



Monitoring cetaceans in Irish waters

ISCOPE II (2006-2009)

Third Annual Report (May 2008 – April 2009)

Prepared by

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October 2009

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Introduction

Irish waters provide some of the most important habitats for cetaceans (whales, dolphins and porpoises) in Europe. To date, 24 species have been recorded including some of the most rare and poorly understood whales in the world (Berrow, 2001). Two cetacean species, (harbour porpoise *Phocoena phocoena* and bottlenose dolphin *Tursiops truncatus*), are listed under Annex II of the EU Habitats Directive and are priority species for Natura 2000. This commits member states to nominate critical sites to protect their habitats. All cetacean species (baleen whales, dolphins, harbour porpoise and toothed whales) are listed as priority species for conservation in Northern Ireland. Conservation measures, including site designation, are constrained by lack of reliable data on the distribution and relative abundance of these and other cetacean species in Irish waters.

Monitoring these highly mobile and largely inaccessible animals and identifying critical habitats is difficult and many countries have developed stranding and sighting schemes for this purpose. Data obtained through a cetacean stranding schemes have recently been recognized as a Marine Environmental Impact Indicator and “an important tool for describing trends in cetacean numbers and distribution” (Boelens *et al.* 2004).

As a network of marine protected areas (MPAs) is created around the coast of Ireland, the issue of monitoring Annex II species outside of MPAs has been raised. All Annex II marine mammal species will spend considerable time outside of MPAs designated for their protection and most of the populations involved will reside exclusively outside of MPAs. Thus a system of monitoring these species throughout their range in Irish waters is essential not only to monitor species but also identify sites, which might qualify for MPA status. Distribution and abundance data are also important for addressing management issues such as the impact of fisheries bycatch to supporting marine tourism.

The IWDG stranding and sighting schemes, established in 1991, provide a baseline for an All-Ireland cetacean recording scheme and enables agencies and government departments to fulfill obligations under many national and international agreements, including Natura 2000, ASCOBANS, OSPAR and the recently published Northern Ireland Biodiversity Strategy and National Biodiversity Plan. These data are essential to contribute to Local Biodiversity Action Plans and Species Action Plans, which are expected to be implemented over the next few years. Cetacean recording is an essential marine component of national biological recording initiatives such as that co-ordinated by the Centre for Environmental Data and Recording (CEDaR) in Northern Ireland and the new Biological Records Centre in the Republic. Under both the Northern Ireland Biodiversity Strategy and National Biodiversity Plan, a conservation assessment of all Annex II and IV (all cetaceans) is required and the data gathered under ISCOPE II is essential in the formulation of this assessment.

In 2003, the IWDG initiated the Irish Scheme for Cetacean Observation and Public Education (ISCOPE), which aimed to promote better awareness and knowledge of cetaceans (whales, dolphins and porpoises) in Irish waters, by encouraging public participation in cetacean recording. ISCOPE has proved very successful and the IWDG are

building on the success of this initiative by continuing to expand the recording network and improve data management.

The objectives of ISCOPE II are to:

- 1) continue to raise awareness of cetaceans in Irish waters,
- 2) exploit “platforms of opportunity” to increase seasonal and geographic coverage of offshore habitats,
- 3) maintain cetacean sightings and strandings databases
- 4) develop indices for monitoring population status and relative abundance
- 5) collaborate with other projects attempting to integrate marine data-sets

Administration

ISCOPE II was started on 1 May 2006. Deliverance of the objectives of is overseen by a Steering Committee. The full Steering Committee is presented in Appendix I. The ISCOPE II budget was managed by George Delaney of the IWDG and expenditure for the period 1 November 2008 to 30 April 2009 is presented.

In order to achieve these objectives the work schedule has been divided into four work packages. Those responsible for each workpackage are identified.

Work package 1

Task: Encourage and train the public and agencies to record cetaceans in Irish waters.

Responsibilities: Simon Berrow and Pádraig Whooley

Work package 2

Task: To carry out quantified effort monitoring

Responsibilities: Pádraig Whooley (Sightings), Mick O’Connell (Strandings) and Simon Berrow

Work package 3

Task: Carry out cetacean surveys on Ships of Opportunity (ShOPs)

Responsibilities: Clare Murray and Dave Wall

Work package 4

Task: Maintain cetacean database and develop monitoring indices

Responsibilities: Simon Berrow, Mick O’Connell (Strandings) and Pádraig Whooley (Sightings)

Work package 1

Encourage and train the public and agencies to record cetaceans in Irish waters

Tasks:

- 1.1 promote ISCOPE II, including participation at national and regional exhibitions,
- 1.2 continue to organise and deliver courses on recording and species identification,
- 1.3 encourage greater participation from government agencies who are regularly at sea
- 1.4 develop procedures to ensure feedback to observers
- 1.5 improve and reprint recording forms as required

Following the last Annual Report, the Steering committee requested that we presented promotional events, training courses and public talks separately. These are listed below.

1.1 We have promoted ISCOPE II at (Table 1).

We have had stalls at four large events during the reporting period on both the east and west coast (Table 1a). We have taken a stand at the Irish Skipper expo in Galway 7-8 March 2008. Public talks were given at eight locations on 12 occasions (Table 1b).

Table 1a: Large-scale events at which ISCOPE II was promoted 1 May 2008 – 30 April 2009

Date	Event	Location	County	Who delivered	Attendance
24 August 2008	Whalewatch Ireland	All-Ireland	15 sites	Many	1500
19-21 September 2008	Muc Mhara Conference	Killiney	Dublin	Many	150
9 November 2008	Sligo I.T. Science Fair	Sligo IT	Sligo	MO'C	3000
18-22 February 2009	Allianz Boat Show	RDS	Dublin	PW/Many	5000

SB= Simon Berrow, IE= Ian Enlander, DW= Dave Wall, MO'C=Mick O'Connell, PW= Pádraig Whooley

Table 1b: Public talks at which ISCOPE II was promoted 1 May 2008 – 30 April 2009

Date	Event	Location	County	Who delivered	Attendance
10 May 2008	Welfare Workshop	GMIT	Galway	SS	50
17-18 May 2008	Marine Wildlife Tour Operators Course	Cape Clear	Cork	SB/PW	20
25 May 2008	Lough Agency	Derry	Derry	PW	6
27-29 June 2008	Cape Clear whalewatching weekend	Cape Clear	Cork	PW	18
10 July 2008	Cape Clear Ecology Course	Cape Clear	Cork	PW	12
17 July 2008	Sirius Arts Centre	Cobh	Cork	PW	40
25-27 July 2008	Cape Clear whalewatching weekend	Cape Clear	Cork	PW	23
6 August 2008	Conamara National Park	Letterfrack	Galway	SB	30
29-31 August 2008	Cape Clear whalewatching weekend	Cape Clear	Cork	PW	14
25 October 2008	Conamara Sea Week	Letterfrack	Galway	SB	50
13 November 2008	Royal Ulster Yacht Club	Larne	Antrim	IE	75
18-22 Feb 2009	Allianz Boat Show Public talks x2	RDS	Dublin	PW	125

SB= Simon Berrow, MO'C= Mick O'Connell, DW= Dave Wall, PW= Pádraig Whooley, FW= Faith Wilson, IE=Ian Enlander

1.2 Courses on species identification

We have delivered nine one-day courses have been held during the reporting period with a total attendance of 241 people (Table 1c).

