

# Ireland. Progress report on cetacean research May 2007 to May 2008, with statistical data for the *calendar year* 2007

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This report summarises information obtained from:

Name of agency/institute	Abbreviation (use in rest of report)	Contact e-mail address
Galway Mayo Institute of Technology	GMIT	JOANNE.OBRIEN@GMIT.IE
Irish Whale and Dolphin Group	IWDG	SIMON.BERROW@IWDG.IE
Irish Sea Fisheries Board	BIM	COSGROVE@BIM.IE
Marine Institute	MI	CIARAN.ODONNELL@MARINE.IE
National Parks & Wildlife Service	NPWS	DAVID.LYONS@ENVIRON.IE
Shannon Dolphin & Wildlife Foundation	SDWF	SIMON.BERROW@SHANNONDOLPHINS.IE
University College Cork	UCC	E.ROGAN@UCC.IE

## 1. SPECIES AND STOCKS STUDIED

IWC common name	IWC recommended scientific name	Area/stock(s)	Items referred to
Humpback whale	<i>Megaptera novaeangliae</i>	NE Atlantic	2.1.1, 2.1.2, 3.1.1
Fin whale	<i>Balaenoptera physalus</i>	NE Atlantic	2.1.1, 2.1.2, 3.1.1, 8
Minke whale	<i>Balaenoptera acutorostrata</i>	NE Atlantic	2.1.1, 2.1.2,
Harbour porpoise	<i>Phocoena phocoena</i>	NE Atlantic	2.1.1, 2.1.2, 4.2, 4.3, 7.3.2, 8
Common dolphin	<i>Delphinus delphis</i>	NE Atlantic	2.1.2, 3.1.1, 4.2, 4.3, 7.1, 7.3.2,
Striped dolphin	<i>Stenella coeruleoalba</i>	NE Atlantic	4.3, 7.1, 7.3.2, 8
Bottlenose dolphin	<i>Tursiops truncatus</i>	NE Atlantic	2.1.1, 2.1.2, 3.1.1, 8
Atl. white-sided dolphin	<i>Lagenorhynchus acutus</i>	NE Atlantic	4.3, 8
White-beaked dolphin	<i>L. albirostris</i>	NE Atlantic	8
Long-finned pilot whale	<i>Globicephala melas</i>	NE Atlantic	8
Risso's dolphin	<i>Grampus griseus</i>	NE Atlantic	2.1.1, 8
Killer whale	<i>Orcinus orca</i>	NE Atlantic	2.1.1, 5,
Cuvier's beaked whale	<i>Ziphius cavirostris</i>	NE Atlantic	8
Northern bottlenose whale	<i>Hyperoodon ampullatus</i>	NE Atlantic	8
Sowerby's beaked whale	<i>Mesoplodon bidens</i>	NE Atlantic	4.3, 8
Sperm whale	<i>Physeter macrocephalus</i>	NE Atlantic	8

## 2. SIGHTINGS DATA

### 2.1 Field work

#### 2.1.1 Systematic

A systematic survey of the offshore waters off Ireland was conducted as part of the CODA project during July 2007 (SMRU, UCC, BIM, NPWS). At least 12 species of cetaceans were observed during the cruise and preliminary estimates are provided in SC/60/O12.

The IWDG, in collaboration with GMIT, carried out an extensive survey of the Blasket Islands cSAC under contract to the NPWS (Berrow *et al.* 2007). This survey recorded 44 sightings of harbour porpoises resulting in an abundance estimate of  $303 \pm 76$  (95% CI 186-494). In addition there were seven sightings of common dolphin and five minke whale sightings within the cSAC.

GMIT carried out four systematic boat surveys in Clew Bay between June and September 2007, as part of a PhD programme funded by NPWS. Bottlenose dolphins were sighted and photographed during three of these surveys.

Systematic surveys were conducted in the Shannon estuary (Englund *et al.*, 2007) to derive abundance estimates for bottlenose dolphins (UCC, NPWS).

During this reporting period the IWDG co-ordinated systematic land-based effort watches from 14 sites in Irish waters under the ISCOPE II programme. These watches supplemented casual observations reported by members of public. The combined number of validated cetacean sightings of all species in this period was 1,567, breaking down as follows: Harbour porpoise 34.7%, common dolphin 16.3%, minke whale 14.7%, bottlenose dolphin 13.5%, fin whale 7.1%, Risso's dolphin 1.7%, and long-finned pilot whale 1.1%.

