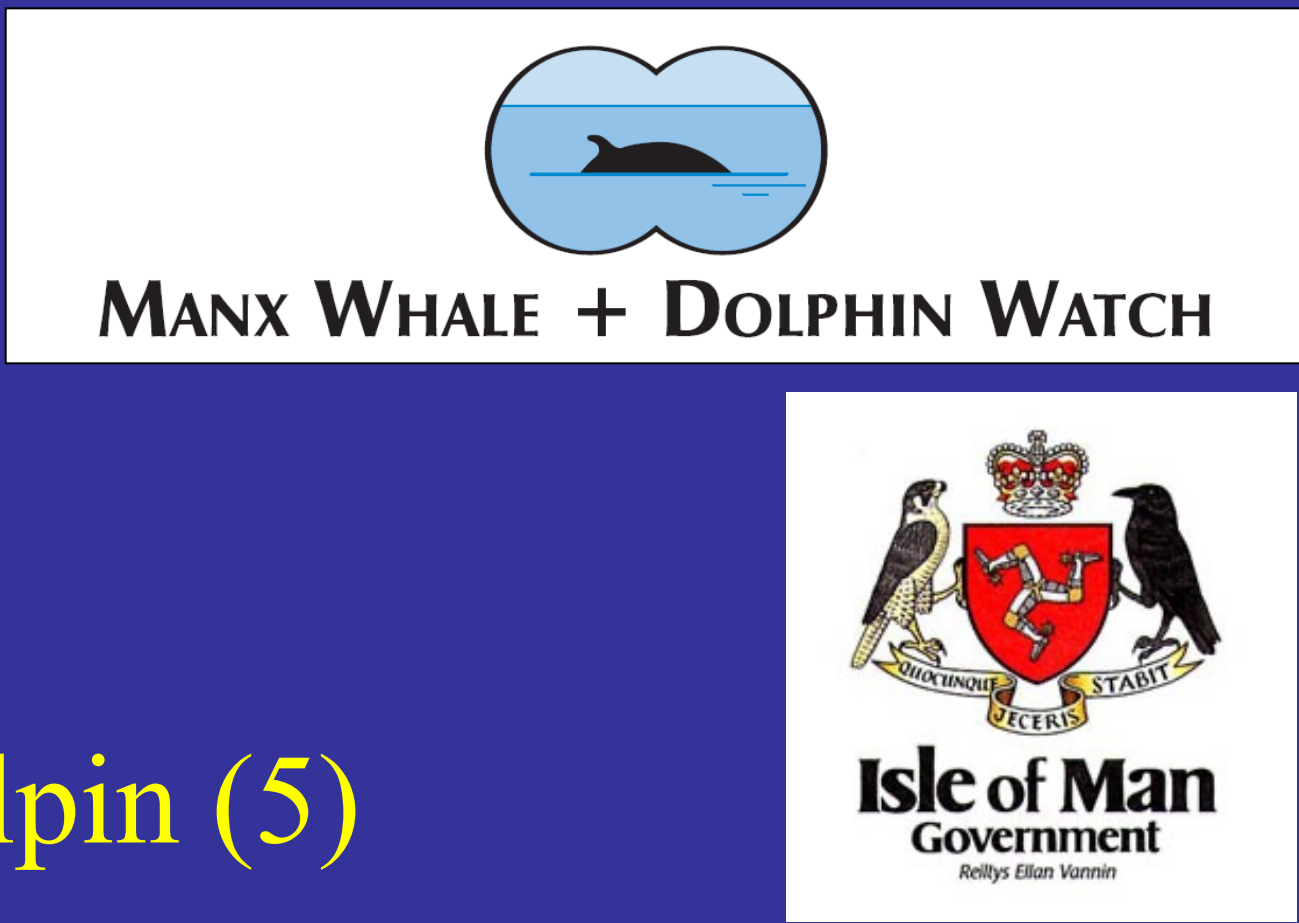




Charting Undiscovered Waters: Cetaceans around the Isle of Man



Thomas Felce (1), Eleanor Stone (2), Simon Mitchell (3), Sharon Bond (4), John Galpin (5)

(1-5) Manx Whale and Dolphin Watch, Ballaquane, Dalby, Isle of Man, felcet@hotmail.com

Introduction

The Isle of Man is uniquely located in the northern Irish Sea, has varied coastal habitats and relatively deep surrounding waters.



Fig 1. Where is the Isle of Man?