Table 1c: Identification Courses, 1 May 2008 – 30 April 2009

Date	Event	Location	County	Who delivered	Attendance
16 May 2008	Training day	Valentia	Kerry	MO'C	13
24 May 2008	ISCOPE Workshop	Ballyshannon	Donegal	PW	18
25 May 2008	Training day	Kilrush	Clare	SB	12
3 August 2008	Training day	Cahirciveen	Kerry	MO'C	55
6 September 2008	Training day	Ballycastle	Antrim	IE	11
1 October 2008	Sightings Training day	Portrush	Antrim	SB/MO'C	30
2 October 2008	Strandings Training day	Portrush	Antrim	SB/MO'C	30
8 November 2008	Sightings Training day	Mizen Head	Cork	PW	22
9 December 2008	Western Regional Fisheries Board	Westport	Mayo	SB	50

SB= Simon Berrow, IE= Ian Enlander, DW= Dave Wall, MO'C=Mick O'Connell, PW= Pádraig Whooley

1.3: Encourage government agencies

Two courses were given in Portrush, Co Antrim in October 2008 on behalf of the Northern Ireland Environment Agency (NIEA). One concentrated on identification and recording and was in support of the new cetacean inshore monitoring programme initiated by NIEA. The aim of this initiative is to obtain monthly watches at 11 sites using the IWDG protocol to gain greater information on seasonal and geographical variation in cetacean. Especially harbour porpoise, abundance. A second course was on live strandings and involved a range of organisations and included information on how to identify and record stranded animals.

1.4: Develop procedures

New procedures were agreed with NIEA concerning handling of effort watch data from the new cetacean inshore monitoring programme. NIEA will receive records from this programme and pass onto IWDG once they have logged each watch themselves. IWDG will continue to validate all records and populate the IWDG website.

Work package 2

To carry out quantified effort monitoring

Tasks:

- 2.1 continue to encourage collection of sightings and strandings records
- 2.2 encourage those people who regularly collect casual sightings data to carry out effort watches
- 2.3 carry out at least one watch per month during the same week from eight sites in the Republic of Ireland identified by the NPWS as key monitoring sites
- 2.4 carry out at least one watch per month at the two harbour porpoise cSACs (Roaringwater Bay and Blasket Islands).
- 2.5 liaise with EHS about regular monitoring of two key sites in Northern Ireland coinciding with potential SACs for harbour porpoise

Progress during ISCOPE II:

2.1 Stranding and Sighting records

We received a total of 1,493 sighting and 128 cetacean stranding records during the period from 1 May 2008 to 30 April 2009 (Table 2). Records were received in all months with a peak in August.

Table 2. Number of biological records received during 1 May 2008 – 30 April 2009

Data	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	April	Total
Stranding records	9	8	17	12	3	6	12	13	15	10	14	9	128
Sighting records	168	113	185	227	220	116	139	98	49	75	39	64	1493
Effort watches	45	45	53	43	50	33	32	35	33	42	34	32	477
Sightings (effort watches)	36	29	53	55	50	43	37	30	20	41	16	18	428
Effort sites watched	24	23	26	24	26	20	21	24	26	28	24	23	

Stranding Records

Between 1 May 2008 and 30 April 2009, the IWDG received records of 128 stranding incidents involving 132 cetaceans. This is down slightly on the same period in 2007/2008 when 145 stranding incidents involving 149 animals were reported to the IWDG Stranding Scheme. In both time periods, the majority of strandings involved a single animal.

Table 3. Cetacean strandings 1 May – 30 April 2008/9 and 2007/8

	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
2008/2009	9	8	17	12	3	6	12	13	15	10	14	9
2007/2008	12	5	5	13	14	13	6	22	15	12	13	15

Fifteen species were identifiable and recorded during the period in 2008/9 with harbour porpoises and common dolphins being the most frequently reported (27 and 24 incidents respectively), with striped dolphins being the third most frequently recorded stranding cetacean (13 incidents). On 17 January 2009, IWDG received a stranding record for a pygmy sperm whale which is the seventh record for this species on the strandings database. Another unusual stranding was recorded on 20 March 2009, this time a True's beaked whale in Co. Sligo which is only the tenth record for this species on the stranding database.

Sighting Records

During the present reporting period we received 1,493 sighting records of 18,545 cetaceans, from effort and casual watches combined comprising eleven species. This compares with 1,574 sighting records of 15,815 animals of 13 species, for the same period in 2007/8. These figures represent a 5.1% decrease in all cetacean sightings reported on 2007/8 (Table 3), or a decrease of 2% if records of basking sharks are included. Of these 1,349 sightings (90.3%) were classified to species level in 2008/9, while the remaining 144 (9.7%) sightings were downgraded to a non-species specific category. These compare with 2007/8 when 90.2% of all sightings were classified to species level.

The harbour porpoise (37%) was in keeping with previous years the most frequently reported species, followed by bottlenose dolphin (16.5%), common dolphin (13.9%) minke whale (11.7%), fin whale (6.6%), humpback whale (1.9%), Risso's dolphin (1.4%), killer whale (0.6%), pilot whale (0.5%), sperm whale (0.1%) and blue whale (0.1%). In 2008/9 the lowest number of sightings (39) was recorded in March, which compared with the peak month, August with 227 sightings (Table 3), this is similar to the previous 12 months.