### 2.1.2 Opportunistic, platforms of opportunity

Primary species	Area	Data type/method	Collected by	Platform	Location of archive (if applicable)	Contact person/institute and refs
Fin whales	Celtic Sea	Photo-ID*; sightings	Dedicated observer	whalewatching vessel	IWDG	P. Whooley/ IWDG
Humpback whale	Celtic Sea	Photo-ID*, sightings	Dedicated observer	whalewatching vessel	IWDG	P. Whooley/ IWDG
Bottlenose dolphin	Shannon estuary	Photo-ID	Dedicated observer	whalewatching vessel	SDWF	S. Berrow/SDWF
Bottlenose dolphin	Clew Bay	Photo-ID	Dedicated observer	Chartered vessel	GMIT	Joanne O'Brien/GMIT
	Mid Atlantic Ridge	Sightings	Dedicated observer	Research vessel	UCC	Micheal Mackey/UCC

Fin and humpback whale Photo-identification studies up to November 2007 have been carried out largely in the West Cork area. Photo ID trips were carried out in favourable whale watching conditions of sea state <3, swell <1m, and visibility of >10km. Trips were carried out during periods when land-based watches or sightings reports suggested that fin and humpback whales were present in the area, thus maximising encounter rates.

Key fin whale features are described, such as dorsal fin shape (6 types), dorsal fin notches (lead & trailing edge), scar shapes (8 types) and irregular blotching, and chevron types. When possible a suite of images were taken on both left and right sides including the rostrum, head, chevron, flanks, dorsal fin and tail stock.

Tour boat monitoring in the Shannon estuary was carried out by the SDWF. During a total of 47 trips, 32 individually recognisable dolphins were recorded. Of these 56% were recorded in the previous year and 16% seven years previously.

The IWDG was involved in a review of Atlantic Research Coalition data-sets collected from ferries throughout the NE Atlantic and their potential for use in regularly reporting on the conservation status of cetaceans in UK and Northwest European waters that was recently completed for JNCC (Brereton *et al.* 2007).

## 2.2 Analyses/development of techniques

Fin whales were observed on 7 of 9 trips (78%) between September 2007 and January 2008. Of the 20 fin whales identifiable as individuals, 6 were new whales and added to the Irish fin whale photo-identification catalogue, while the remainder 14 were re-sightings of previously documented whales.

To date the fin whale catalogue contains 41 identifiable animals; of which 26 (63.4%) have been sighted once, 11 (26.8%) have been re-sighted between 1-5 times intra-annually. Two whales have been re-sighted inter-annually over two years and one whale has been re-sighted in each of three years. The most frequently observed whale #FWIRL1 "Ray" has been photographed in four of the last five years.

The Irish humpback whale catalogue currently contains 7 individuals. One new whale, #HBIRL7 was added to this catalogue in September 2007. Significantly this represents Ireland's first international match of a humpback whale, as it was observed off the Wadden Sea, North Sea area of the Dutch coast in May 2007 and again in November 2007. Thus completing a 2,500KM round trip between the North Sea and the Irish South Coast. The Irish fin and humpback whale catalogues are viewable on [www.iwdg.ie](http://www.iwdg.ie)

GMIT identified 11 individual bottlenose dolphins through photo-identification in Clew Bay in 2007. Of these individuals identified, four individuals were re-sighted on a second occasion within the bay, and one individual with a condition described as scoliosis identified in Galway Bay in 2005 (Berrow and O'Brien, 2005), was re-sighted in Clew Bay in July and again in August 2007.

### 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
Fin whales	Dorsal fin	Celtic Sea	20	Y	41	P. Whooley (IWDG)
Humpback whale	Fluke	Celtic Sea	1	Y	7	P. Whooley (IWDG)
Bottlenose dolphin	Dorsal fin	Clew Bay	11	Y	11	J. O'Brien (GMIT)
Bottlenose dolphin	Dorsal fin	Shannon estuary	32	Y	210	S. Berrow (SDWF)
Bottlenose dolphin	Dorsal fin	Shannon estuary	81	Y	240	S. Ingram (UCC)

##### 3.1.2. Artificial marking data

NA

##### 3.1.3 Telemetry data

NA

#### 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
Bottlenose dolphins	N. Atlantic	2007	Y	35	49	UCC

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

No samples were obtained during this period from bycaught animals.

#### 4.3 Samples from stranded animals

Currently there is no programme to carry out post-mortem examinations on stranded cetaceans. However, skin samples are collected by the IWDG and are archived at the Natural History Museum (Dublin).

#### 4.4 Analyses/development of techniques

NA

### 5. POLLUTION STUDIES

There are no on-going pollution studies.

## 6. STATISTICS FOR LARGE CETACEANS

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

### 6.2 Direct catches of large whales (commercial, aboriginal and scientific permits) for the calendar year 2008

NA

### 6.3 Anthropogenic mortality of large whales for the calendar year 2008

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

#### 6.3.2 Fishery bycatch of large whales

None reported

## 7. STATISTICS FOR SMALL CETACEANS

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

### 7.2 Direct catches of small cetaceans for the calendar year 2008

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)

There were no reported ship strikes of small cetaceans in this reporting period

#### 7.3.2 Fishery bycatch of small cetaceans

A bycatch programme is currently being carried out on gillnets to examine the efficacy of pingers. During this programme, two harbour porpoises were reported as bycatch (BIM).

