br>138°28'00"E  | K          | Unknown                     | NK                        | post mortem   | C. Kemper/S.A. Museum   |
| Bottlenose dolphin, Indopacific | M              | 1   | 24/12/07<br>first seen | 34°27'52"S<br>138°15'40"E  | K          | Unknown                     | NK(*2)                    | post mortem   | C. Kemper/S.A. Museum   |
| Common dolphin                  | -              | 1   | 2007                   | Sydney North               | Dead       | Sharks                      | NSC                       | Dead in net   | DPI-NSW   |
| Common dolphin                  | F              | 1   | 01/12/07               | 16.80400°S<br>145.72900°E  | D          | Shark                       | NSC                       | F             | QDPI&F  |
| Common dolphin                  | F              | 1   | 14/02/07               | 27.1600°S<br>153.5017°E    | D          | Shark                       | NSC                       | F             | QDPI&F  |
| Common dolphin                  |                | 1   | 29/05/07               | 28.04984°S<br>153.27580°E  | D          | Shark                       | NSC                       | F             | QDPI&F  |
| Common dolphin                  | M              | 2   | 08/06/07               | 28.00167°S<br>153.43867°E  | D          | Shark                       | NSC                       | F             | QDPI&F  |
| Common dolphin                  | F              | 1   | 15/07/07               | 28.12732°S<br>153.49365°E  | D          | Shark                       | NSC                       | F             | QDPI&F  |
| Common dolphin                  |                | 1   | 25/07/07               | 27.96330°S<br>153.43577°E  | R          | Shark                       | NSC                       | F             | QDPI&F  |
| Common dolphin                  |                | 1   | 02/10/07               | 28.12732°S<br>153.49365°E  | D          | Shark                       | NSC                       | F             | QDPI&F  |
| Common dolphin                  |                | 1   | 15/11/07               | 28.15830°S<br>153.53807°E  | D          | Shark                       | NSC                       | F             | QDPI&F  |



|                              |           |   |                       |                            |   |                              |         |                               |                          |
|------------------------------|-----------|---|-----------------------|----------------------------|---|------------------------------|---------|-------------------------------|--------------------------|
| Common dolphin               |           | 1 | 23/03/07              | 25.89492°S<br>153.09541°E  | D | Shark                        | NSC     | F                             | QDPI&F                   |
| Common dolphin               |           | 1 | 14/10/07              | 25.89492°S<br>153.09541°E  | D | Shark                        | NSC     | F                             | QDPI&F                   |
| Common dolphin               | F         | 1 | 16/04/07              | 26.39390°S<br>153.06570°E  | D | Shark                        | NSC     | F                             | QDPI&F                   |
| Common dolphin               | F         | 1 | 05/10/07              | 26.22860°S<br>153.05710°E  | D | Shark                        | NSC     | F                             | QDPI&F                   |
| Common dolphin               | F         | 1 | 07/10/07              | 26.40640°S<br>153.07550°E  | D | Shark                        | NSC     | F                             | QDPI&F                   |
| Common dolphin               | F         | 1 | 14/2/07<br>first seen | 34°40' S<br>136°16' E      | K | Sardine/<br>Pilchard         | PS1/PS2 | DA (Derek<br>Hamer<br>/SARDI) | C. Kemper/S.A.<br>Museum |
| Common dolphin               | M         | 1 | 4/4/07<br>collected   | 34°48'42"S<br>136°19'45"E  | K | Sardine/<br>Pilchard         | PS1/PS2 | DA (Derek<br>Hamer<br>/SARDI) | C. Kemper/S.A.<br>Museum |
| Common dolphin               | M         | 1 | 10/4/07<br>first seen | 35°45' S<br>136° 20' E     | K | Sardine/<br>Pilchard         | PS1/PS2 | DA (Derek<br>Hamer<br>/SARDI) | C. Kemper/S.A.<br>Museum |
| Common dolphin               | F         | 1 | 10/4/07<br>collected  | 34° 46' S<br>136° 22' E    | K | Sardine/<br>Pilchard         | PS1/PS2 | DA (Derek<br>Hamer<br>/SARDI) | C. Kemper/S.A.<br>Museum |
| Common dolphin               | 1F&<br>1M | 2 | 10/5/07<br>collected  | 34° 47' S<br>136° 21' E    | K | Sardine/<br>Pilchard         | PS1/PS2 | DA (Derek<br>Hamer<br>/SARDI) | C. Kemper/S.A.<br>Museum |
| Common dolphin               | F         | 1 | 15/7/07<br>reported   | South<br>Australia         | K | Sardine/<br>Pilchard         | PS1/PS2 | DA (Derek<br>Hamer<br>/SARDI) | C. Kemper/S.A.<br>Museum |
| Common dolphin               | F         | 1 | 15/7/07<br>reported   | South<br>Australia         | K | Sardine/<br>Pilchard         | PS1/PS2 | DA (Derek<br>Hamer<br>/SARDI) | C. Kemper/S.A.<br>Museum |
| Common dolphin               | F         | 1 | 15/7/07<br>reported   | South<br>Australia         | K | Sardine/<br>Pilchard         | PS1/PS2 | DA (Derek<br>Hamer<br>/SARDI) | C. Kemper/S.A.<br>Museum |
| Common dolphin               | U<br>Calf | 1 | 2/04/07               | 35°04'S<br>117°58'E        | D | U (*3)                       | MIS     | F                             | D. Coughran,<br>DEC      |
| False Killer whale           | U         | 1 | 11/03                 | 17°25'S;<br>147°50'E       | R | Large tuna &<br>billfish sp. | LLD     | V                             | J. Johnston/<br>AFMA     |
| False killer whale           | F         | 1 | 2/04/07               | 35°03'S<br>117°55'E        | D | U (*4)                       | MIS     | M                             | D. Coughran,<br>DEC      |
| Indopacific humpback dolphin | F         | 1 | 04/05/07              | 23.15633°S<br>150.77151°E  | F | Shark                        | NSC     | F                             | QDPI&F                   |
| Indopacific humpback dolphin | F         | 1 | 04/07/07              | 16.75900°S<br>145.67500°E  | D | Shark                        | NSC     | F                             | QDPI&F                   |
| Irrawaddy dolphin            | F         | 1 | 12/09/07              | 16.76100°S<br>145.67218°E  | D | Shark                        | NSC     | F                             | QDPI&F                   |
| Irrawaddy dolphin            | M         | 1 | 06/06/07              | 26.22860°S<br>153.05710°E  | D | Shark                        | NSC     | F                             | QDPI&F                   |
| Pilot whale                  | U         | 1 | 15/05                 | 14°40'S;<br>145°56'E       | R | Large tuna &<br>billfish sp. | LLD     | V                             | J. Johnston/<br>AFMA     |
| Pilot whale                  | U         | 1 | 18/07                 | 27°16'S;<br>156°12'E       | R | Large tuna &<br>billfish sp. | LLD     | V                             | J. Johnston/<br>AFMA     |
| Short-finned pilot whale     | U         | 1 | 27/04                 | 26°46'S;<br>158°33'E       | R | Large tuna &<br>billfish sp. | LLD     | V, F                          | J. Johnston/<br>AFMA     |
| Sperm whale, pygmy           | F         | 1 | 22/8/07<br>first seen | 34°52' 18"S<br>135°49'36"E | K | Unknown                      | NK      | post mortem                   | C. Kemper/S.A.<br>Museum |
| Spinner dolphin              | F         | 1 | 02/06/07              | 28.02652°S<br>153.44108°E  | D | Shark                        | NSC     | F                             | QDPI&F                   |
| Unid. dolphin                |           | 1 | 26/08/07              | 25.89417°S<br>153.09700°E  | D | Shark                        | NSC     | F                             | QDPI&F                   |
| Unid. dolphin                | U         | 1 | 21/03                 | 30°10'S;<br>138°23'E       | D | Shark                        | GNS     | V                             | J. Johnston/<br>AFMA     |
| Unid. dolphin                | U         | 1 | 26/10                 | 33°19'S;<br>134°07'E       | D | Shark                        | GNS     | V                             | J. Johnston/<br>AFMA     |