Table 4. Location and number of effort watches carried out at key inshore monitoring sites, May 2008 – April 2009

Location	County	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	April	Total
1 Howth Head	Dublin	1	3	1	3	1	2	1	1	1	2	1	1	18
2 Hook Head	Wexford	1	1	1	1	1		2	2	1	1			11
3 Ram Head, Ardmore	Waterford	4	5	3	3	5	4	2	3	3	3	3	3	41
4 Galley Head	Cork	1	2	2	1	2	2	1	1	1	1	1	1	16
5 Castle Point	Cork	1	1	1	1	1	1	1	1	1	2	1	1	13
6 Sleah Head	Kerry	7	4	6	3	3	3	4	3	2	5	2	2	44
7 Loop Head	Clare	2	2	1	1	1	2	2	1	2	1	1	2	18
8 Black Head	Clare	1	1	1	1	4	2	1	1	1	1	1	1	16
9 Downpatrick Head	Mayo	2	2	1	1	1	1	1	2	1	1	1	1	15
10 Malin Beg	Donegal	1	1	1	1									4
11 Dunree Head	Donegal	2	1	1	1	1	1	1	1	1	1	1	1	13
12 Ramore Head, Portrush	Antrim	2	2	2	4	2	3	3	2	2	4	2	3	31
13 Portmuck	Antrim		1	2		2	1		1	2	2	1	2	14
14 Bloody Bridge	Down	2	2	2	2	3	2	3	3	2	2	3	1	27
Total														281

Key Monitoring sites

We have identified 14 inshore monitoring sites (3 in Northern Ireland) where we attempt to obtain at least one effort watch per month. These watches are carried out with a strict protocol in an attempt to reduce some of the

variables. At the two cSAC sites (Castle point and Slea Head) observers were paid to carry out this commitment. Since January 2008, an additional observer is funded to cover Downpatrick Head, Co Mayo as this site was not getting full coverage and it is important geographically as it fills an area between Galway and Sligo Bay. It can be seen from Table 4 that good seasonal coverage has been achieved at most sites. The total number of combined watches (281) at these sites is similar to 2007/8.

Table 5. Location and number of effort watches carried out at other effort sites, May 2008 – April 2009

No.	Location	County	2008							2009				Total		
			May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar		Apr	
1	Clogher Head	Louth							1	1	1	1	1	1	2	8
2	Portrane	Dublin			1	1	1						1			4
3	Dunlaoghaire	Dublin		2						1						1
4	Killiney	Dublin							1							1
5	Wicklow Head	Wicklow												1		1
6	Bray Head	Wicklow	1	1	1	1	1	1	1	1	1	1		1		11
7	Mine Head	Waterford							1							1
8	Power Head	Cork	1				2				1					4
9	Roche's Point	Cork					1							1		2
10	Seven Heads	Cork	1	2	1	2	2	1							1	9
12	Cape Clear Island	Cork	1	2	4	2	2									11
13	Mizen Head	Cork							1	1						2
14	Crow Head, Beara	Cork										1	1			2
15	Dursey, Beara	Cork	2													2
16	Fair Head, Beara	Cork			4	1				1						6
17	Valentia Island	Kerry	3		1									1		5
18	Baltard, Donegal Pt	Clare	1													1
19	Tawin Is.	Galway								2		1	2	2	1	8
20	Mullaghmore More	Sligo	1			2	2	2				1			1	9
21	Aughris, Bundoran	Donegal							1							1
22	St. John's Pt.	Donegal		3	5											8
23	Tawney, Kilcar	Donegal			1											4
24	Inishowen/Malin Hd	Donegal		1	2	1	1									5
25	Magilligan Pt	Derry									1	1	1	1		4
26	Magheracross	Antrim	1					1							1	3
27	Garron Point/Straidkilly	Antrim										1	2	1		4
28	The Gobbins	Antrim											1			1
29	Rathlin Isl.	Antrim									1	1	1			3
30	Torr Head	Antrim							1	1	1	1	1			5
31	Larne	Antrim				1										1
32	Black Head	Antrim		1	1	2	4				1	1	1	1	1	13
33	Groomsport	Down											2	2		4
34	Grey Point, Belfast Lough	Down	5	4	3	5	1				2		1		1	22
35	Newcastle	Down	1	1	3	2	3	1	1							12
36	St. John's Pt.	Down					2				2	1	1	1	1	8
37	Killard Pt.	Down									1	1	1			3
38	Ballyquintan Pt.	Down									1	1	1	1		4
39	Carlingford Lough	Down									1	1	1			3
	Total		18	17	2	20	23	9	10	13	13	16	15	14		195

2.2 Other effort watches

We have received effort watches from an additional 39 sites in twelve counties (Table 5). Several of these sites such as Bray Head, Co Wicklow, Cape Clear, Co. Cork, Black Head, Co. Antrim and Grey Point Co Down have excellent seasonal coverage or reasonable year round coverage, while others are watched less regularly. These additional watches, which represent 40% of all effort watches, are very useful in identifying areas which may have important inshore habitats or seasons for cetaceans and compliment the inshore monitoring programme.

There are two candidate Special areas of Conservation for harbour porpoise at which we carry out land-based monitoring: Roaringwater Bay, Co Cork and Blasket Islands, Co Kerry

Roaringwater Bay

A total of 20 hours of watch effort was completed from Castle Point during the reporting period with 19 sightings to date. Sightings were high during summer and winter but low in the spring (Feb-April). Harbour porpoise were the most frequently recorded species

Slea Head

A total of 73.3 hours of watch effort was completed from Slea Head during the reporting period with 87 sightings to date. This is one of the most well covered sites in Ireland. Harbour porpoise have been recorded in all months, minke whale in 10 months and common dolphin in nine months. Sighting rates varied over the year with a peak in August.

Black Head, Co Clare

A summary of monitoring activities was prepared for distribution at the EU Atlantic Margin meeting hosted by the NPWS in Galway in 24-25 March 2009 (see Appendix II).

2.4 Qualitative analysis of other effort watch sites

Risso's and bottlenose dolphins

Noteworthy results during the reporting period was a continued decline in sightings of Risso's dolphin from the Irish Sea (Counties Down, Louth, Meath, Dublin, Wicklow and Wexford) since 2007 (Fig 1). Between 2001-2006 IWDG received regular sightings of this species off the Wicklow coast during the May-June period. The decline of Risso's dolphin activity was first noted in 2007 and coincided with an increase in bottlenose dolphin sightings. This trend was more pronounced in 2008/9 with a further decrease in sightings of Risso's dolphin which was matched by a continued increase in bottlenose dolphin sightings. Whether these two changes are somehow related will require further monitoring.

