

**IRELAND. PROGRESS REPORT ON CETACEAN RESEARCH, JUNE 2005 TO JUNE 2006, WITH
STATISTICAL DATA FOR THE CALENDAR YEAR 2005**

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This report summarises information obtained from: Bord Iascaigh Mhara (BIM), Environment & Heritage Service Northern Ireland (EHS), Galway Mayo Institute of Technology (GMIT), Irish Whale and Dolphin Group (IWDG), National Museum of Scotland (NMS), National Parks & Wildlife Service (NPWS), Natural History Museum of Ireland (NHM), Sea Mammal Research Unit (SMRU), Shannon Dolphin and Wildlife Foundation (SDWF), University of Aberdeen, Department of Zoology (UADZ), University College, Cork (UCC), University College, Dublin (UCD), University of Exeter (UE).

1. Species and stocks studied

Most species that occur in the waters around Ireland were studied to some extent.

Common name	IWC recommended scientific	Area/stock(s)	Items referred to
Harbour porpoise	<i>Phocoena phocoena</i>	N.E Atlantic	2.1.1, 2.1.2, 7.3.3, 8
Common dolphin	<i>Delphinus delphis</i>	N.E Atlantic	2.1.1, 2.1.2, 3.1.1, 8
Bottlenose dolphin	<i>Tursiops truncatus</i>	N.E Atlantic	2.1.1, 3.1.2, 3.1.1, 3.2, 4.1, 8
Striped dolphin	<i>Stenella coeruleoalba</i>	N.E Atlantic	2.1.1, 2.1.2, 8
Atlantic white-sided dolphin	<i>Lagenorhynchus acutus</i>	N.E Atlantic	2.1.1, 2.1.2, 8
White-beaked dolphin	<i>L. albirostris</i>	N.E Atlantic	2.1.1, 2.1.2, 8
Risso's dolphin	<i>Grampus griseus</i>	N.E Atlantic	2.1.1, 2.1.2, 8
Pilot whale	<i>Globicephala melas</i>	N.E Atlantic	2.1.1, 2.1.2, 8
Killer whale	<i>Orcinus orca</i>	N.E Atlantic	2.1.1, 2.1.2
Cuvier's beaked whale	<i>Ziphius cavirostris</i>	N.E Atlantic	4.3, 8
Northern bottlenose whale	<i>Hyperoodon ampullatus</i>	N.E Atlantic	2.1.2, 4.3, 8
Pygmy sperm whale	<i>Kogia breviceps</i>	N.E Atlantic	4.3, 8
Sperm whale	<i>Physeter macrocephalus</i>	N.E Atlantic	4.3, 8
Minke whale	<i>Balaenoptera acutorostrata</i>	N.E Atlantic	2.1.1, 2.1.2, 8
Fin whale	<i>Balaenoptera physalus</i>	N.E Atlantic	2.1.1, 2.1.2, 3.1.1, 4.3, 8
Humpback whale	<i>Megaptera novaeangliae</i>	N.E Atlantic	2.1.1, 2.1.2, 3.1.1, 3.2

2. Sightings data

2.1 Field work

2.1.1 SYSTEMATIC

As part of the SCANS II survey, waters around Ireland were surveyed using systematic boat and plane surveys (SMRU, UCC, NPWS). The Irish Sea and waters to the west of Ireland were surveyed for the first time. Cliff based land-watches and acoustic monitoring using T-PODS was carried out in Broadhaven Bay, Co. Mayo to examine the distribution of marine mammals close to an area of proposed construction of a gas pipeline (UCC). Six cetacean species were recorded during this survey, namely; minke whale, killer whale, Risso's dolphin, bottlenose dolphin, short-beaked common dolphin and harbour porpoise. Harbour porpoises were regularly detected during the entire survey period and dolphin species occasionally (Englund *et al.*, 2006).

As part of an NPWS funded MSc designed to meet the requirements for designation, monitoring and maintenance of populations within Galway Bay and North Connemara, GMIT began conducting quantified effort land-based visual surveying from six shore sites around Galway Bay in March 2005, and from five shore sites in North Connemara in May. Land-based watches were carried out twice monthly in Galway Bay and once per month in North Connemara. A total of 117 land-based watches have been carried out from sites in Galway Bay equating to 195 hours of quantified effort watching in all. Standardised boat-based photo-id transects also commenced in Galway Bay in May 2005 yielding a 75% sighting success rate. Harbour porpoises were the most frequently sighted species followed by bottlenose dolphins.