|   |   |   |          |                           |   |                              |             |   |                      |
|---|---|---|----------|---------------------------|---|------------------------------|-------------|---|----------------------|
| Unid. dolphin   | U | 1 | 19/11    | 13°19'S;<br>136°41'E      | R | Prawns                       | TBB<br>/TMS | V | J. Johnston/<br>AFMA |
| Unid. dolphin   |   | 1 | 23/08/07 | 16.75900°S<br>145.67500°E | R | Shark                        | NSC         | F | QDPI&F               |
| Unid. dolphin   | U | 1 | 06/02    | 32°50'S;<br>134°10'E      | D | Shark                        | GNS         | V | J. Johnston/<br>AFMA |
| Unid. dolphins  | U | 2 | 13/05    | 38°34'S;<br>142°07'E      | D | Shark                        | GNS         | V | J. Johnston/<br>AFMA |
| Unid. Odontocete  | U | 1 | 26/03    | ?                         | R | Large tuna &<br>billfish sp. | LLD         | V | J. Johnston/<br>AFMA |
| Comments:<br>(*1) Cause of death unknown - trauma, possible entanglement<br>(*2) Cause of death unknown - possible entanglement<br>(*3) Entangled in fishing net. Drowned<br>(*4) Entangled in fishing line. Died |   |   |          |                           |   |                              |             |   |                      |

## 8. STRANDINGS

### New South Wales

NSW: NPWS – Contact Geoff Ross (Acting Manager, Wildlife Licensing and Management Unit, Reserve and Wildlife Conservation Branch, P.O. Box 1967, Hurstville NSW 1481) for information from the NPWS incident database. This includes the date, location, outcome, autopsy detail (when available) and contact personnel for 8 stranding events in NSW during 2006.

NSW: ORRCA - Contact Ronald Ling ([ronaldling@optusnet.com.au](mailto:ronaldling@optusnet.com.au)) for information on stranded cetaceans, entanglements, incidents and carcasses attended to by ORRCA.

NSW: SCUWRC - Contact Christine Fury (Southern Cross University Whale Research Centre, Southern Cross University, PO Box 157, Lismore, NSW, 2480) for information on stranded cetaceans in northern NSW, post-mortems are conducted and samples are routinely collected from almost all stranded animals and deposited in the Southern Cross University Museum.