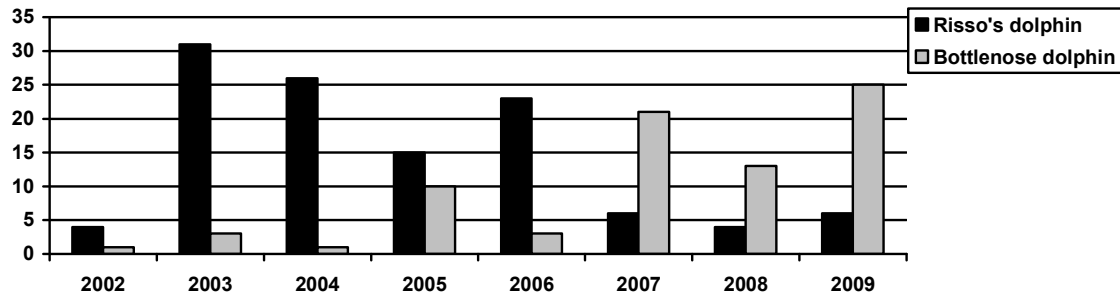


Figure 1. Number of Risso's and bottlenose dolphin sightings off the east coast

Bottlenose dolphins

Bottlenose dolphin sightings continued to increase as they replaced common dolphins as the second most frequently observed species in 2008/9, with 16.5% of all sightings, compared with 14% for common dolphins. There were two sighting events in 2009 (14-15 June and 30-31 August) where bottlenose dolphins were tracked as they moved south along the Irish Sea between the Co. Down and Wicklow coasts. This was made possible by "casual" sighting reports made by members of public.

Fin whales

Over the past decade there are very strong trends showing that in eight of the past 10 years fin whales have arrived in inshore waters off the south coast between 20 May - 25 June. In 2008, they were first reported on 21 August, three months later than their expected arrival, but in 2009 they were first recorded on 17 June, within their expected period. What was unusual about this sighting was that it was off the Dublin coast. This and subsequent October sightings of large baleen whales species with a powerful "blow" lean towards a possible return by fin whales to the Irish Sea.

Along the south coast the data shows a steady build up during summer, culminating in a November peak in west Cork, followed by a decline in sightings in late winter/spring as they move east along the Waterford coast. This may of course reflect a degree of observer effort, as we largely depend on the watch effort of Andrew Malcolm from Ram Head, Co. Waterford, once they leave west Cork, where there is most watch effort.

All fin and humpback whale sightings (Figure 2) show that despite their late arrival and a very poor summer, that the combined sightings in 2008/9 of large whales compared favourably with previous years. 2008/9 was the best year on record for sightings of the globally endangered Humpback whale with an additional three individuals added to the Irish Humpback whale catalogue, bringing the total to 10. Six of the seven humpbacks photo-identified in 2008/9 season were inter-annual re-sightings, suggesting very low numbers in Irish waters. Interestingly, the spike in sightings at 3-4 year intervals suggests some years are intermittent better years for this species, and that 2008/9 was such a year. Based on the previous seven years, fin whale sightings have exceeded those of humpback whales by an average ratio of 4:1. The data suggests that good humpback years are most likely to occur during equally good fin whale seasons.

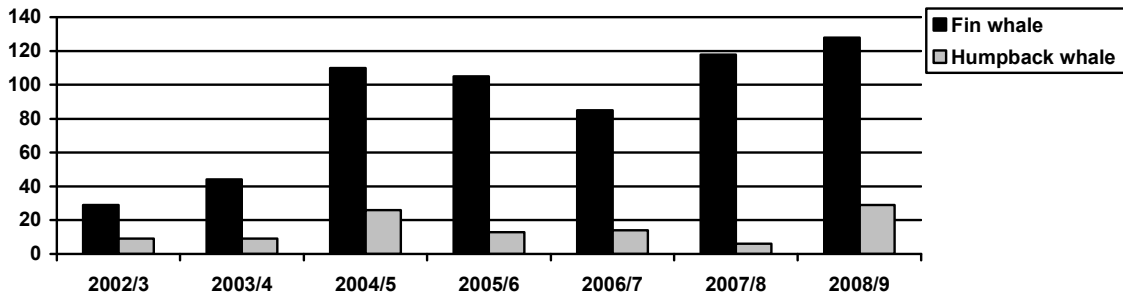


Figure 2 Number of Fin and humpback whale sightings in all Irish waters

Killer whales

The mean number of killer whale sightings 2000-2009 is 9.5 per year, with an average group size of 2.7 individuals. Up to October 2009 there were 13 validated records (Fig 3), suggesting that 2009 will be a good year for sightings of this apex predator. In common with previous years, more than 75% of sightings were reported May-September, which likely reflected variation in watch effort per season. Their distribution shows a strong bias towards offshore Islands such as Cape Clear and Dursey Islands, Co. Cork, Blasket Islands, Co. Kerry, Inisboffin, Co. Galway, Achill and Iniskeas/Mullet Peninsula, Co. Mayo, Aranmore and Tory Island, Co. Donegal and Copelands, Co. Antrim. Interestingly, photographic evidence from killer whales observed from 18 April 2009 to date are of sub-pods of 2-5 animals which have been matched to the Scottish “West Coast” Community, whose core habitat are Hebridean waters, while genetic studies suggest a historic range as far north as the Faeroes. According to Andrew Foote, University of Aberdeen, their diet seems to be marine mammal based, which was supported by video evidence of 3 killer whales foraging off Slyne Head, Co. Galway on 12/09/09 within metres of seal colony.

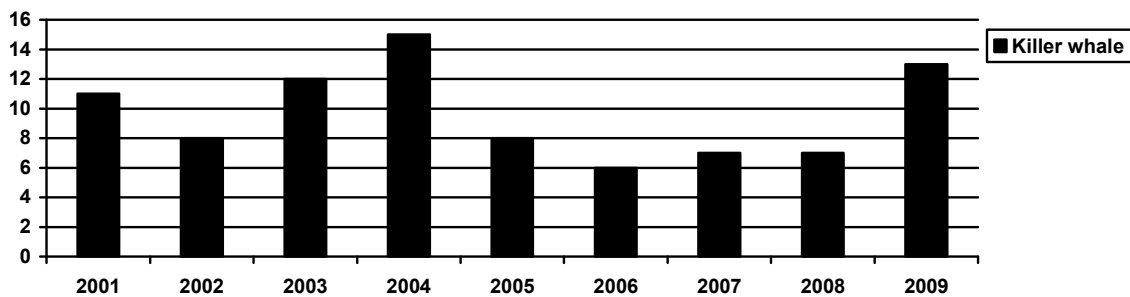


Figure 3. Killer whale sightings in all Irish waters

Work package 3

IWDG Ship Surveys

Tasks:

- 3.1 to target seasons and areas with historically poor coverage
- 3.2 carry out four months of cetacean surveys on ships of opportunity each year
- 3.3 avail of opportunities on state research, commercial, naval and other vessels
- 3.4 consolidate existing ferry surveys and establish a new route from Northern Ireland
- 3.5 provide resources and training to volunteers willing to undertake ship surveys on behalf of the IWDG
- 3.6 encourage volunteers to avail of opportunities on Irish foreign vessel observer programme in Irish waters
- 3.7 Publish/Review Ship Survey data

Progress during ISCOPE II:

- 3.1 Following agreement at an ISCOPE II Meeting in January 2008, ISCOPE survey effort was be focused on the Irish Sea and on Northern Irish waters, though not exclusively so.
- 3.2 In June 2008, Clare Murray was taken on as ISCOPE Ship Surveys Co-ordinator. Under the terms of her contract Clare completed three months of ship survey time at sea between June 2008 and the 31 April 2009. Clare also was responsible for ensuring that experienced surveyors from the IWDG MMO panel completed a further three months of survey time in the same time period.
- 3.3 Following agreement at a further ISCOPE II Meeting in September 2008, Clare was contracted to complete a further two months of survey effort between 31 April 2009 and 1 September 2009. Due to scheduling of surveys on the R.V. Corystes, Clare completed her final survey on the 18 September 2009.
- 3.4 We have carried out 16 ship surveys during the reporting period (Table 7). Cruise reports are available on the website, except for surveys marked with an asterix, which lack cruise reports either due to the short duration of the survey and/or zero sightings recorded.