Species	Sex	No.	Date	Location	Fate	Targeted fish species	Gear	How observed?	Source or contact
Harbour Porpoise	U	2	04/07	51°00'N; 6°83'W	D	<i>Gadus morhua</i>	Gillnet	Onboard Observer	BIM
Comments: Entangled in gear, cut off and sank.									

## 8. STRANDINGS

The IWDG Stranding Scheme operates throughout the year around the entire coastline of Ireland (north and south). Records are received from IWDG members, National Parks and Wildlife Conservation Rangers and members of the public, usually by e-mail or phone. In 2007, 88% of records submitted were accompanied by a photograph. All records are validated by the IWDG and published in the Irish Naturalists' Journal (O'Connell and Berrow in press).

A total of 143 stranding records were reported during 2007, which is the second highest annual total since records began (O'Connell and Berrow in press). 12 species were identified with the most frequent being common dolphins (26.57%) and harbour porpoises (21.68%). 28 (19.58%) of strandings were of live animals which was higher than in previous years - in 2005 and 2006, live strandings accounted for 5.94% and 13.6% respectively. There were two strandings of fin whales, both of which occurred on the same day (28 December) but approximately 170km apart. Both animals, one of which was only 6.56m in length, were alive when stranded but died shortly afterwards. These two records brought the total recorded number of strandings for this species to 24 since 1900. Previous to this, only two other live strandings of fin whales are on record in Ireland with 1 each in 2001 and 2003. No strandings of fin whales were recorded in Ireland between 16 July 2003 and 27 December 2007 (inclusive).

Species	No. strandings	No. post mortems	Contact person(s)/ Institute(s)	Contact email address(es)
Common Dolphin	38	1	M. O'Connell (IWDG)	<a href="mailto:mick.oconnell@iwdg.ie">mick.oconnell@iwdg.ie</a> E.Rogan@ucc.ie
Harbour porpoise	31		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie
Pilot whale	13		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie
Atlantic white-sided dolphin	13		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie
Bottlenose dolphin	8		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie
Striped dolphin	7		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie
White beaked dolphin	2		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie
Fin whale	2		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie
Sperm whale	2		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie
Minke whale	1		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie
Cuvier's beaked whale	1		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie
Risso's dolphin	1		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie
Unident. dolphin	16		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie
Unident. whale	4		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie
Unident. cetacean	4		M. O'Connell (IWDG)	mick.oconnell@iwdg.ie

## 9. OTHER STUDIES AND ANALYSES

GMIT carried out passive acoustic monitoring through the use of T-PODs at two locations in Galway Bay, and at a single location in Clew Bay during the summer, 2007. This was part of a long term monitoring programme and results have showed that harbour porpoises were the most frequently detected species in both areas. Harbour porpoises were detected on average 88% of days in Galway Bay, and on average 89% of days in Clew Bay. Statistical analysis confirmed that harbour porpoise detections were greatest during the winter months (November, December, January) in Clew Bay, while more detections were logged during the autumn in Galway Bay.

## 10. LITERATURE CITED

O'Connell, M. & Berrow, S. (2007) Records from the Irish Whale and Dolphin Group for 2006. *Irish Naturalists' Journal* **28(11)**: 459-466.

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Berrow, S.D., McGrath, D., O'Brien, J., Leeney, R. and Cosgrove, R. (submitted) Effects of pingers on the behaviour of common dolphins. *Journal of Cetacean Research and Management*.

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## 11. PUBLICATIONS

Please follow the official IWC style guide for references (<http://www.iwcoffice.org/publications/styleguide.htm>).

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Rogan, E. and Mackey, M. 2007 Bycatch and discarding in the Irish tuna driftnet fishery. *Fisheries Research*, 86(1), 6 – 14.

Thompson, P., Ingram, S., Lonergan, M. Northridge, S. Hall, A. Wilson, B., 2007. Climate change causing starvation in harbour porpoises? *Biology Letters*, 3: 533-534.

Whooley, P. Berrow, S. and Barnes, C. 2008 Photo-identification of fin and humpback whales off the south coast of Ireland. Proceedings of the European Cetacean Society Conference, Egmond aan Zee, Netherlands, 10-12 March 2008

### 11.1 Published or 'In Press' papers only

Please list all published or 'in press' papers. **It will be appreciated if you can send a pdf or reprint to the Secretariat for the library.**

O'Connell and Berrow (2008) Records from the Irish Whale and Dolphin Group for 2007. *Irish Naturalists' Journal* (in press)

### 11.2 Unpublished literature

Please include information as to where the documents may be obtained **and if possible, pdf versions or reprints for the library.**

Browne, D. and Cosgrove, R. 2007 Cetacean by-catch rates in Irish gillnet fisheries in the Celtic Sea. Marine Technical Report June 2007. Bord Iascaigh Mhara.

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## Appendix 1. FOA fishing descriptions and codes

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