Full necropsy and histopathology reports for all ARWH animals listed can be obtained by contacting the Australian Registry of Wildlife Health.

| Species                   | No. strandings | No. post mortems            | Contact person(s)/ Institute(s) | Contact email address(es)  |
|---------------------------|----------------|-----------------------------|---------------------------------|--|
| Humpback whale            | 1              | 0                           | Alicia Mallo PWF                | <a href="mailto:aliciamallo@hotmail.com">aliciamallo@hotmail.com</a> |
| Blainville's Beaked whale | 1              | 1 (conclusion boat strike)  | Jane Hall, ARWH                 | <a href="mailto:jhall@zoo.nsw.gov.au">jhall@zoo.nsw.gov.au</a>       |
| Common dolphin            | 1              | 1 (conclusion foreign body) | Jane Hall, ARWH                 | <a href="mailto:jhall@zoo.nsw.gov.au">jhall@zoo.nsw.gov.au</a>       |

### Northern Territory

Animal Rescue number is 08 89994536

Marine strandings – diverted through from Animal Rescue 08 89209219

### Queensland

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

Most records of individual strandings are supplied by QPWS 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)  |
|--------------------------|----------------|------------------|---------------------------------|--|
| Humpback whale           | 6              |                  | Col Limpus/EPA                  | <a href="mailto:col.limpus@epa.qld.gov.au">col.limpus@epa.qld.gov.au</a><br><a href="mailto:jenny.greenland@epa.qld.gov.au">jenny.greenland@epa.qld.gov.au</a> |
| Unidentified large whale | 5              |                  | Col Limpus/EPA                  | <a href="mailto:col.limpus@epa.qld.gov.au">col.limpus@epa.qld.gov.au</a><br><a href="mailto:jenny.greenland@epa.qld.gov.au">jenny.greenland@epa.qld.gov.au</a> |
| Bottlenose dolphin       | 12             | 2                | Col Limpus/EPA                  | <a href="mailto:col.limpus@epa.qld.gov.au">col.limpus@epa.qld.gov.au</a><br><a href="mailto:jenny.greenland@epa.qld.gov.au">jenny.greenland@epa.qld.gov.au</a> |
| Melon-headed whale       | 5              | 2                | Col Limpus/EPA                  | <a href="mailto:col.limpus@epa.qld.gov.au">col.limpus@epa.qld.gov.au</a><br><a href="mailto:jenny.greenland@epa.qld.gov.au">jenny.greenland@epa.qld.gov.au</a> |

|                               |   |  |                        |  |
|-------------------------------|---|--|------------------------|--|
| Sperm whale                   | 2 |  | Col Limpus/EPA         | <a href="mailto:col.limpus@epa.qld.gov.au">col.limpus@epa.qld.gov.au</a><br><a href="mailto:jenny.greenland@epa.qld.gov.au">jenny.greenland@epa.qld.gov.au</a> |
| Minke whale                   | 3 |  | Col Limpus/EPA         | <a href="mailto:col.limpus@epa.qld.gov.au">col.limpus@epa.qld.gov.au</a><br><a href="mailto:jenny.greenland@epa.qld.gov.au">jenny.greenland@epa.qld.gov.au</a> |
| Indo-Pacific humpback dolphin | 7 |  | Col Limpus/EPA         | <a href="mailto:col.limpus@epa.qld.gov.au">col.limpus@epa.qld.gov.au</a><br><a href="mailto:jenny.greenland@epa.qld.gov.au">jenny.greenland@epa.qld.gov.au</a> |
| Irrawaddy dolphin             | 2 |  | Col Limpus/EPA         | <a href="mailto:col.limpus@epa.qld.gov.au">col.limpus@epa.qld.gov.au</a><br><a href="mailto:jenny.greenland@epa.qld.gov.au">jenny.greenland@epa.qld.gov.au</a> |
| Dolphin sp.                   | 9 |  | Col Limpus/EPA         | <a href="mailto:col.limpus@epa.qld.gov.au">col.limpus@epa.qld.gov.au</a><br><a href="mailto:jenny.greenland@epa.qld.gov.au">jenny.greenland@epa.qld.gov.au</a> |
| Dwarf Minke whale             | 1 |  | Dr. Quincy Gibson, PWF | <a href="mailto:quincy@pacificwhale.org">quincy@pacificwhale.org</a>   |

### South Australia

The South Australian Museum and Department for Environment and Heritage SA have a programme of reporting and collecting as many dead cetaceans as possible from South Australia. In the past year or so the effort has been somewhat scaled back (because of lack of resources) to put more emphasis on Gulf St Vincent. However, rare and important specimens are still collected from other parts of the State. The Dolphin Trauma Group, PIRSA Fisheries, volunteers, students, and members of the public are important contributors to the programme.

| Species                          | No. strandings | No. post mortems | Contact person(s)/ Institute(s) | Contact email address(es) |
|----------------------------------|----------------|------------------|---------------------------------|---------------------------|
| Antarctic minke whale            | 1              | 0                | C. Kemper/S.A. Museum           |                           |
| Beaked whale                     | 3              | 0                | C. Kemper/S.A. Museum           |                           |
| Blue whale                       | 1              | 0                | C. Kemper/S.A. Museum           |                           |
| Bottlenose dolphin               | 5              | 2                | C. Kemper/S.A. Museum           |                           |
| Bottlenose dolphin, common       | 2              | 2                | C. Kemper/S.A. Museum           |                           |
| Bottlenose dolphin, Indo-pacific | 14             | 9                | C. Kemper/S.A. Museum           |                           |
| Common dolphin                   | 27             | 13               | C. Kemper/S.A. Museum           |                           |
| Pilot whale                      | 2              | 0                | C. Kemper/S.A. Museum           |                           |
| Right whale, pygmy               | 1              | 0                | C. Kemper/S.A. Museum           |                           |
| Sperm whale                      | 6              | 1                | C. Kemper/S.A. Museum           |                           |
| Sperm whale, pygmy               | 1              | 1                | C. Kemper/S.A. Museum           |                           |
| Unid. dolphin                    | 13             | 0                | C. Kemper/S.A. Museum           |                           |
| Unid. small whale                | 1              | 0                | C. Kemper/S.A. Museum           |                           |