Table 6. Ship surveys conducted under ISCOPE-II from 1 May 2008 and 18 September 2009

Year	Month	Vessel	Reg	Cruise	Cruise Area	IWDG Surveyor	From	To
2008	August	Corystes	UK	AFBI Nephrops Survey	Irish Sea	Clare Murray	8/4/2008	8/9/2008
2008	August	Corystes	UK	AFBI Autumn Herring Acoustic Survey*	Irish Sea	Clare Murray	8/26/2008	9/14/2008
2008	October	Corystes	UK	AFBI Groundfish Survey	Irish Sea	Peter Tuffey	10/10/2008	10/28/2008
2008	Nov - Dec	CEFAS Endeavour	UK	CEFAS Groundfish Survey	Irish & Celtic Sea	Clare Murray	11/5/2008	12/6/2008
2008	Nov - Dec	Thalassa	FR	IFREMER Groundfish Survey	Celtic Sea	Peter Tuffey	11/14/2008	12/1/2008
2009	January	Celtic Voyager	IRL	MI Nutrient Survey	S & E Shelf	Clare Murray	1/18/2009	1/28/2009
2009	Jan-Feb	Corystes	UK	AFBI Gadoid Survey	Irish Sea	Peter Tuffey	1/26/2009	2/6/2009
2009	February	Corystes	UK	AFBI Nutrient Survey*	Irish Sea	Julia Baer	2/8/2009	2/13/2009
2009	February	CEFAS Endeavour	UK	CEFAS Plankton Survey*	Irish Sea	Peter Tuffey	2/19/2009	3/1/2009
2009	March	Corystes	UK	AFBI Groundfish Survey	Irish Sea	Clare Murray	3/1/2009	3/13/2009
2009	March	Corystes	UK	AFBI Oceanographic Survey*	Irish Sea	Paula O'Regan	3/29/2009	4/5/2009
2009	May - Jun	Corystes	UK	Juvenile Gadoid Survey	Irish Sea	Clare Murray	5/26/2009	6/11/2009
2009	July	Corystes	UK	AFBI Summer Herring Acoustic Survey	Irish Sea	Clare Murray	7/5/2009	7/11/2009
2009	Jul - Aug	Corystes	UK	AFBI Nephrops Survey	Irish Sea	Clare Murray	7/30/2009	8/2/2009
2009	August	Corystes	UK	AFBI Biological Oceanography Survey	Irish & Celtic Sea	Clare Murray	8/15/2009	8/21/2009
2009	August	Corystes	UK	AFBI Autumn Herring Acoustic Survey	Irish Sea	Clare Murray	8/24/2009	9/18/2009

3.5 Between 1 May 2008 and 18 September 2008, 234 survey days were completed. This amounted to a shortfall of six days from the total amount of 240 days planned for the period 1/5/08 – 1/9/09. A total of 1,146 hours of on-effort survey time was logged with 24% of this in \leq sea state 3 (389hrs) and 79% in \leq sea state 4 (907hrs).

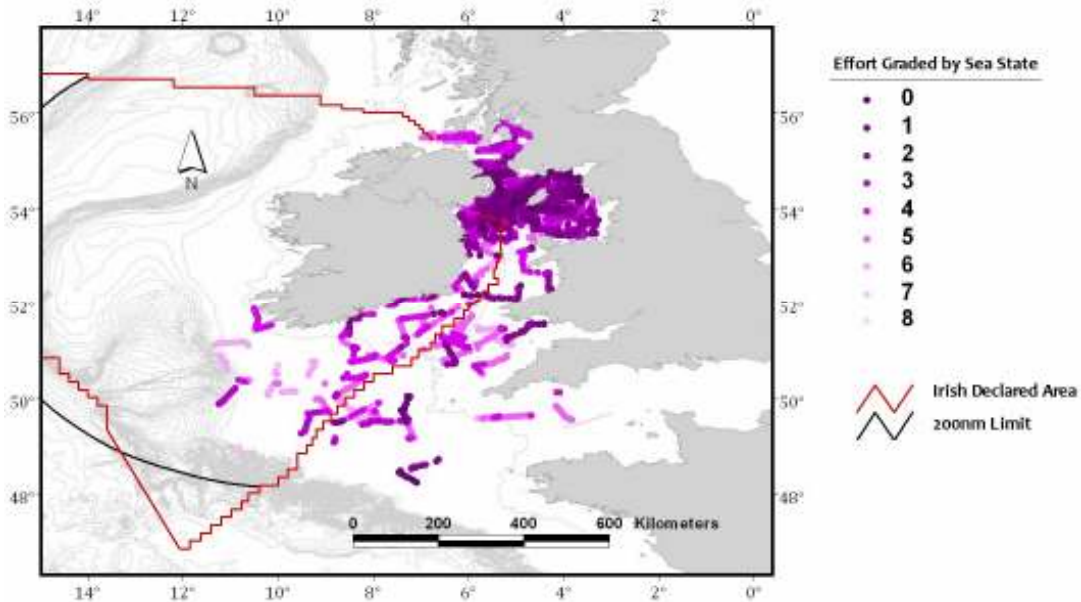


Fig 1. Survey effort, graded by sea state, conducted under ISCOPE II between 1/5/08 and 18/9/09

3.6 Four vessels from three countries were used to complete the surveys.

3.7 181 sightings of 5 confirmed cetacean species, one seal species and one turtle species were recorded, accounting for 1822 animals. The species confirmed were: common dolphin (*Delphis delphis*); harbour porpoise (*Phocoena phocoena*), pilot whale (*Globicephala melas*); fin whale (*Balaenoptera physalus*); minke whale (*Balaenoptera acutorostrata*); grey seal (*Halichoerus grypus*) and leatherback turtle (*Dermochelys coriacea*).

Table 7. Sightings, counts and group size ranges for cetaceans and megafauna sighted between May 2008 and September 2009.

