Cetacean research in Manx waters 2015

By Tom Felce

Boat based surveys:

Only 11 boat based surveys were carried out in 2015, with 1111.4 kilometres surveyed overall. The lack of surveys was caused primarily by periods of almost unrelenting high wind speed throughout the year, but also due to a lack of availability of either skipper or vessel or both.

Of the 1111.4kms surveyed, 671.8kms (60.4%) were surveyed in ideal conditions (sea state either 0 or 1, good visibility), with 439.6kms (39.6%) in less than ideal conditions (sea state 2 or higher and/or poor visibility). This is important because the rate of sightings changes massively depending on sea state, from 0.18 sightings per km in sea state 0 or 1, to only 0.025 sightings per km in sea state 2 and above, an order of magnitude lower. It is because of this huge difference in sighting frequency that surveys should preferentially be carried when the sea state is 0 or 1, which in 2015, happened very infrequently.

Overall, there were 136 sightings during boat surveys, equating to 0.12 sightings/km. Since surveys began in 2007, the sightings rate has been 0.10 sightings/km. This slightly increased sighting frequency seems unlikely considering the amount of surveying carried out in sea state 2 or higher. However, due to weather constraints and a lack of surveys overall, most surveying was carried out on the west and south west coasts of the island, areas known from previous surveys to have high densities of cetaceans and basking sharks.

Table 1: Species composition of sightings from boat based surveys

Species	No. of sightings	No. of individuals	% of all sightings
Basking Shark	10	20	7.3
Harbour porpoise	113	236	83.1
Minke whale	3	4	2.2
Risso's dolphin	3	12	2.2
Short beaked Common dolphin	4	47	2.9
Unidentfied species	3	3	2.2

The number and therefore percentage of total sightings of Minke whale and Risso’s dolphin are much lower than in previous years (normally making up around 12% and 10% of sightings respectively). This is likely to be a function of the lack of

surveys carried out in offshore waters (n=2), due to weather constraints, where the two species are more frequently seen and particularly for Risso's dolphins, a lack of surveying on the east coast, where over 80% of Risso's dolphin sightings are made.

One of the constraints of surveying from a single platform vessel, as MWDW has been for the last four years, is the inability to be able to see animals on the line that the vessel is following. This means it is not possible to carry out line transect surveys, as one of the assumptions that has to be met is that all animals on the transect line being followed are spotted. However, line transect surveying, following standardised distance sampling protocol, is the most reliable and accurate method of deriving estimates for animal densities and therefore abundances.

For the first year since Girl Pat has been the MWDW charter boat, line transect surveying was carried out in 2015, using a "Hop-up" platform, as opposed to using a fly bridge, to be able to see the transect being followed. Only three transect lines were followed, but the method appeared to work successfully. At sea states above 2 however, the platform became slightly unstable and therefore unsafe, so yet again, these surveys are constrained by wind speed and therefore sea state.

Recently, MWDW has been offered a grant by the Scheinberg family trust, specifically for the purchase of a vessel for cetacean surveying. Although a vessel has not yet been found, having a fly-bridge from which to survey is going to be a necessity. Having our own vessel will also relieve any issues with boat and/or skipper availability. Furthermore, we will be looking to keep the boat on a mooring outside the main harbour, therefore removing any possible tidal restrictions on carrying out surveys and which will allow the boat to be used at short notice. This should significantly increase the number of photo-identification encounters.

Photo-identification of Risso's dolphins:

Only 4 photo-identification encounters occurred in 2015, including 2 from members of the public. 4 new individuals were photographed, as well as 2 individuals known from previous encounters. The Risso's dolphin catalogue currently contains 50 well-marked individuals (recognisable from either side of the dorsal fin), 56 recognisable from the right hand side only and 47 from the left hand side only. This equates to a minimum catalogue size of 106 individuals. The catalogue compiled by

MWDW in Manx waters, is the biggest current catalogue of Risso's dolphins in the United Kingdom, based on one geographical region.

MWDW still has data sharing agreements in place with a number of cetacean research organisations in the British Isles, specifically for the sharing of Risso's dolphin images, including Sea Watch Foundation, Whale and Dolphin Conservation, Hebridean Whale and Dolphin Trust, Irish Whale and Dolphin Group and Marine Discovery (Penzance). There has been a number of individuals photographed in Manx waters that have been photographed elsewhere, including north Wales, Bardsey Island, Pembrokeshire and Cornwall. These data sharing agreements will continue in 2016.

Images and data collected by MWDW of Risso's dolphins in Manx waters have also been used in two projects being carried out by undergraduates from Plymouth University and Sligo University. The former is looking at potential photo-identification matches between the Manx Risso's dolphin catalogue and photos taken near Penzance in Cornwall, whilst assessing potential environmental factors that may affect the distribution of Risso's dolphins in Cornwall. The latter is deriving an abundance estimate for Risso's dolphins in Manx waters using Mark-recapture, whilst assessing possible reasons for the spatial and temporal distribution of Risso's dolphins in Manx waters.