### Tasmania

Cetacean strandings in Tasmania are managed jointly by the Biodiversity Conservation Branch, DPIW-TAS and the Tasmanian Parks and Wildlife Service. Due to the abundance of marine mammals a dedicated 24 hr hotline is manned by marine biologists as a means of reporting sightings, strandings and entanglements of marine mammals. The Whale Hotline (0427WHALES) is the first point of contact when reporting marine mammal incidences and operates throughout Tasmania all year round. The Department of Primary Industries and Water house detailed in house stranding reports of each incident. Please contact Rosemary Gales ([Rosemary.gales@dpiw.tas.gov.au](mailto:Rosemary.gales@dpiw.tas.gov.au)) for further details.

| Species                 | No. strandings | No. post mortems | Contact person(s)/ Institute(s) | Contact email address(es)  |
|-------------------------|----------------|------------------|---------------------------------|--|
| Common dolphins         | 5              | 9                | R.Gales/DPIW-TAS                | <a href="mailto:Rosemary.gales@dpiw.tas.gov.au">Rosemary.gales@dpiw.tas.gov.au</a> |
| Long finned pilot whale | 1              | 1                | R.Gales/DPIW-TAS                | <a href="mailto:Rosemary.gales@dpiw.tas.gov.au">Rosemary.gales@dpiw.tas.gov.au</a> |
| Right whale, pygmy      | 1              | 1                | R.Gales/DPIW-TAS                | <a href="mailto:Rosemary.gales@dpiw.tas.gov.au">Rosemary.gales@dpiw.tas.gov.au</a> |
| Sperm whales            | 2              | 5                | R.Gales/DPIW-TAS                | <a href="mailto:Rosemary.gales@dpiw.tas.gov.au">Rosemary.gales@dpiw.tas.gov.au</a> |
| Unknown Ziphiid (a)     | 1              | 1                | R.Gales/DPIW-TAS                | <a href="mailto:Rosemary.gales@dpiw.tas.gov.au">Rosemary.gales@dpiw.tas.gov.au</a> |
| Unknown Ziphiid (b)     | 1              | 1                | R.Gales/DPIW-TAS                | <a href="mailto:Rosemary.gales@dpiw.tas.gov.au">Rosemary.gales@dpiw.tas.gov.au</a> |

### Victoria:

DSE-VIC receives opportunistic reporting of strandings. Strandings along the Victorian coastline were attended by Kate Charlton (Monash University), David Donnelly (DRI) and members representing Victorian Strandings Network, Zoos Victoria and the Melbourne Museum. Specimens (skulls) collected will be incorporated into the Melbourne Museum IWC report.

| Species            | No. strandings | No. post mortems             | Contact person(s)/ Institute(s) | Contact email address(es)       |
|--------------------|----------------|------------------------------|---------------------------------|---------------------------------|
| Bottlenose dolphin | 7              | 7 (gross post mortems only)  | Kate Charlton/MnU               | Kate.charlton@sci.monash.edu.au |
| Common dolphin     | 11             | 11 (gross post mortems only) | Kate Charlton/MnU               | Kate.charlton@sci.monash.edu.au |
| Sperm whale        | 1              | 0                            | Mandy Watson, DSE, Victoria     | mandy.watson@dse.vic.gov.au     |

### Western Australia

Opportunistic stranding reports are received by DEC offices from staff members and members of the public. Wherever possible a site visit is arranged to assist the animal to return to sea, to confirm identification and to determine the cause of death (if applicable). Stranding reports are entered into a centralised database once identification has been confirmed. Identification is undertaken by experienced staff in person if possible. If not possible, then less experienced observers are requested to provide photographs, measurements, teeth counts and/or DNA.

| Species                  | No. strandings     | No. post mortems | Contact person(s)/ Institute(s) | Contact email address(es)  |
|--------------------------|--------------------|------------------|---------------------------------|--|
| Bottlenose dolphin       | 13                 | 1                | D. Coughran, DEC                | <a href="mailto:doug.coughran@dec.wa.gov.au">doug.coughran@dec.wa.gov.au</a> |
| Bottlenose dolphin       | 3 (2 dead, 1 live) | 2                | Dr Lars Bejder MU-CRU           | <a href="mailto:l.bejder@murdoch.edu.au">l.bejder@murdoch.edu.au</a>         |
| Bryde's whale            | 1                  |                  | D. Coughran, DEC                | <a href="mailto:doug.coughran@dec.wa.gov.au">doug.coughran@dec.wa.gov.au</a> |
| Common dolphin           | 1                  |                  | D. Coughran, DEC                | <a href="mailto:doug.coughran@dec.wa.gov.au">doug.coughran@dec.wa.gov.au</a> |
| False killer whale       | 1                  |                  | D. Coughran, DEC                | <a href="mailto:doug.coughran@dec.wa.gov.au">doug.coughran@dec.wa.gov.au</a> |
| Humpback whale           | 5                  |                  | D. Coughran, DEC                | <a href="mailto:doug.coughran@dec.wa.gov.au">doug.coughran@dec.wa.gov.au</a> |
| Minke whale, common      | 2                  | 1                | D. Coughran, DEC                | <a href="mailto:doug.coughran@dec.wa.gov.au">doug.coughran@dec.wa.gov.au</a> |
| Pilot whale, long-finned | 1                  |                  | D. Coughran, DEC                | <a href="mailto:doug.coughran@dec.wa.gov.au">doug.coughran@dec.wa.gov.au</a> |
| Right whale, pygmy       | 1                  |                  | D. Coughran, DEC                | <a href="mailto:doug.coughran@dec.wa.gov.au">doug.coughran@dec.wa.gov.au</a> |
| Sperm whale              | 1                  | 1                | D. Coughran, DEC                | <a href="mailto:doug.coughran@dec.wa.gov.au">doug.coughran@dec.wa.gov.au</a> |

