

IRELAND PROGRESS REPORT ON CETACEAN RESEARCH

June 2001 to April 2002

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This report summaries cetacean research involving University College Cork (UCC), Dúchas (The Heritage Service), Shannon Dolphin and Wildlife Foundation (SDWF), Irish Whale and Dolphin Group (IWDG), University College, Dublin (UCD), Marine Institute, University of Aberdeen, Department of Zoology (UADZ), University of La Rochelle, France, Netherlands Institute for Sea Research (NIOZ), National Museum of Scotland (NMS).

1. Species and stocks studied

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

Common Name	Scientific Name	Area	Items referred to
Harbour porpoise	<i>Phocoena phocoena</i>	NE Atlantic	2.1.1, 2.1.2, 4.3, 5, 8, 9
Common dolphin	<i>Delphinus delphis</i>	NE Atlantic	2.1.2, 4.3, 5, 8, 9
Bottlenose dolphin	<i>Tursiops truncatus</i>	NE Atlantic	2.1.1, 2.1.2, 3.1.1, 4.3, 5, 8
Striped dolphin	<i>Stenella coeruleoalba</i>	NE Atlantic	2.1.2, 4.3, 5, 8
White-sided dolphin	<i>Lagenorhynchus acutus</i>	NE Atlantic	2.1.2, 4.3, 5, 8
Risso's dolphin	<i>Grampus griseus</i>	NE Atlantic	2.1.2, 4.3, 8
Pilot whale	<i>Globicephala melas</i>	NE Atlantic	2.1.2, 4.3, 8
Killer whale	<i>Orcinus orca</i>	NE Atlantic	2.1.2, 4.3, 5, 8
Sperm whale	<i>Physeter macrocephalus</i>	NE Atlantic	2.1.1, 2.1.2, 4.3, 8
Northern Bottlenose whale	<i>Hyperoodon ampullatus</i>	NE Atlantic	2.1.2
Cuvier's beaked whale	<i>Ziphius cavirostris</i>	NE Atlantic	2.1.2, 4.3, 8
Sowerby's beaked whale	<i>Mesoplodon bidens</i>	NE Atlantic	2.1.2
Minke whale	<i>Balaenoptera acutorostrata</i>	NE Atlantic	2.1.2, 4.3, 8
Fin whale	<i>Balaenoptera physalus</i>	NE Atlantic	2.1.2, 8
Humpback whale	<i>Megaptera novaeangliae</i>	NE Atlantic	2.1.2

2. Sightings data*2.1 Field work***2.1.1 SYSTEMATIC**

UCC conducts standardised boat-based photo-ID surveys in the Shannon estuary for bottlenose dolphins and in Bantry Bay for harbour porpoise. They also conduct land-based visual studies of fine-scale behaviour and distribution of in core areas at both sites. Photo-identification surveys for bottlenose dolphins at selected locations along the west coast of Ireland were also carried out in the summer of 2001. 10% of the animals encountered were previously known from the Shannon estuary (Ingram, England and Rogan, 2002).

The IWDG carry out quantified effort, land-based visual surveys from the Old Head of Kinsale and other sites along the Irish coastline.

2.1.2 OPPORTUNISTIC PLATFORMS OF OPPORTUNITY

UCC conducts visual and acoustic surveys in the waters to the south, north and west of Ireland and the Rockall Trough (O'Cadhla *et al.*, 2002; Aguilar *et al.*, 2002). A casual sightings scheme co-ordinated by the IWDG continues to operate, along with visual surveys using POPs in the Irish and Celtic Seas. Sightings are submitted on standardised forms and entered into a database, in conjunction with Seawatch Foundation, UK.

3. Markings data

3.1 Field work

3.1.1 NATURAL MARKING DATA

A photo-identification study of the Shannon estuary bottlenose dolphin group continues (UCC). The catalogue now contains in excess of 1000 photographs of over 200 identified individuals. A separate catalogue of 80 identified bottlenose dolphins was established for other sites along the west coast of Ireland (UCC). Four boats are also being used as platforms of opportunity for photo-identification purposes (SDWF, UCC).

Species	Feature	Area/stock	Calendar year/season No. photographed	Catalogue d	Contact person/institute
Bottlenose dolphin	Dorsal fin	NE Atlantic	> 120	Y	UCC

4. Tissue/biological samples collected

4.1 Biopsy

None

4.2 Samples from directed catches or bycatches

Common Name	Area	Season total	Archived Y/N	Tissue type(s)	Contact person/institute
Harbour porpoise	NE Atlantic	3	Y	Skin, blubber etc.	UCC

4.3 Samples from stranded animals

A summary of samples collected from stranded animals throughout Ireland during the period June 2001 – April 2002 is given in the following table.