In 2006, the Manx Whale and Dolphin Watch (MWDW) launched a website (www.mwdw.net) on which the public could record opportunistic sightings of cetaceans. The huge response highlighted the need to do systematic research within territorial Manx waters and in 2007 the first Manx Cetacean Surveys were carried out.

Methodology – Data collection

1. Opportunistic sightings data, recorded and verified through the website
2. Effort and sightings data from boat surveys
3. Risso's dolphin Photo Identification images

Boat survey methodology

Isle of Man waters were divided into eight research boxes (see Fig.2), each of which could be surveyed in one day. Within each box were four survey routes. The route taken within the survey box was chosen randomly. The surveys followed standard line transect sampling protocol

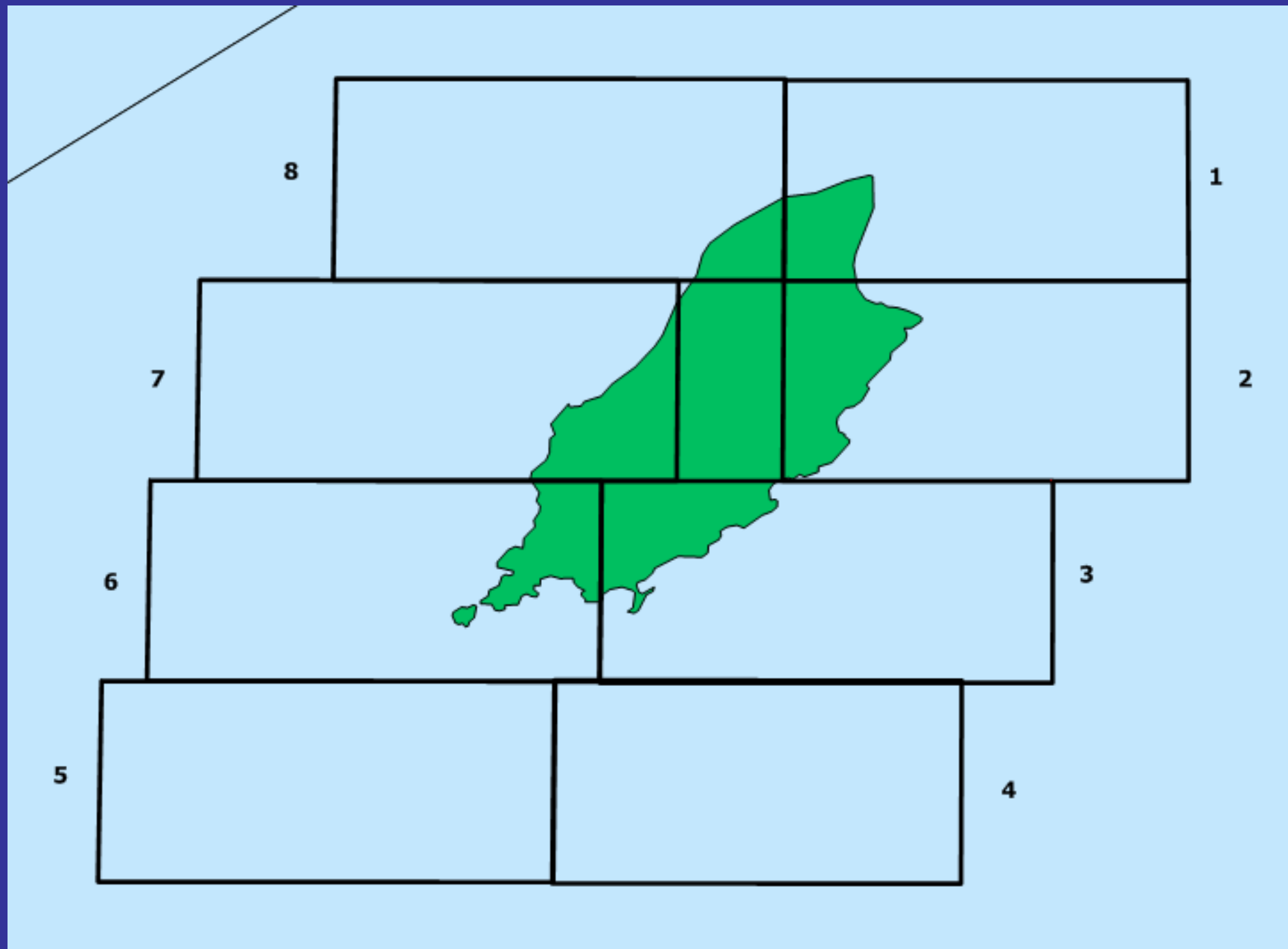


Fig 2. Boat survey research boxes

Results

1) Opportunistic sightings (2006 and 2007)