## 9. OTHER STUDIES AND ANALYSES

**Acoustic surveys of Tasmanian & Southern Ocean waters— J. Gedamke, ACAMMS:** Three acoustic loggers were deployed in January- March 2007 along a line of longitude south of Tasmania to offshore of Dumont D'Urville, on the Antarctic Continent. They will be recovered in January-March 2009 supplying a year-long record of underwater sound (>2000 Hz). This is the 2<sup>nd</sup> year long deployment of acoustic loggers in these locations. These will be analysed to determine the seasonal presence of blue and fin whales and compared with data collected from the Cape Leeuwin hydrophone array for Comprehensive Nuclear Test Ban Treaty Organization as well as prior deployments of acoustic recorders off Antarctica, Tasmania. All three instruments were recovered after sampling (<2000Hz) approximately a year of data (15 minutes recorded every hour) and will allow assessment of seasonal presence of vocal whales and seals along this large north-south transect.

**Assessing interactions between dolphins, and fishing and aquaculture in Spencer Gulf, SA- Harcourt and Kemper:** Kirsten Bilgmann has been awarded her PhD on the genetics of dolphins in the region. Sue Gibbs is expected to submit her thesis during 2008 on diet (including isotope concentrations in teeth) and species' ecology in Spencer Gulf.

**Beaked whale conservation genetics and molecular systematics- Dalebout/UNSW:-** M. L. Dalebout (UNSW) continued her research on various aspects of beaked whale conservation genetics and molecular systematics. For the genus *Mesoplodon*, the comprehensive reference database of mitochondrial (mt) DNA sequences (control region and cytochrome *b*) compiled for DNA taxonomy, to assist with species identification in this poorly known

group (Baker *et al.* 2003; Ross *et al.* 2003; Dalebout *et al.* 2004), was expanded to include multiple representatives for each species (Dalebout *et al.* 2007). Phylogenetic analysis of these data revealed a divergent genetic lineage related to *M. ginkgodens* (ginkgo-toothed beaked whale), which may represent a previously-unrecognised species in the tropical Indo-Pacific (Dalebout *et al.* 2007). Molecular and morphological work is ongoing to determine the taxonomic status of the specimens concerned. This expanded mtDNA database was also used to determine the species identity of a juvenile *M. ginkgodens* confiscated from a Chinese (Taiwan)-registered longline fishing vessel docked in Guam (Dalebout *et al.* in press). The whale was apparently caught in the waters of the Federated States of Micronesia. For *Ziphius cavirostris* (Cuvier's beaked whale), a study is underway to expand on the work of Dalebout *et al.* (2005) in which strong phylogeographic patterns were found among mtDNA lineages at the ocean basin level. The present study will use mtDNA markers to look at regional population structuring in this species and aims to identify appropriate units for conservation. In collaboration with museums, universities, stranding networks, and other organisations worldwide, over 500 specimens representing populations throughout the distribution have been sampled (approx. 75% osteological material). DNA extraction and analysis of these samples is in progress.

**Bottlenose dolphin research in 2007- MU-CRU:** Murdoch University has launched a Cetacean Research Unit. The majority of the group's research is currently focussed on bottlenose dolphins (*Tursiops* spp.) in Western Australia. The dolphins of Bunbury, south-western Australia, are a focal population in our research. The overall aim is to assess the long-term viability of the dolphin population by building an understanding of their biology and ecology, including gene flow with other geographic areas and interactions with the environment, food resources and human activities (tourism, port activities and port development).

Four synergistic research projects in the Bunbury region are contributing to achieving this overall aim: 1) Document abundance, habitat use and the effects of tourism and port development on dolphins (PhD candidate Ms Holly Smith); 2) Investigate the factors affecting the distribution of dolphin prey species (PhD candidate Ms Shannon McCluskey); 3) Investigate the population and conservation genetics of dolphins in Albany, Augusta, Busselton, Bunbury (PhD candidate Ms Anna Sellas); and 4) Evaluate the viability of the local dolphin population using models and results from Projects 1-3 (PhD student TBA). At a different location (Shark Bay, WA), honour's student (Mr Julian Tyne) is exploring possible correlations between the location of the sponge-carrying dolphins and the density and distribution of marine sponges along transect lines in the western gulf of Shark Bay

Research Associate (Simon Allen) conducted two short contracts in 2007: Designing a dolphin monitoring program to assess the impacts of pearl oyster aquaculture in Port Stephens (New South Wales); and, Reviewing dolphin by-catch in the Pilbara Trawl Fishery. Furthermore, MU-CRU collaborated with Danish acousticians to estimate acoustic masking of vessel noise and its effects on the maximum communication range for bottlenose dolphins inhabiting the shallow Bunbury environment with high background noise.

**Bottlenose dolphin studies, WA:**

- Dr J. Mann Behaviour and communication in bottlenose dolphins in Shark Bay
- Dr M. Krutzen Genetic study of bottlenose dolphins along WA coastline (PhD completed)
- Dr. B. Sherwin Genetic study of bottlenose dolphins.
- H. Smith Habitat utilisation by bottlenose dolphins, Bunbury, WA. PhD project.