Common Name	Area	Calendar year/Season total	Archived Y/N	Tissue type(s)	Contact person/institute
Harbour porpoise	NE Atlantic	12	Y	Skin, blubber etc.	UCC
Common dolphin	NE Atlantic	5	Y	Skin, blubber etc.	UCC
Striped dolphin	NE Atlantic	2	Y	Skin, blubber etc.	UCC
Bottlenose dolphin	NE Atlantic	4	Y	Skin, blubber etc.	
Atlantic white-sided dolphin	NE Atlantic	3	Y	Skin, blubber etc.	UCC
Pilot whale	NE Atlantic	7	Y	Skin	UCC
Killer whale	NE Atlantic	1	Y	Skin blubber, etc.	
Minke whale	NE Atlantic	3	Y	Skin, blubber etc.	UCC
Cuviers whale	NE Atlantic	1	Y	Skin	UCC

Analyses/development of techniques

5. Pollution studies

Samples for contaminant analysis are routinely collected and archived. Samples for heavy metal analysis are sent to the University of La Rochelle and for POPs to NIOZ in the Netherlands.

6. Statistics for large whales

6.1 Direct catches for the calendar year 2001

None

6.2 Other non-natural mortality

None determined.

7. Statistics for small cetaceans

7.1 For the calendar year 2001

During the reporting period no observer schemes operated and two stranded animals (one common dolphin and one harbour porpoise) were diagnosed as bycatch during post-mortem examination. However, foot and mouth disease restrictions prevented many post-mortem examinations being carried out.

8. Strandings

The IWDG, in conjunction with UCC and Dúchas co-ordinate the strandings scheme. All stranding records are published annually in the Irish Naturalists' Journal. During the reporting period, 98 stranded cetaceans, comprising 12 species were reported to the IWDG. Post-mortem examination was carried out on 38 of these by UCC. One additional striped dolphin, two bottlenose dolphins, and 19 pilot whales live-stranded and were re-floated. The latter group was part of a mass stranding of 42 pilot whales, of which 18 died soon after the stranding incident, and some six animals died subsequently.

9. Other studies and analyses

The population structure of Icelandic and Irish harbour porpoises is being studied by UCD using mtDNA sequences (UCD unpublished data). Morphometric and reproductive studies continue on a number of species, including common dolphins (Murphy *et al.*, 2002; NMS). Skulls are archived in the National Museum of Scotland.

The Shannon estuary has been nominated as a candidate Special Area of Conservation (cSAC) under the EU Habitats Directive. As part of the designation procedure, guidelines are being established for dolphin watching boats (Dúchas) and other activities within the estuary. A monitoring programme is being established.

10. Literature cited

- Aguilar de Soto N., Rogan, E., Ó'Cadhlá O., & Connolly N. 2002. Cetaceans and seabirds in Irish waters. Volume 1 Acoustic detections of cetaceans in the Rockall Trough. Final report presented to the Rockall and Porcupine Studies Group (unpublished). 76pp.
- Ingram, S.N., England, A., Rogan, E. 2002. Bottlenose dolphins on the west coast of Ireland: results of photo-identification surveys. Final report to the Heritage Council of Ireland. 20pp.
- Ó'Cadhlá, O., Rogan, E., Mackey M., Aguilar de Soto N., Kelly T., Rogan E. & Connolly N. (2002) Cetaceans and seabirds in Irish waters. Volume 1 Cetaceans. Final report to the Rockall and Porcupine Studies Group (unpublished). 90pp.
- Murphy, S. Herman, J. and Rogan, E. Cranial analysis in the common dolphin *Delphinus delphis* in the northeast Atlantic. Poster presented at 16th Annual conference of the European Cetacean Society, Liege, April 2002.

11. Publications

Published or 'In Press' papers only

- Law, R.J., Allchin, C.R., Bennett, M.E., Morris, S. and Rogan, E. 2001. Polybrominated diphenyl ethers in two species of marine top predators. *Chemosphere*, 46(5), 673 – 681.
- Rogan, E. and Penrose, R. (2001). Marine mammal strandings. A collaborative study for the Irish Sea. Maritime Ireland/Wales INTERREG Report No. 8, 53pp
- Santos M.B., Pierce G.J., Kuiken T, García Hartmann M., Smeenk C., Addink, M.J., Reid R.J., Patterson I.A.P., Lordan C., & Rogan, E. (in press) Additional notes on stomach contents of sperm whales *Physeter macrocephalus* stranded in the NE Atlantic. *Journal Marine Biological Association*.