IWDG have conducted 474 watches from numerous sites in 2005. In total the IWDG have data from 1754 watches from 93 sites. The total number of hours watched now exceeds 2689. All effort data have been uploaded onto a web server for on-line interrogation. In addition, the IWDG were requested to initiate a trial-monitoring programme of the two Special Areas of Conservation designated for Harbour porpoise (Roaringwater Bay, Co Cork and Blasket Islands, Co Kerry). Twelve watches were carried out from Castle Point overlooking Roaringwater Bay cSAC with cetaceans observed on five (42%) occasions. Only harbour porpoise were observed at a mean rate of 0.63 sightings per hour. Of the 27 watches carried out at the Blasket Islands, cetaceans were observed on 23 (85%). A total of 44 sightings were made during 3455 minutes (57.6 hours) of watching: a rate of 0.82 sightings per hour. Both Annex II species (harbour porpoise and bottlenose dolphins) have been observed as well as common dolphins and minke whales.

Land-based visual and acoustic (T-POD) surveys were used to monitor variation in abundance of porpoises at two sites on the north coast of Anglesey, North Wales, in relation to tidal phase, tidal state and time of day. Patterns of abundance in relation to tidal phase and state differed between locations (UCD). Up to 24 porpoises per scan were observed at Point Lynas, with abundance greatest during ebbing tides, reaching a mean of 12.25 individuals per scan. At Porth Wen, porpoises were generally present in fewer numbers, and activity patterns were less distinct (Leeney, 2005).

2.1.2 OPPORTUNISTIC, PLATFORMS OF OPPORTUNITY

Scientists from GMIT conduct visual surveys using platforms of opportunity in Galway Bay twice monthly. The survey route follows a track from Galway docks to the Aran Islands. Harbour porpoises have been the most frequently sighted species followed by bottlenose dolphins. A relative abundance of 0.02 animals per mile was generated. Scientists from IWDG conducted monthly surveys with Irish Ferries on the Dublin – Holyhead and Rosslare - Pembroke routes. From January 2006 a new survey route commenced across the north Irish Sea, using P&O vessels sailing between Larne and Cairnryan (IWDG). Scientists also participated in two surveys on the RV Celtic Explorer (IWDG, UCC).

3. Marking data

3.1 Field work

3.1.1 NATURAL MARKING DATA

Four boats targeting bottlenose dolphins were monitored by scientists from SDWF in the Shannon estuary. During 2005 43 accompanied trips allowed 68 individual dolphins to be identified from a tour boat. SDWF now has 165 dolphins catalogued. Bottlenose dolphins from the Shannon estuary and other areas on the western seaboard were also photographed, 40 from the Shannon estuary and 40 from elsewhere. Photo-identification of humpback and fin whales was undertaken during 2005 from tour boats operating along the south coast of Ireland (IWDG) and during a dedicated survey for humpback whales in the Cape Verde Islands (IWDG).

Species	Feature	Area/stock	Calendar year/season/ no. photographed	Catalogued (Y/N)	Catalogue total	Contact person/institute
Bottlenose dolphins	Fin	N.E. Atlantic	68	Y	165	SDWF
Bottlenose dolphins	Fin	N.E. Atlantic	40 West Ireland 40 Shannon	Y Y	151 250	UCC
Common dolphins	Fin	N.E. Atlantic	12	Y	12	IWDG
Bottlenose dolphins	Fin	N.E. Atlantic	4	Y	4	IWDG
Humpback whale	Fluke	N.E. Atlantic	1 (south Ireland) 9 (Cape Verde islands)	Y	6	IWDG IWDG
Fin whale	Dorsal fin	N.E. Atlantic	3	Y	12	IWDG

3.1.2. ARTIFICIAL MARKING DATA

None

3.1.3 TELEMETRY DATA

None

3.2 Analyses/development of techniques

Of the bottlenose dolphins photographed in 2005 by SDWF, 57% of these were also recorded in 2003 and 19% in 1999. In addition, an expedition to the Cape Verde islands in March 2006 resulted in photo-identification of an additional 14 photographs which are being processed at the College of the Atlantic for matches (IWDG). Nine individuals humpback whales were photographed in the Cape Verde islands, two of which were previously sighted in 2003. Off the south coast of Ireland one humpback whale has been seen in five consecutive years in the same location and of the three Fin whales that were photo-identified this year, two were previously sighted in 2003 and 2004.