**Cause/circumstance of death of SA cetaceans- Kemper, Tomo, and Byard, SA Museum:** The Dolphin Trauma Group continues to study dead dolphins from the whole of Gulf St Vincent and upper Spencer Gulf, with carcasses coming from other regions when resources are available. The focus on Gulf St Vincent will contribute to management of *T. aduncus* in the Adelaide Dolphin Sanctuary.

Data from upper Spencer Gulf shows that there has been a dramatic increase in *T. aduncus* entanglements since about 2001. Most go unreported but are detected by necropsy by the SA Museum. There is an urgent need for an investigation into the issue.

Further progress has been made on the study of lung parasites in South Australian dolphins. Ikuko Tomo and Catherine Kemper presented a poster at the Society for Marine Mammalogy meeting in Cape Town on a new method of determining the severity of the pathology associated with lungworm burdens. During necropsy, light-coloured nodules created by nematodes were visible on the lung surface. In fixed lungs, these varied from 0–26 per lung. Lungs were rated according to severity of infection: mild 0–5 nodules, moderate 6–10, serious  $\geq 11$ . Nematodes were found in trachea, bronchi and alveoli. The percentage of the area of lung parenchyma affected by nematodes was significantly related to nodule count (Spearman's Rho). There was no significant difference between left and right lung (Mann-Whitney U). Microscopic examination of nodules showed a range of stages of infection: 1) whole nematodes, 2) degenerating nematodes and 3) scar tissue only. All three stages showed infiltration by inflammatory cells with well-developed connective tissue in the latter stage. There was a tendency for acute stages to be found in calves/juveniles whereas longer-term cases (i.e. chronic) were found in

subadults/adults. This study demonstrates that the severity of nematode infection can be determined by gross examination at the time of necropsy.

**Dolphin and seal interactions with mid-water trawling in the Commonwealth Small Pelagic Fishery, including an assessment of bycatch mitigation- AFMA:** A study was conducted with 98 fishing shots where a camera was successfully used. There were no dolphin interactions during the period of the study. The report is being finalised and will be available when finished.

**Genetic differentiation of long-finned pilot whales of Tasmania & New Zealand-R Constantine UoA:** Oremus et al. (2008) investigated the diversity of mitochondrial (mt) DNA control region sequences (345 bp) and microsatellite alleles ( $n = 16$  loci) of 227 long-finned pilot whale samples from five strandings around Tasmania between 2002 and 2006. Analysis of mtDNA showed strong differentiation between New Zealand and Tasmania ( $F_{ST} = 0.45$ ), as well as between east and west Tasmania (mtDNA,  $F_{ST} = 0.32$ ), indicating highly restricted female gene flow. Significant but much weaker differentiation was also found for the nuclear microsatellite loci ( $F_{ST} = 0.0084$ ), suggesting some degree of male-mediated gene flow. Despite the evidence for male-mediated gene flow, no direct evidence for male-biased dispersal between the New Zealand and Tasmanian populations was found. These analyses suggest that mating occurs during occasional contact between social groups that otherwise show strong matrilineal social organisation and maternal fidelity to regional populations, the spatial boundaries of which are unknown. The strong differentiation of mtDNA between strandings from New Zealand and Tasmania, as well as between the east and west coasts of Tasmania, provides new evidence that each of these populations represent independent genetic management units. The analysis of kinship within Tasmanian mass strandings confirms previous analysis from New Zealand, suggesting that social disruption is common during these events. This disruption of kinship bonds could help to explain the behavioural distress of stranded individuals and the tendency of many whales to re-strand after being re-floated. These results have implications for management and animal welfare of mass strandings, particularly efforts to unite mother-calf pairs during rescue attempts. Our understanding of population structure and social organisation of long-finned pilot whales would be improved by collection of genetic samples from social groups at sea, as well as by satellite tagging of rescued individuals and diet analysis from stomach contents or by stable isotopes.

**Humpback whale acoustic studies-UOCEAL:** Collection of east Australian humpback whale song continued in 2007 with the deployment of an autonomous recorder. This has yet to be retrieved, but data recovered will be used to help develop effective acoustic survey techniques for humpback whales.

Recordings of humpback whale songs were collected in east Australia, New Caledonia, Tonga, the Cook Islands and French Polynesia as part of a study on the dynamic transmission of changes song patterns through breeding stocks E and F. The results of this study will be used to infer dispersal patterns throughout the region and compared with those obtained using photo-ID and genetics to better inform metapopulation modelling.

**Identifying *Tursiops* spp. using pigmentation patterns- Kemper, SA Museum:** This study has not progressed beyond the draft manuscript stage.

**Investigating dolphin mortality in the South Australian Sardine Fishery- Hamer, Tomo, Kemper and Gibbs:** This project is assessing the injuries and biology of dolphins that have died in the fishery and been collected for necropsy ( $n = 17$ ). It will provide a forensic validation of known cause of death (e.g. entanglement in purse seine fishery) that can be used to establish cause of death for dolphin carcasses washed up in South Australia. This may give a more realistic minimum mortality rate associated with the industry.

**National Centre for Aging Marine Mammals- SA Museum:** The South Australian Museum (funded by ACCAMS) has set up a laboratory to age cetaceans and pinnipeds using teeth. A workshop was run at the Museum during August 2007 at which seven participants from Australia learned the specialised techniques of preparing and interpreting tooth sections.

An international student (Elena Trentin, Istituto di Biologia e Genetica Università Politecnica delle Marche, Italy) has begun a project to age *T. aduncus* from South Australia. It is envisaged that 80-100 animals will be studied. Special attention will be paid to dolphins in the Adelaide region (some of which are known-age) and to males so that the age at sexual maturity can be determined.

