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Summer Distribution and Relative Abundance of Cetaceans off the West Coast of Ireland

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Abstract:

From May to September 2004 a survey of cetacean distribution and relative abundance was conducted on board a 'ship of opportunity' off the west coast of Ireland. In total, 508 hours of survey effort were completed with 304.2 hours in Beaufort sea-state three or less. 231 sightings of eight species - common dolphin *Delphinus delphis*, Atlantic white-sided dolphin *Lagenorhynchus acutus*, bottlenose dolphin *Tursiops truncatus*, harbour porpoise *Phocoena phocoena*, Risso's dolphin *Grampus griseus*, pilot whale *Globicephala melas*, minke whale *Balaenoptera acutorostrata* and fin whale *Balaenoptera physalus* - were recorded, totalling 2,933 individuals. The greatest diversity and relative abundance was recorded on the Rockall Bank, with Atlantic white-sided dolphin being the most abundant species. The common dolphin was the most abundant species recorded on the continental shelf to the south-west of Ireland while the relative abundance of cetaceans off the north coast was very low. The data suggests that cetacean species composition and relative abundance can vary greatly between adjacent marine habitat types and over relatively small geographical distances.

Results:



Figure 1. Area boundaries and survey effort from May – September 2004. Each circle represents an environmental record station.

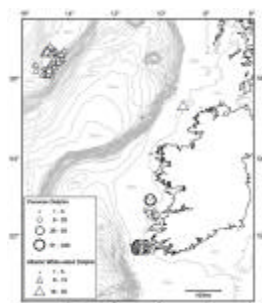


Figure 2. Distribution and group sizes of Atlantic white-sided dolphin and common dolphin recorded during the survey.

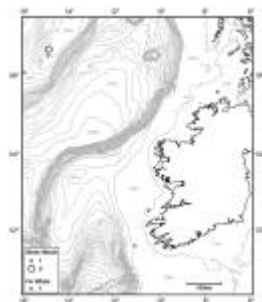


Figure 3. Distribution and group sizes of fin whale and minke whale recorded during the survey.

Table 1. Cetacean species diversity, sightings, counts and relative abundance for each area surveyed.

Area	Number of Species	Number of Sightings	Number of Individuals	Relative Abundance* (All Species)
1	6	105	1082	13.2
2	5	22	83	0.4
3	3	97	1610	12.1

Table 2. Cetacean species diversity, sightings, counts and relative abundance for each area surveyed.

Species	Definite	Probable	Possible	Total
Common dolphin	63	8		71
Atlantic white-sided dolphin	31	17	3	51
Pilot whale	5			5
Bottlenose dolphin	1	1		2
Harbour porpoise	2			2
Risso's dolphin	2			2
Minke whale	4	3		7
Fin whale	1		3	4
Total	109	29	6	144

Conclusions:

Utilising of 'ships of opportunity' provides a cost effective tool for the collection of data on cetacean distribution and abundance. Such platforms can provide opportunities to survey otherwise inaccessible offshore habitats or to provide platforms for long term monitoring of cetacean distribution and relative abundance in areas of interest. The results of this survey have implications for the conservation and management of cetacean populations in Irish waters. Differences in species distribution and relative abundance across geographical areas and between different marine habitats must be considered when drawing up management plans for cetaceans and marine habitats. Further survey effort is required to quantify cetacean relative abundance for all marine habitat types (e.g. deep water coral reefs, offshore banks and deep water canyons) and in all months (to quantify seasonal variation).

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