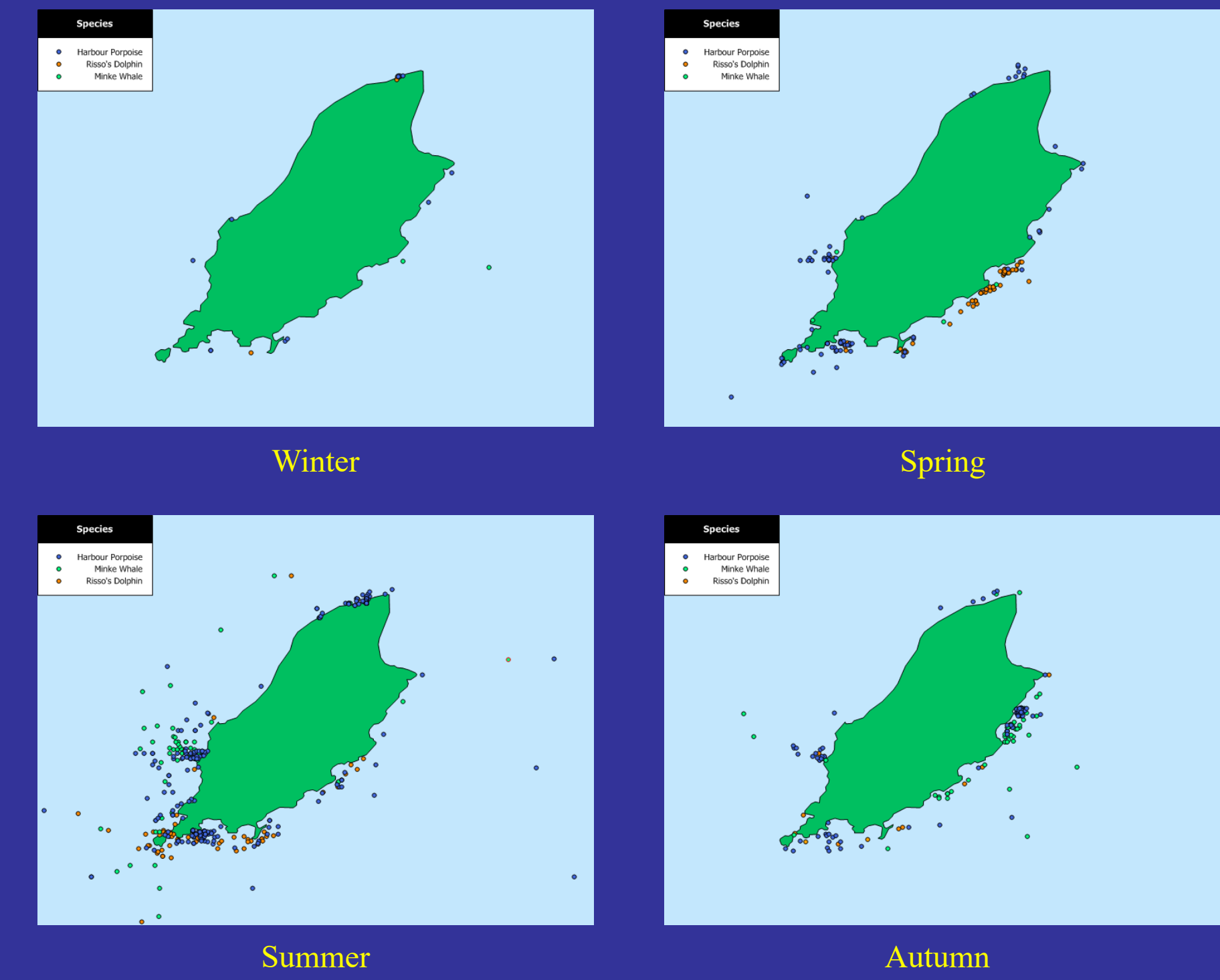


Fig.3 Distribution maps of the three focus species, showing all round distribution (temporal and spatial) of Harbour Porpoise and seasonal movements of Risso's dolphin and Minke Whale