**National Whale and Dolphin Database- ACAMMS:** ACAMMS is currently developing a National Whale and Dolphin Database. Initially it will hold survey data (e.g. from seismic vessels), individual identification data and opportunistic sighting data with additional modules being developed in consultation with government, industry and the scientific community. The survey based component is currently being trialled with industry and work is commencing on the individual component. A steering committee has been established for its development.

**Oceanographic influences on the distribution of pygmy right whales- Kemper, Middleton and Van Ruth, SA Museum:** A 4-year pattern of *C. marginata* records from Australia and New Zealand was identified, with peaks generally in summer (November–April). This appeared to be related to cycles in the Antarctic Circumpolar Wave and El Nino index. In the eastern Great Australian Bight, El Nino enhances shelf upwelling during summer and may drive high levels of primary productivity. Likely flow-on effects include more zooplankton food resources for baleen whales. The region incorporated 72% of mainland Australian records of *C. marginata*, including sightings for up to 6 weeks in shallow, protected bays. Some observations in coastal waters have described behaviour consistent with surface feeding.

A pilot study relating whale presence/absence to bio-oceanographic data from shelf waters south of Eyre Peninsula was conducted during 2004–2006. *Caperea marginata* was present when productivity signals were strong but absent when these were weak. If such a pattern holds for other areas of southern Australia, it may be possible to predict whale presence and the optimal time to conduct sighting surveys. At present, knowledge of the distribution of this little-known baleen whale is primarily limited to strandings.

**Physical condition of blue whales- BWS:** During suction-cup tagging studies in March 2007, P. Gill and M. Morrice (BWS & DU), J. Calambokidis and G. Schorr (Cascadia Research) documented blue whales in low physical condition. These whales (approx. 3 ind.) showed evidence of emaciation (from advice by J. Calambokidis using IWC guidelines of protruding vertebrae, scapula and ribs), skin lesions and some were heavily parasitized. This has been reported and photographs provided to Bob Brownell including discussion about similarities to whales off southern Chile. This demonstrates the importance of routinely documenting whale condition as part of our photo-ID cataloguing system.

**Relatedness, affiliations and social network in female bottlenose dolphins, Shark Bay, Western Australia- C. H. Frère/UNSW:** PhD dissertation is due for completion in August 2008. W. B. Sherwin (UNSW) is the principle supervisor. Focusing on female-female association patterns, over 17 years of group composition, behavioural data, and genetic information from both maternally and bi-parentally inherited markers have been analysed to investigate the complex socioecological interactions that occur in this wild population of bottlenose dolphins (*Tursiops* sp.).

**Relatedness of humpback dolphins- C.H. Frère/UNSW:** Work from Frère's BSc Honours thesis (Frère 2002; University of Queensland) on the phylogenetic relationships among humpback dolphins (*Sousa* spp.) was also recently accepted for publication (Frère et al. in press). MtDNA control region sequences (338 base pairs) were generated from 72 humpback dolphins representing three populations in the Indo-Pacific (South Africa – *S. plumbea*, n = 23; China – *S. chinensis*, n = 19; and, Australia – *S. chinensis*, n = 28), and *S. teuszii* in the Atlantic (Mauritania, n = 2). All three Indo-Pacific populations formed robust, monophyletic clades with high bootstrap and Bayesian posterior probability scores. Surprisingly, humpback dolphins from South Africa and China formed a strongly-supported clade with the Atlantic *S. teuszii*, to the exclusion of animals from Australia. Genetic divergence between animals from China and Australia was greater than between China and South Africa. These results strongly suggest that Australian humpback dolphins are not *S. chinensis* but may represent a distinct species or subspecies in their own right (Frère et al. in press.).

**Sperm whale tooth aging-UTAS:** Teeth derived from stranded sperm whales were assessed for their ability to represent time series of growth in individuals. The influence of environmental and life history factors on growth were then assessed in an effort to better understand influences on growth and foraging success in this species in the southern Australian region.

**Stranded cetacean tooth aging- DPIW-TAS:** Teeth derived from stranded cetaceans are currently being aged using the acid etching technique, by DPIW-TAS staff. A further 8 sperm whale individuals stranded on Tasmanian beaches were aged using the acid etching of the teeth dentine to determine annual growth layer groups. Ages ranged from 16 to 31 and included animals from two separate stranding events. The total number of individuals aged using this technique in the past two years is 31. A total of 23 long finned pilot whale individuals from a mass stranding on Ocean Beach (2006) on Tasmania's West Coast have been aged using stained thin sections of teeth dentine. Teeth from a further 130 individuals represented from a mass stranding on Marion Bay (2005), are being processed for this analysis to be performed. Further outcomes of the project will be included in subsequent reports.

**Stranded cetacean diet-DPIW-TAS:** The analyses of the diet of stranded cetaceans through the identification of squid beaks and fish otoliths is currently being processed. The project is expected to be completed mid 2008 and will be reported on in the following activity report.