Species	No. Sightings	No. Individuals	Range of Group Size
<i>Common Dolphin</i>	104	1671	1-300
<i>Harbour Porpoise</i>	23	50	1-4
<i>Pilot Whale</i>	1	3	-
<i>Fin whale</i>	4	7	1-3
<i>Minke Whale</i>	9	10	1-2
<i>Unidentified cetacean</i>	3	3	-
<i>Unidentified dolphin</i>	19	53	1-10
<i>Unidentified whale (blow)</i>	9	13	1-5
<i>Grey Seal</i>	8	11	1-3
<i>Leatherback Turtle</i>	1	1	-

- 3.8 Ferry surveys continued on a monthly basis on three ferry routes across the Irish Sea utilising ships from Irish Ferries (in the Republic of Ireland) and P&O Ferries (in Northern Ireland). The enlarged pool of surveyors available to conduct surveys on these routes means that all surveys can run at full capacity. Indeed the growing pool of surveyors means that we are having difficulty getting everyone out on surveys as much as they would like, we are therefore proposing to open another route, possibly to France or between England and Northern Ireland in 2010. We are also working with our ARC (Atlantic Research Coalition) partners in MarineLife on sharing survey effort on their new route from Fleetwood to Larne on board Stenaline Ferries.
- 3.9 We are also increasing the number of survey leaders working on the Ferry surveys with the addition of Debbi Pedreschi as a survey leader. Brian Glanville (Dublin – Holyhead) and Chris Wilson (Rosslare-Pembroke) continue to take on the roles of survey leader on many surveys, easing the burden on the existing team leaders on these routes (Dave Wall and Conor Ryan). In Northern Ireland Dave Williams and Ian Enlander continue to share the role of team leader on the Larne-Cairnryan surveys. These developments have consolidated IWDG’s position on these routes and leave them on a strong footing for their ongoing use in cetacean monitoring on the Irish Sea.
- 3.10 Due to work pressures on other projects the planned training courses for IWDG Ferry Surveys did not take place in the current work period, however it is proposed to proceed with training courses in Dublin and Belfast in the near future.

Work package 4

Maintain cetacean database and develop monitoring indices

Tasks

- 4.1 Validate all sighting and stranding records
- 4.2 Update and maintain database
- 4.3 Source historical and unpublished records including those stored outside of Ireland
- 4.4 Derive monitoring indices
- 4.5 Develop website and database
- 4.6 Develop co-ordination and data sharing with CeDaR in Northern Ireland
- 4.7 Liase with the Biological Records Centre to assist the development of biological recording systems in the Republic of Ireland

Progress during ISCOPE II:

- 4.1 Between 1 May 2008 and 30 April 2009 the IWDG validated 1,493 sighting records and 128 stranding incidents involving 132 cetaceans. In addition 160 basking shark records were received and validated, an increase of 40.3% on the same period 2007/8.
- 4.2 Between 1 May 2008 and 30 April 2009 the IWDG database was populated with 1,493 sighting records and 128 stranding records.
- 4.3 This task is beyond the ability of the IWDG and is working with the National Biodiversity Data Centre to develop this as part of the Joint Irish Cetacean Database initiative.
- 4.4 This is a key deliverable and this will be developed during the final year of ISCOPE II and will be presented in a supporting document covering the ISCOPE II and some of the ISCOPE period.
- 4.5 The website is developed by Brendan Carton.
- 4.6 No contact with CEDaR
- 4.7 The IWDG were represented (SB, DW, PW, BC) at the Joint Irish Cetacean Database meeting in Waterford on 28 May 2008. The IWDG contributed to the twice-yearly NBDC Newsletter by submitting a review of sightings and strandings. The second newsletter was published in Feb 2009. IWDG are also represented (SB) on the Board of Management of the National Biodiversity Data Centre.
- 4.8 Others:
 - a) IWDG also prepared a detailed submission to the INEMO proposal made by Oliver O’Cadhla of CMRC. If this initiative has not been funded.
 - b) IWDG prepared a submission to the Cork County Biodiversity Action Plan.

- c) IWDG contributed a chapter covering cetaceans and basking sharks and other marine megafauna for the revised edition of the Natural History of Cape Clear Island

Deliverables and Targets

As many resources including promotional and recording material are already available from ISCOPE, the target deliverables are aimed more at specific areas and better interpretation of the data.

The project deliverables include:

- i) **Target 10 newspaper articles, 10 radio interviews and two TV items per annum.**
- ii) Target 40,000 website requests per month and 1,200 members by the end of 2009.
- iii) Target to record 200 strandings and 1750 sightings per annum by 2009.
- iv) *More extensive geographical and seasonal sightings effort in waters >12nmls offshore*
- v) **monthly effort watches at 10 key sites (including the two harbour porpoise cSAC)**
- vi) **monthly effort watches at two sites in Northern Ireland**
- vii) Develop a procedure to derive annual monitoring reports for Annexed species and within cSAC
- viii) **Present results from ISCOPE at one national and one international conference per annum**
- ix) **Participate in international research consortiums**
- x) *Work with state agencies and academic institutions to formalise a National Cetacean database*
- xi) **Prepare a review for Northern Ireland with recommendations for MPAs**
- xii) **Prepare a draft conservation assessment of all cetacean species recorded in Irish waters**
- xiii) **Continue to participate in the SEA process**

(bold indicates completed or nearly completed)

Six of the deliverables identified above have been completed, two are partially completed and three not completed. Two of these (website and members) and number of strandings and sightings) are unlikely to be completed during this project but vii) developing monitoring indices will be completed during the last 6 months.

Website

Analysis of the AWStats for www.iwdg.ie is shown in Figure 9. We noticed that these automated statistics had stopped working and reported the fault on 29 September. The fault was not rectified until 25 November with the resulting loss of three full months data (Aug-Oct) and partial data from July and November, thus these five months are not presented.

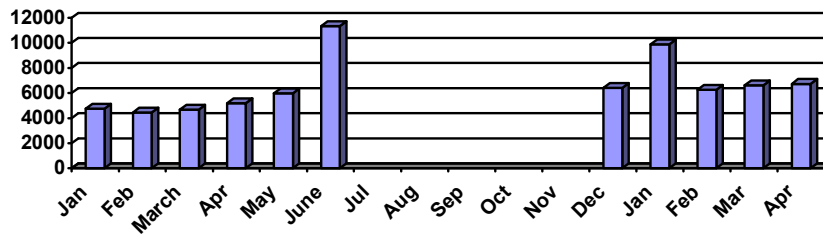


Figure 9. Unique visitors January 2008 to October 2008

Most (65%) of the duration of each site visit was less than 30 seconds, suggesting most people did not explore the site once they had visited it. There was a peak in hits in June, which seemed to be due to the sighting of killer whales off Northern Ireland as the best link was from the www.bbcnorthernireland, and January 2009 which coincided with the live stranding of a fin whale in Courtmacsherry, Co Cork. If we look at the pages most used we find iscope/sighting pages are those most visited as well as species profiles. This was consistent with previous analysis. The new RSS feed facility was very popular with sighting feeds and news feeds dominating.