Land based surveys:

72 hours and 30 minutes of land based surveys were carried out in 2015, equating to 290 fifteen minute intervals. This is a low amount of surveying compared to previous years, when an average of 229 hours or 916 intervals of land based surveys have been carried out per year. Even land based surveying was affected by the weather in 2015.

There were a total of 96 cetacean positive intervals (fifteen minute intervals which contained at least one cetacean sighting), equating to 33.2% of all intervals. This is a similar cetacean sighting frequency to previous years (between 25% and 35% cetacean positive intervals. The species composition of cetacean sightings from land based surveys is as follows:

Table 2: Species composition of land based cetacean sightings

Species	No. of +ve intervals	% of total cetacean +ve intervals 2015	% of total cetacean +ve intervals in previous years
Bottlenose dolphin	1	1.0	2.2
Harbour porpoise	73	76.0	75.1
Minke whale	10	10.4	9.7
Risso's dolphin	14	14.6	13.2

As can be seen from the comparison of cetacean positive intervals in 2015 and previous years, there were no anomalies in terms of cetacean sightings from land based surveys in 2015.

Opportunistic sightings:

205 opportunistic sightings were reported to MWDW in 2015, through a variety of media including our website, social media or by the more traditional e-mail or phone call. This is lower than in any previous year since the MWDW website was set up, again probably a function of the bad weather in 2015 as opposed to there being less cetaceans in Manx waters last year.

Table 3: Number of opportunistic sightings per year since 2006

Year	Total number of sightings
2006	357
2007	460
2008	295
2009	280
2010	285
2011	264
2012	280
2013	227
2014	243
2015	205

The species composition of opportunistic sightings was slightly unusual in 2015, there being more Risso's dolphin sightings (n=81) than Harbour porpoise sightings (n=71) for the first year since MWDW was set up. This is unlikely to be due to a drastic increase in Risso's dolphin numbers or decrease in Harbour porpoise numbers. Harbour porpoise are extremely difficult to spot in even slightly choppy seas, due to their small

Table 4: Species composition of opportunistic sightings 2015

Species	No. of sightings	No. of individuals	Average group size
BND	25	613	24.5
HP	71	193	2.7
MW	14	28	2.0
RD	81	412	5.1
SBCD	6	138	23.0
UNDO	8	28	3.5

size and lack of active behaviours, such as leaping, being displayed. Conversely, Risso's dolphins are much easier to spot, the dorsal fin being very tall, the animals being fairly slow moving in general and because individuals sometimes engage in high energy activity, creating splash and white water. So again, the weather has had an effect on the data collected by MWDW.

Manx Whale and Dolphin Watch in 2016:

Becoming a charity in September 2015 (Isle of Man registered charity no.1188) has enabled MWDW to look for many more potential sources of funding, for example through membership, merchandise and donations.

Recently, MWDW secured a large grant from the Scheinberg family specifically for the purchase of a boat. Having our own vessel will have a number of advantages: the vessel purchased will be suitable for carrying out line transect surveys, the vessel can be used at any time and at short notice and we will save money on not having to charter a vessel. Furthermore, the vessel can be moored at all ports around the island on a temporary basis, which will facilitate surveying of all Manx territorial waters. There are however additional costs, such as insurance and full price fuel (our previous charter vessel was commercial so could buy discounted fuel).

The confirmation of the construction of a wind farm and tidal energy schemes and the associated noise, has the potential to affect cetaceans in nearby waters. It is important therefore to have a sufficiently large dataset, pre-construction, that any effects on cetaceans, negative or positive, will be observable. The use of C-POD's around the sites, pre, during and post construction and during operation, will also provide invaluable data to assess changes in cetacean presence and behaviour.

To coincide with achieving charitable status, the MWDW website has been updated and improved with the assistance of a professional website designer. The sightings reporting system has been simplified to encourage more people to report, the site has been linked to our Facebook page and it contains much more in depth information about cetacean species seen in Manx waters, to help with identification and for general interest.

We are also starting a scheme this year to try to encourage boat users, both recreational and commercial, to report cetacean sightings. The scheme will include giving workshops, at for example sailing clubs, on marine mega-fauna identification and on boat conduct around cetaceans and basking sharks. Interested parties will then be given a waterproof sightings log book, each sighting requiring minimal information. If successful, the scheme will provide numerous sightings of cetaceans and basking sharks offshore, from where we currently receive very few sightings from the public, which will further increase our knowledge of cetaceans in Manx waters.