**Stranded cetacean stable isotope & fatty acid analysis-CSIRO:** Tissues derived from Tasmanian stranded cetaceans have been sub-sampled from long-finned pilot whales and sperm whales and a variety of beaked whale

species. Skin from all species have been sampled, freeze-dried and ground for stable isotope analysis. Stable isotope analysis will be compared to fatty acid analyses. Pilot whales: Results will then be analysed in relation to ontogenetic changes in trophic level as well as any temporal or geographic differences in foraging patterns. Sperm whales: Sperm whale samples have been obtained from strandings of both male and female pods since 2002 to enable spatial, temporal and gender comparisons. Fatty acid analysis has been undertaken for all sperm whales and will be compared with stable isotope analysis to better understand the trophic feeding ecology of sperm whales around Tasmania. Beaked whales: Samples were obtained for ten beaked whales representing four different species. As the feeding habits of these whales are virtually unknown, this information will provide novel and extremely significant information. Total lipid, lipid class and fatty acid analysis has been undertaken on all specimens to determine the level of stratification and potential differences between species in relation to feeding ecology. Prey species: Potential prey species of fish and squid have also been obtained and prepared for stable isotope analysis. Fatty acid profiles are yet to be undertaken. When complete they will be compared to the stable isotope and fatty acid profiles of the beaked whales, sperm whales and pilot whales. Results from this project will be reported in subsequent activity reports.

#### **Summary of cetacean permits current in 2007- GBRMPA:**

- six 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.
  - Distribution and abundance of the Australian snubfin dolphins (*Orcaella heinsohni*) and Indo-Pacific humpback dolphins (*Sousa chinensis*) in the southern Great Barrier Reef – permit expires 30 April 2008.
  - Conserving Australia's endemic dolphins in the Great Barrier Reef Marine Park.
  - Taxonomic status and phylogeographical population structure of inshore.
  - Conservation genetics of three species of cetaceans: Australian snubfin, Indo-Pacific humpback dolphins and Bottlenose dolphins in northeast Queensland.
- A fifth Dwarf Minke Whale Tourism Monitoring Program Research Contract began in the 2007 dwarf minke whale season (June-August).

#### **Summary of cetacean permits current in 2007- Cleveland OPWS:**

- Status of spinner and bottlenose dolphins in SE Qld waters.- Simon Allen (MqU) The purpose of this research is to document the existence and range of spinner and bottlenose dolphins in coastal waters, and further knowledge of inter-specific associations of delphinids in the marine environment. Research methods involve taking biopsy samples for DNA extraction and photographic identification
- Acoustic and surface behaviour of coastal dolphins in Queensland- Alvare Berg (UQ): The research aims to investigate schooling dynamics, social structure and spatial-use patterns; the relationship between the acoustic and surface behaviour of each species; and the response of dolphins to acoustic stimuli including acoustic alarms (pingers) used to reduce by-catch in gill nets and acoustic modems used by marine scientists. Research methods involve land based photographic identification and video monitoring and deployment of acoustic alarms and acoustic modems.
- Population genetics of provisioned and non provisioned bottlenose (Turiops spp.) dolphins in Moreton Bay Marine Park.- Dr. David Neil (UQ): The research aims to investigate the genetic relationships within the provisioned dolphin sub-population and the relationship of that sub population to the wider Moreton Bay dolphin population. Research methods involve taking of skin-swab genetic samples from provisioned dolphins at Tangalooma resort; taking of biopsy samples from non-provisioned dolphins using PAXARMS biopsy method and photographic identification
- Ecology and population genetics of Australian humpback (Sousa chinensis) and bottlenose (Turiops spp.) dolphins in Moreton Bay Marine Park- Dr Guido Parra (UQCEAL): Also see Section 2.1.1 This research aims to: investigate documenting ecology and population genetics of Moreton Bay dolphin populations; provide information on population sizes, inter- and intra specific relationships; and provide information on delphinid diet compositions, feeding behaviours and trophic level. Research methods involve Taking biopsy samples for DNA analysis photographic identification.

**Trials to prevent dolphin depredation of drumline baits - ODPI & F:** Natural and artificial baits continue to be trialled in an effort to reduce scavenging of baits by dolphins. Dolphins in some locations have become adept at removing baits, (particularly mullet) from drumlines, thus rendering them ineffective at catching sharks (although dolphins are rarely caught on drumlines). Similarly, chicken frames were not often scavenged by dolphins but to date insufficient catches of sharks have precluded any statistically conclusive results to be derived for baits based on poultry. Two modifications to baited drumlines have also proved effective at reducing scavenging by dolphins. These were placing trawl mesh over baited hooks, and covering baited hooks with a shroud made from plastic drink containers. These modifications reduced scavenging by 84% and 92% respectively although there was evidence that some individual dolphins had learned to remove baits from these



modified rigs. Trials with other artificial baits and various lures are ongoing with inconsistent results being recorded and to date no statistically significant results have been obtained for artificial baits and baits based on tuna derivatives. Other modified configurations of drumlines have been trialled including use of stainless steel traces rather than chain traces, but all were rejected due to lack of statistical differences in catches, work place health and safety issues or other logistical concerns

The QSCP has begun trials at 5 locations in southern and central Queensland in February 2008 to compare the efficacy of single frequency versus multi frequency pingers in an effort to reduce dolphin entanglement in nets.

**Whale Disentanglement- DEWHA:** The Department of the Environment and Water Resources hosted the fifth Disentanglement Workshop in Hobart in April 2007, in conjunction with the Tasmanian Department for Primary Industries and Water. The workshop consisted of one day of theory and one day of intensive practical training on the water, specifically focused on training Australian and State Government employees. Mr Scott Landry from the Provincetown Centre for Coastal Studies (CCS) in the United States, a world leader in this field, presented information on the CCS' experiences in large whale disentanglements. Mr Doug Coughran, one of Australia's leading experts on large whale disentanglements from the Western Australian Department of Environment and Conservation, also contributed to the workshop, presenting information on disentangling whales and training people in practical exercises. More than 45 representatives from Queensland, New South Wales, Victoria, South Australia and West Australian Government agencies attended the workshop.

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