The key search phrase was the name Irish Whale and Dolphin Group, IWDG or Irish Whale and Dolphin (42%) indicating that people had heard of the name and were searching for us on the internet. This is up from 14% last years suggesting that more people have heard about the IWDG.

Media coverage

An indicative list of media articles and coverage is shown in Table 9.

Table 9. Indicative list of media coverage during May to October 2008

Date	Media	Subject	Who
13 May	Radio Kerry	Recent Sightings	MO'C
22 May	Oceans Radio Donegal	Ballyshannon workshop	PW
23 May	BBC Radio Foyle Derry	IWDG at Biodiversity day	PW
10 Jun	BBC Northern Ireland	Recent strandings	MO'C
16 Jun	BBC Northern Ireland	Killer whale sightings	PW
16 Jun	BBC Lough Foyle	N. Irish Killer whales	PW
18 Jun	News Talk with Sean Moncrief	Killer whales in Irish waters	PW
19 Jun	Belfast Local Radio	Killer whale sightings	MO'C
26 Jun	Inishowen Radio	Dolphin strandings in area	PW
11-22 Aug	RTE Radio 1 & 2 Ad campaign	Whale Watch Ireland 2008	PW
15 Aug	Mooney Goes Wild RTE 1	Current work on cetaceans in Ireland	SB
18-22 Aug	Local, regional & national print and paper	Whale Watch Ireland 2008	PW
23 Aug	Radio Kerry	WhaleWatch Ireland	MO'C
15-19 Sept	Regional & National Media blitz in. RTE1 5-7 live 19/9	Blue whale sighting	PW
19 Sept	Newstalk	Blue whales	SB
25 Sept	Mooney Goes Wild RTE1	Harbour porpoise Surveys	SB
12 Oct	Radio Kerry	Fin whale stranding	MO'C
15 Oct	Kerryman Newspaper	Fin whale stranding	MO'C
18 Oct	West Cork People	Humpback whale sightings	PW
30 Oct	Radio Kerry	Dolphin strandings	MO'C
Regular	EHS Coast publication, British Wildlife, Marine Times	Sighting Summaries	PW

SB= Simon Berrow, DW= Dave Wall, MO'C=Mick O'Connell, PW= Pádraig Whooley

Presentations

1. The IWDG made a presentation on cetacean monitoring at the IEEA Annual Conference in the Marine Institute, Galway on 15 October.

Publications

1. O'Connell, M. and Berrow, S. (2008) Records from the Irish Whale and Dolphin Group for 2007. Irish Naturalists' Journal 29(1), 40-45.

Accounts

During this period George Delaney prepared ISCOPE II accounts. A breakdown of expenditure for the period May 2008 to April 2009 and the annual funding allocated is shown in Table 10. The IWDG have all accounts audited each year. A full set of accounts for ISCOPE II can be supplied on request.

There was a carry over for WP3 (Ship Surveys) from year 2 of €6,500 which accounts for the increased expenditure in Year 3. Additional fieldworkers were contracted to make up the shortfall in ship time carried over from Year 2.

We allocated €1000 to ensure effort watches were carried out at Downpatrick Head, Co Mayo.

There is around €1000 remaining which is allocated to printing of the ISCOPE II Final Report.

Table 10. Summary accounts of expenditure (May 2008 to April 2009)

Task	Who	Item	Spent	Allocated	Available
Manager	SB	(12 days @ 200 pd)	2400	2400	0
		Printing final report	0-	1000	1000
Sub-total			2,400	3,400	1000
		Telephone @ 300 per month	1664.19	3600	1935.82
		Sundries (incl. postage) @ 300 per month	2318.21	3600	1281.80
		Equipment	3268.89	0	-3268.89
		Insurance	1925.72	2500	574.28
		Printing	64.5	0	-64.5
Sub-total			9,241.49	9,700	458.51
1.1/2.1	All	Promote ISCOPE (10 days @ 200 pd)	1200	2000	800
1.2/2.2	All	Training courses (12 days @ 200 pd)	2000	2400	400
		Travel expenses @ 400 per month for 9 months	3907.60	3600	-307.6
Sub-total			7,107.6	8,000	892.40
2.4	Con	Monitor cSACs (24 days at 200 pd)1	3600	4800	1200
		Expenses @ 50 pd	900	1200	300
	SF	Effort watches at Downpatrick Head	1000	0	-1000
Sub-total			6,000	6,000	-1000
3.1	CM	Field work @ 3000 per month (for 4 months)	12000	12000	0
	JB/PO'R/PT	Fieldwork (JB & PO'R =750 each; PT=4492.53)	5992.53		-5992.53
	DW	Expenses @ 250 per month (for 4 months)	904.64	1000	95.36
	DW/CR	Co-ordinate ferry surveys (4 days @ 200 pd)	944	800	-144
3.2	DW	Data entry and reporting (6 days @ 200 pd)	1200	1200	0
Sub-total			21,041.17	15,000	-5041.17
4.1	PW	Validate records @ 200 pd 1	6996	8100	1104
4.2	PW	Maintain database @ 200 pd 1	6996	7900	904
4.3	LF/AK	Monitoring indices (10 days @ 200 pd)	2000	2000	0
4.4	MO'C	Validate and upload stranding records2	1999.60	2000	0.40
Sub-total			17,991.60	20,000	2008.40
Others					
Dissemination	All	Presentation at conferences/seminars	3758	0	-3758
Website	BC	Website and database management (5 days @ 400 pd)	2130.85	2,000	-130.85
Accounts	GD	12 days @ 200 pd	2400	2,400	0
Total cost			72,070.71	66,500 (73,006)	935.29

Appendix I: ISCOPE Steering Committee

Members

Environment and Heritage Service (Northern Ireland):

Gary Burrows

Irish Whale and Dolphin Group:

Simon Berrow (ISCOPE Co-ordinator)
Mick O'Connell (Strandings Co-ordinator)
David Wall (ShOPs Co-ordinator to June 2008)
Clare Murray (Ships Co-ordinator for ISCOPE II from June 2008)
Pádraig Whooley (Sightings Co-ordinator)

Heritage Council:

Cliona O'Brien

Marine Institute:

Michael O'Conneide (to September 2008)
Graham Johnson (from September 2008)

National Parks and Wildlife Service:

David Lyons
Eamonn Kelly (from September 2008)



Black Head, County Clare

Black Head is a low lying limestone headland at the northwest tip of the Burren, Co Clare. Water depth off the headland drops quickly to 25m causing a local upwelling. A small lighthouse is situated at the site, which is popular with shore anglers. The Irish Whale and Dolphin Group carry out monthly cetacean watches from the lighthouse.