	Harbour Porpoise	Minke Whale	Risso's Dolphin	Common Dolphin	Bottlenose Dolphin	Oca	Fin Whale	Sei Whale	Humpback Whale	White Sided Dolphin	White Beaked Dolphin
Jan	1	2	1	0	4	0	0	0	0	0	0
Feb	10	0	4	0	7	0	0	0	1	0	0
Mar	10	1	4	0	0	1	0	0	0	0	0
Apr	38	0	14	1	2	0	0	0	0	0	0
May	39	3	42	1	3	1	0	1	0	1	0
Jun	88	17	42	37	2	6	0	0	0	0	1
Jul	93	26	20	11	0	1	0	0	0	0	0
Aug	40	25	14	4	5	1	1	0	0	0	0
Sept	27	29	6	2	0	0	2	0	0	0	0
Oct	20	37	5	0	0	1	0	0	0	0	0
Nov	32	39	3	0	0	1	0	0	0	0	0
Dec	1	0	0	0	0	0	0	0	0	0	0
Total	399	180	154	56	21	12	3	1	1	1	1

Fig.4 Opportunistic sightings, all species, 2006-2007

2) Boat surveys: A total of 2590km of survey effort was completed with 162 marine mammal sightings (see Fig 5. and Fig 6.)

Species	Number of Sightings	Number of Individuals
Harbour Porpoise	98	168
Minke Whale	7	11
Risso's Dolphin	12	36
Atlantic Grey Seal	44	119
Unidentified Cetacean	1	1

