

# DATA ON THE DISTRIBUTION AND FEEDING OF FIN WHALES OFF THE GALICIAN COASTS



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One of the aims of the July 2007 CODA (Cetacean Offshore Distribution and Abundance in the European Atlantic)-IEO survey, is to investigate the presence of fin whales and their prey off the Galician coast. Here we look at the available historical information on fin whale presence and whale prey data.

Whaling statistics (1952 ó 1985) were analysed to look for seasonal and geographical patterns in the catches. The distribution of the catches was obtained from the positions in the catch statistics. A more detailed study using both sightings from whaling ships (available only from 1981 to 1984) and catches was also carried out. Stomach contents from 19 fin whales processed at the Balea factory in 1983 were analysed. Prey species were identified and the degree of digestion and semi-quantitative abundance evaluated.

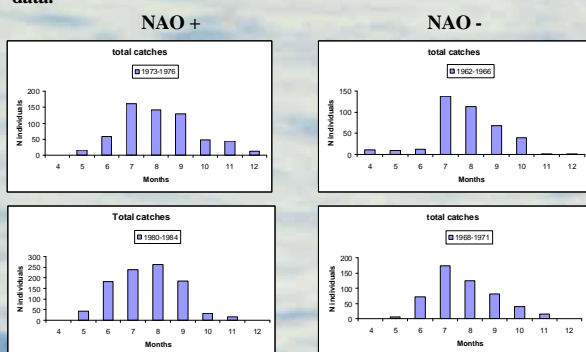


Fig. 1

Throughout the historical series the whaling season ranged from May to December although more than 70% of the catches were concentrated in July-September.

Catches during two periods of annual NAO + values (1973-1976, 1980-1984) were compared with those from periods with NAO - values (1962-1966, 1968-1971). Catches seem to peak in July in periods with NAO - values whereas in periods with NAO + values catches are more evenly distributed (Fig. 1). However, events related to the history of the exploitation, such as the change in target species from sperm to fin whale (around 1977) or the introduction of quotas for fin whales (1981), could complicate the analysis of the catch distribution.

Most of the catches are concentrated in a rectangle limited by the points 45° 00'N - 12° 00'W, 45° 00'N - 09° 30'W, 41° 30'N - 12° 00'W, 41° 30'N - 09° 30'W. Geographic distribution of catches from May-November is shown in Figs. 2- 8.

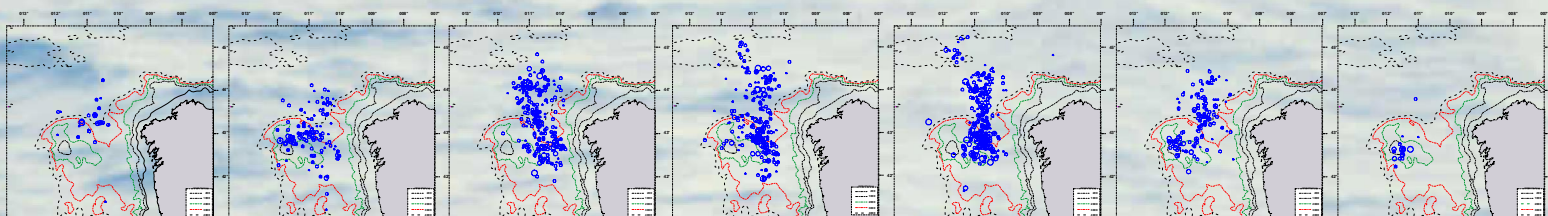


Fig. 2. May

Fig. 3. June

Fig. 4. July

Fig. 5. August

Fig. 6. September

Fig. 7. October

Fig. 8. November

In May the first fin whales enter the area from the NW, but in small numbers. From June to September more whales come to the area as can be seen by the number of catches and sightings in these months (fig. 9). They enter from the NW and continue towards the central area of the channel between the Galicia Bank and the continental shelf. In August-September this area of high abundance is consolidated with the animals gathering over the NE approaches of the Galicia Bank. In October and November whale encounters drop progressively with one group in the NW entrance to the channel and another on the Galicia Bank. The last whales are seen over the Bank in November.

Water depths range from more than 4,000 m to less than 1,000 m. over the Bank. Whales rarely seem to cross the 2,000 m. depth contour on the Galician shelf.

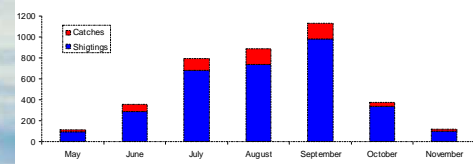


Fig. 9

Five stomachs were empty. The euphausiid *Meganyctiphanes norvegica* was the only prey species present in 12 of the 19 stomachs analysed (Fig. 10). One whale had only the gadoid fish *Micromesistius putassou*, while another had a mixture of both prey.

The amount of stomach content was variable: few prey remains (less than half of a full stomach) were found in 6 whales; abundant remains (about half a full stomach content) in 4 and very abundant remains (full stomach content) were found in another 4 whales.

*M. norvegica* found in the stomachs were adults of very similar size, around 37mm standard length (N=88, L= 36.94±2.20mm) (Fig. 11). The estimated size of the blue whiting eaten ranged between 13-15cm standard length.



Fig. 10

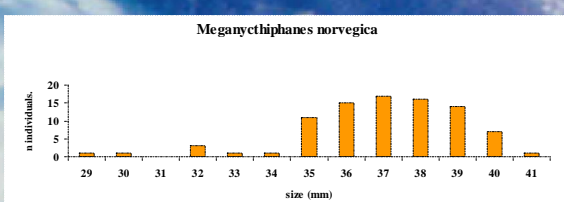


Fig. 11

Although the number of samples is small, the degree of digestion does not seem to depend on the time elapsed between the whale being killed and the examination of the stomach: in 3 whales examined after 23-24 hours the prey was undigested (n=2) or in an early state of digestion (n=1); and in 7 whales examined after 17-18 hours, stomach contents were in all the different stages of digestion (fig. 12).

An indication of when feeding takes place could therefore be estimated from the degree of digestion and catching times. When both are plotted against GMT time, it appears that whales caught early in the morning (before 10:00) had fresh or scarcely digested prey (Fig. 13), while digested or very digested prey appear in whales caught late in the day. However, some whales caught in the afternoon also had fresh or nearly fresh stomach contents. This suggests that the main feeding period takes place early in the morning, although feeding activity may also occur during the rest of the day.

The two whales feeding on blue whiting were caught in very close positions and dates (21-22/06/83), pointing to the possible existence of an area of blue whiting abundance. Similarly, 5 out of 7 specimens caught in very close positions, in an interval of 7 days (24-30/07/83), with abundant or very abundant euphausiid stomach contents also seem to be feeding over large patches of euphausiids.

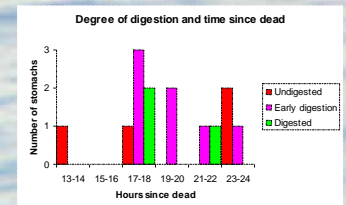


Fig. 12

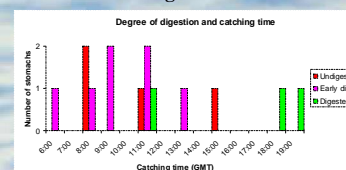


Fig. 13

Historically, fin whales gathered off the Galician coasts from May to November, feeding on euphausiids and blue whiting. We will see if this is still the case during the July 2007 CODA-IEO survey