4. Tissue/biological samples collected

4.1 Biopsy samples

Species	Area/stock	Calendar year/ season no. collected	Archived (Y/N)	No. analysed	Total holdings	Contact person/institute
Bottlenose dolphins	Shannon estuary	12	Y	12	16	UCC

4.2 Samples from directed catches or bycatches

None taken

4.3 Samples from stranded animals

Species	Area/stock	Calendar year/ season	Archived (Y/N)	Tissue type(s)*	Contact person/institute
Fin whale	N.E. Atlantic	2	Y	Skin	IWDG
Cuvier's beaked whale	N.E. Atlantic	2	Y	Skin	IWDG
Bottlenose dolphin	N.E. Atlantic	5	Y	Skin	IWDG, UCC
Pilot whale	N.E. Atlantic	1	Y	Skin	IWDG
Sperm whale	N.E. Atlantic	1	Y	Skin	IWDG
N. bottlenose whale	N.E. Atlantic	1	Y	Skin, muscle, liver etc	UCC

*e.g. liver, skin, blubber etc.

5. Pollution studies

None currently in progress

6. Statistics for large cetaceans*6.1 Direct catches (commercial, aboriginal and scientific permits) for the calendar year 2005 or the season*

None

6.2 Non-natural mortality for the calendar year 2005

Nothing to report

6.2.1 STRANDINGS OR DEAD WHALES ENCOUNTERED AT SEA

Nothing to report

6.2.2 OBSERVED OR REPORTED SHIP STRIKES

Nothing to report

6.2.3 FISHERY BYCATCH

BIM operated a fisheries observer programme in a small number of fisheries (pelagic trawls, set gillnets) targeting pelagic (tuna, blue whiting, mackerel) and demersal (hake, monkfish, cod) species. 73 sets were observed in gillnet fleets and 30 hauls were observed in pair pelagic trawls. Harbour porpoise was the only cetacean species observed bycaught, in bottom set gillnets.

6.3 Earlier years' statistics

Nothing to report

7. Statistics for small cetaceans*7.1 For the calendar year 2005*

As above

7.2 Direct catches (commercial, aboriginal and scientific permits) for the calendar year 2005

None

7.3 Non-natural mortality for the calendar year 2005

None reported, although it should be noted that very few post-mortem examinations were carried out in this year

7.3.1 STRANDINGS OR DEAD SMALL CETACEANS ENCOUNTERED AT SEA

None reported

7.3.2 OBSERVED OR REPORTED SHIP STRIKES

None reported

7.3.3 FISHERY BYCATCH

Species	Sex	Date	Location	Fate	Targeted fish species	Gear	How observed?	Source or contact
Harbour porpoise	U	06/03	51°25'N 6° 54'W	D	Cod	GNS	F	BIM
Harbour porpoise	U	07/03	51° 25'N 6° 56'W	D	Cod	GNS	F	BIM
Harbour porpoise	U	31/07	50° 41'N 8° 09'W	D	Hake	GNS	F	BIM

7.4 Earlier years' statistics

Nothing to report

8. Strandings

118 animals in various stages of decomposition were reported (IWDG, UCC). Of these, 34 were not positively identified, the most commonly stranded species was common dolphin, followed by harbour porpoise. Two species of beaked whale were recorded, including a live stranding of a northern bottlenose whale and two Cuvier's whales. As a result of lack of funding, only a very small number of post-mortem examinations were carried out this year, with very limited sampling. All strandings are maintained in a strandings database with advanced on-line search and retrieval (IWDG) and are published annually in the Irish Naturalists' Journal.

9. Other studies and analyses

An EU funded project (NECESSITY) investigating ways of mitigating bycatch of dolphins in pelagic trawls continues (BIM, UCC) and includes a number of studies examining the reaction of bottlenose dolphins and common dolphins to different types of pingers were carried out in 2005 (BIM, SDWF, GMIT, UE, UCC). The effects of acoustic deterrents (Continuous Pingers and Responsive Pinger) on bottlenose dolphin and common dolphin behaviour was examined visually and acoustically (SDWF, GMIT, UE, BIM). The probability of habituation to two different types of commercially available pingers (Dukane, Aquamark) was tested on bottlenose dolphins (UCC).

Skulls continue to be archived at the National Museum of Scotland and the Natural History Museum of Ireland. A genetic study to examine stock and social structure for common, striped and white-sided dolphins continues (UCC), as does a study of helminth parasites in small cetaceans (UCC).

10. Literature cited

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- Leeney R.H. (2005). Critical Habitats of a protected species: Distribution of harbour porpoises in relation to tide, time and boat traffic. PhD thesis, University College Dublin.

11. Publications

11.1 Published or 'In Press' papers only

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- Rogan, E., Murphy, S., Cronin, M. & Smiddy, P. 2005 Risso's dolphin *Grampus griseus* (Cuvier) *Irish Naturalists' Journal* 28 (4) 171
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- Rogan, E., Brophy, J. & Murphy, S. in press Records from the Irish Whale and Dolphin 2003 Group *Irish Naturalists' Journal*
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11.2 Unpublished literature

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