Fig 5. Breakdown of boat sightings

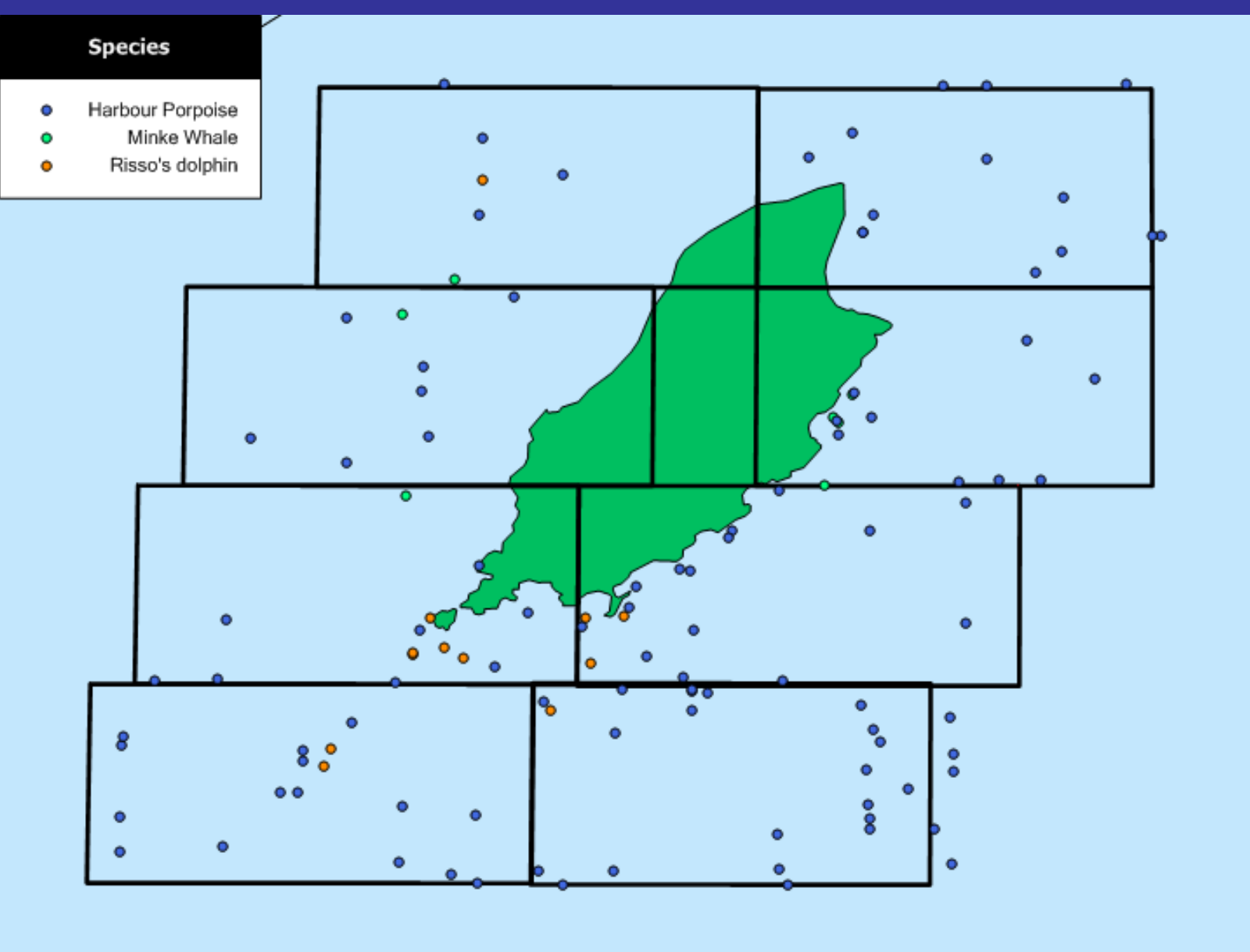


Fig 6. Distribution of boat sightings

Distance sampling analysis, using DISTANCE 4.1, of Harbour porpoise sightings, derived a population density of 0.18/km² and hence an abundance estimate of 814 individuals (501-1322; CV 24.5%), within all Manx waters.

3) Risso's dolphin catalogue: From 10 encounters, a catalogue of individuals was created. This currently consists of 20 'well marked' individuals, as well as 7 which can be identified from the right hand side only and 5 from the left hand side only. At least 4 calves were also seen. The low number of re-sights suggests that we have only identified a small proportion of the population

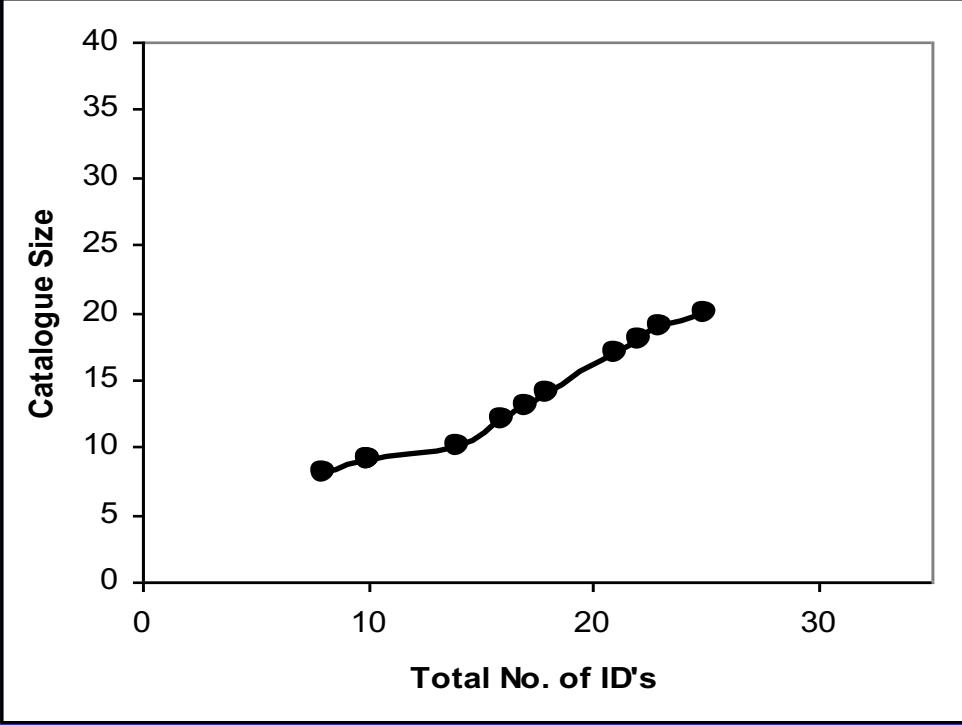


Fig 7. Risso's dolphin discovery curve



Fig 8. Adult and calf (July 2007)

Conclusions:

Manx waters are rich in a diverse number of cetacean species; however, attention should be focussed on the three predominant species:

- Harbour Porpoise – a significantly sized population which utilises all Manx waters, throughout the year
- Risso's dolphin – regular presence throughout the year, including groups with young calves and almost entirely east and south coast presence
- Minke Whale – significant presence in summer and autumn showing strong seasonal movement from west to east coasts, perhaps related to movement of shoaling fish.

Future work for 2008 :

- Further increase public awareness to increase the number of opportunistic sightings
- Increase systematic land-based effort related watches (a small number have already been carried out, but too few to give rise to meaningful data set).
- Increase boat survey work by acquiring our own research vessel
- Build up Risso's dolphin ID catalogue and start Minke whale and Bottlenose dolphin catalogues.

Acknowledgements : Thanks to the Department of Agriculture Forestry and Fisheries (DAFF) and Department of Tourism and Leisure (DoTL) for financial support for the boat surveys and to DAFF for financial support to allow us to come to ECS. Also to our skipper Robin Gerrard and the many volunteers that have taken part on boat surveys and who have reported so many sightings.