Aerial image of Black Head



Harbour porpoise

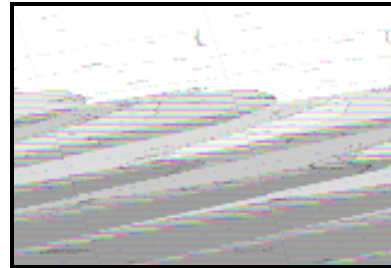


Chart of Black Head showing depth contours

At least six cetacean species have been recorded from this site including harbour porpoise, bottlenose and common dolphin, killer, sperm and possibly false killer whale. The harbour porpoise is by far the most frequently sighted species.

Land-based effort watches have been carried out since 1996. To date 79 watches have been completed with an average duration of 92 minutes and a cumulative total of 122.3 hours. A total of 66 sightings have been made on effort with a sighting rate of 0.5 sightings per hour and an abundance of 2.5 animals per hour.

On a simple level, effort watches can be used to record the presence or absence of a species from a site.

In Table 1 we can see harbour porpoise have been recorded in most months over a number of years while common dolphin only in the summer and autumn and bottlenose dolphin very rarely.

Summary of effort watches from Black Head

Number of watches	79
Total hours watched	122.3 hr
Mean mins per watch	92 min
Number of sightings	66
Mean sightings per hour	0.5
Number of animals seen	303
Mean animals per hour	2.5
Actual species	3 (HP, BND, CD)

Table 1. Cetacean occurrence during effort watches at Black Head, Co Clare (ND=No Data)

Location	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	% Occurrence
Harbour porpoise	2005	ND	ND	√	√	√	√	√	√			√		70
	2006	√	√	√	√	√	√	ND	ND			√	ND	78
	2007	√	√	ND			√	√	√	ND			ND	56
	2008		ND					√		√	√		ND	30
Common dolphin	2005	ND	ND											0
	2006							ND	ND		√		ND	11
	2007			ND						ND	√		ND	11
	2008		ND	√				√					ND	20
Bottlenose dolphin	2005	ND	ND											0
	2006							ND	ND				ND	0
	2007			ND						ND		√	ND	11
	2008		ND										ND	0

Trends in abundance

We are currently carrying out an analysis of data from ISCOPE (a scheme which co-ordinates All-Ireland cetacean stranding and sightings schemes) for the National Parks and Wildlife Service to determine trends in abundance. We can use the number of sightings or the number of animals as a measure of abundance. Harbour porpoise were observed on 31 watches (41%). There was an average of 0.8 groups of harbour porpoises sighted per watch with an overall mean of 5.1 animals per group. This is quite a high group size for harbour porpoise compared to other sites in Ireland.

O'Brien et al. (2008) took a sub-sample of the data to carry out an ANOVA and found no significant effect of season but did show that the number of porpoises recorded at Black Head were significantly higher than two other sites (Fanore and Spiddal) within Galway Bay. We used all the data and found a significant difference ($P < 0.05$) between seasons with a peak in sightings and abundance in summer (Fig 1.).

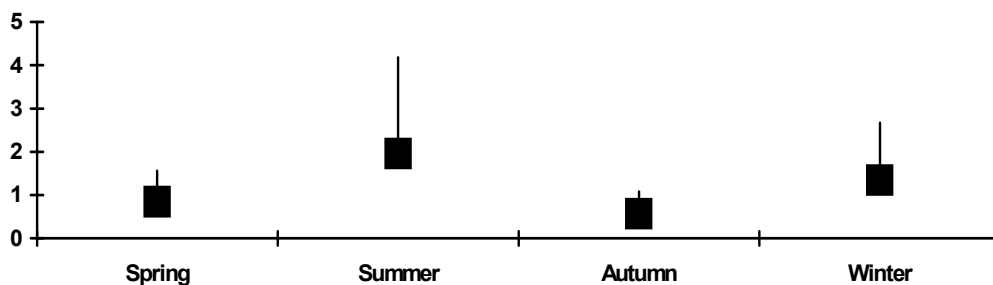


Figure 1 Mean (\pm SE) number of harbour porpoise

Trends in the abundance of harbour porpoises are shown in Figure 2. The number of sightings show the same trend. Although there appears to be a slight decline in the abundance of harbour porpoises seen off Black Head the trend is not significant and thus sightings rate and relative abundance can be considered stable.

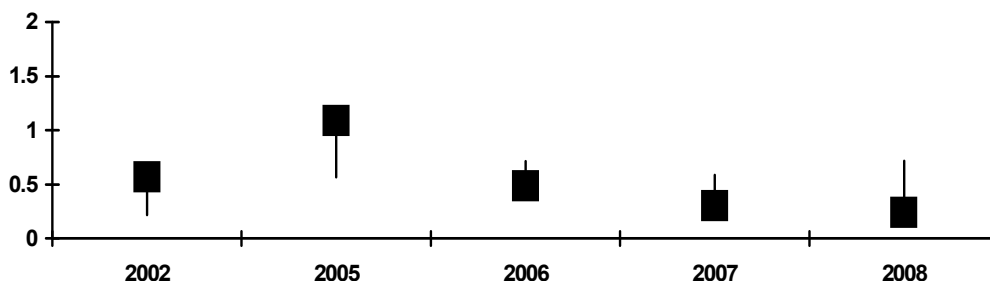


Figure 2. Mean (\pm SE) number of sightings per annum

Reference: O'Brien, J., McGrath, D., Berrow, S. and Brophy, D. (2008) Distribution and Abundance of Cetaceans in Galway Bay; an evaluation of monitoring techniques and assessment of site suitability for future SAC designation. Report to the National Parks and Wildlife Service.

IWDG Inshore Cetacean Monitoring Scheme

Effort related sightings data can be used to determine the relative abundance of cetaceans and their seasonal occurrence. Watches are only carried out in favourable sea-states and good visibility which can effectively monitor the coastal zone, up to 20km offshore for large whales with highly visible cues (e.g. blows). Trials have shown observer experience and optics are the two biggest sources of variability once sea-state is accounted for. The IWDG carry out monthly watches at 14 sites around the island of Ireland on behalf of the National Parks and Wildlife Service and the Northern Ireland Environment Agency. For more information see www.iwdg.ie/iscope



Cornhshool, Oidhreacht agus Rialtas Áitiúil
Environment, Heritage and Local Government