

Fin Whale



West Cork (Photos: Dave Wall)

The fin whale is the second largest living animal on earth - the largest being the blue whale. Known as the "Greyhound of the sea", the fin whale is one of the fastest recorded mammals in the ocean capable of reaching speeds of up to 37 km/h.

Classification

Class: Mammalia

Order: Cetacea

Suborder: Mysticeti

Family: Balaenopteridae

Genus: Balaenoptera

Species: physalus

Common names: Fin whale; Finback; Herring Hog.

Irish Names: An droimeiteach

Key identification features

Body length: Max. 27m in Southern Hemisphere and 24m in Northern Hemisphere - average ♂ 19m, ♀ 20.5m (females usually longer than males by 5-10%)

Weight: Up to 70,500kg

Blow: Tall, robust 6m column visible at great distances on windless days

Head: V-shaped, top is flat with single prominent ridge. Narrow pointed snout without a downturn at the tip.

Dorsal fin: Small (60cm), falcate, sloped backwards, located two-thirds along back – not diagnostic as highly variable. It is often visible shortly after a blow.

Colouration/markings: Back and sides of their sleek, streamlined bodies are black/dark brown/gray. The ventral surface is white. The baleen/lower

corner of the jaw to behind blowhole.



<http://marinebio.org/species.asp?id=40>

Field identification: at sea (behaviour)

Their thin, robust blow may be easily visible in calm conditions reaching heights of up to 6-8m. The long roll of the back follows the blow, with the dorsal fin breaking the surface moments later. This classic fin whale surfacing sequence rules out the smaller 15-18m sei whale, whose blow and dorsal fin tend to appear simultaneously. As fin and sei whales are often confused with one another, we conclude that dorsal fins alone show too much variability to be a reliable diagnostic feature.



Fin whales are gregarious and often seen in small groups of 3 or more individuals. This, combined with their shallow dive pattern when traveling, can make them quite detectable. They typically blow 2-5 times at intervals of 10-20 seconds before taking a deeper "terminal dive" during which they may remain submerged for 5-15 minutes. During these dives they may reach depths of up to 230m. A small pod of whales may generate many blows per minute which, in ideal weather conditions, can make it quite easy to track a group.

Fin whales rarely lift their tail flukes when diving - "fluking" whales in inshore Irish waters are far more likely to be humpback whales. Often indifferent to boats, you may get close enough to observe their unique asymmetric head colouration (see **Key identification features** / **Field identification: on land** sections).

[Video Clip \[MPG Format 2MB\]](#)

Fin whale West Cork showing chevrons (c) Pádraig Whooley, IWDG

Field identification: on land (strandings)

The lower left side of the jaw is dark and the right side is mainly white - this asymmetrical pigmentation is a diagnostic feature of the fin whale. 260-480 baleen plates are found hanging on either side of the upper jaw. The baleen is dark gray with yellow stripes and about 70-90cm long and 20-30cm wide. 50-100 throat pleats reach all the way down to the naval. The head is flattened and wedge shaped - several light gray V-shaped chevrons behind the head may be visible (see **Key identification features** for additional information).

Fin whales have frequently stranded in Ireland and stranding statistics reveal no particular seasonal peak. Most records are from the south and northwest coasts, which may reflect their close proximity to the edge of the Continental shelf. Live strandings are quite rare, but these events do occur along the Irish South coast, where sightings are most frequent.

Species similar in appearance:

They are most likely to be confused with sei and blue whales in Ireland, however the latter are rarely observed in Irish waters.

Distribution and abundance

Fin whales are widely distributed throughout the world and despite being heavily hunted by whalers in the past they are now relatively common in areas of the Northeast Atlantic. Off the north coast of Ireland between 1908-1920 a total of 693 fin whales were caught on the shelf edge by whalers, indicating that the edge of the continental shelf was a significant area for these animals - acoustic monitoring has since supported this historical data.

The total fin whale population in the North Atlantic is currently between 35,000- 50,000 individuals. In 2007 an abundance estimate was carried out for Irish, British, Spanish and Portuguese waters indicating a population for the area of c.9,000 fin whales. They are the most abundant baleen whale in the Bay of Biscay. The fact that they are observed throughout the year in the Mediterranean Sea and for much of the year along the south coast of Ireland (May-February) suggests that they are not as committed to an annual migration as the humpback whale.

Photo-identification is a technique used to identify individual cetaceans by examining unique markings on their bodies/fins from photographs. A photo-

ID study of fin whales was carried out off the south coast of Ireland over a six year period during which 62 individuals were identified.

Where and when best seen in Ireland

Fin whales are frequently observed in offshore waters along the Irish western seaboard - a brief review of cetacean sightings in Ireland revealed that they are the most commonly observed large baleen whale in Irish waters. A team of scientists at Cornell University using American military tracking devices have suggested that 300-500 fin whales pass through offshore Irish waters each year.

Although they prefer deeper waters along the Continental shelf edge, they can be seen from Irish headlands when inshore feeding opportunities occur. A high number sightings have been reported along the southern Irish coast, extending from Sleah Head, Co. Kerry east towards Hook Head, Co. Wexford, offering excellent opportunities to view fin whales from headlands.

A photo ID study carried out off the south coast of Ireland identified 62 individual whales, 18% of which were re-sighted in the following years proving that the south coast is an important site for the fin whale. The IWDG's fin whale photo ID catalogue currently consists of around 70 individuals that have been identified in Irish waters.

Fin whales have been reported from as early May, with sightings peaking during October-December in West Cork, but later further east along the Waterford coast. High encounter between August and January suggest a discrete population along our south coast, which does not adhere to a predictable annual north-south migration, but may instead migrate between inshore and offshore waters. Few sightings have been recorded in March, and data so far suggests that April is the only month during which fin whales have been absent in inshore waters.

Since 2005, the increased coverage from the IWDG sighting scheme provides us with strong evidence that fin whales can occur anywhere along the 200 mile stretch of the Irish southwest coast extending east into the Celtic Sea towards County Wexford.

Food and feeding

Fin whales in Irish waters have a varied diet including herring, sprat, mackerel, juvenile cod, sand lance, and squid as well as small invertebrates such as krill and copepods. A 15m fin whale will require upwards of 800,000 calories per day - the equivalent of 0.8 metric tons of food.

Fin whales attack their prey at speed while turning on their sides (right side down) with open mouths. It is thought that the white colour on the right side of the head and lower right flank startles prey and herds them into a tighter area making it easier for the whale to feed. It is also possible that the broken pattern may camouflage the whale from its prey. Once the prey is caught, the baleen plates hanging from the upper jaw filter the prey from the water.

Fin whales are highly associated with small sprat and herring shoals on the south coast of Ireland demonstrating that this area is important for both the whales and the fish. Inshore fin whale sightings appear to peak around November coinciding with spawning herring.

Assessing stable isotopes from biological samples taken from animals can reveal a great deal about diet and migration patterns, as well as other important ecological information. A 2014 study in the Celtic Sea and coastal waters south of Ireland examined stable isotopes from skin samples collected from several fin whales - results showed that krill was the most significant prey item (herring and sprat were also found to be important prey species).

Reproduction and life cycle

Life expectancy: Max. 90 years – average 85 years

Age of sexual maturity: ♂ 6-10 years, ♀ 7-12 years

Gestation period: 12 months

Calf weight / length at birth: 2000kg / 6m

Calving frequency: 1 calf every 2-3 years

Calves born: Between December and April in NE Atlantic (location of breeding grounds unknown)

Calves weaned: Nurse for 6-8 months – weaned when reach 10-12m

Social structure and communication

Fin whales seem to be more social than other rorqual whales - they have also been seen in small groups of 3- 10 individuals. Aggregations of as many as 20 or more individuals have been recorded feeding together in the early summer off the East Waterford and Co. Cork coast.

Fin whales produce a series of sounds and are one of four species of whale that 'sings'. The fin whale produces simple, low frequency songs which can travel great distances underwater and tend to peak between late autumn and winter during the mating season - they are thought to be produced only by males possibly as a means of attracting females. They have been recorded vocalising west of the continental shelf throughout the year,

although less detections occur between May and July possibly due to the fact that this is outside of the breeding season.

There has been evidence that fin whales may produce signature calls - a traveling group tracked by researchers was recorded communicating back and forth to one another via distinct calls individually identifiable among the three animals. Calls may also aid in the synchronisation of behaviour - fin whales traveling kilometers apart were recorded communicating with no overlapping - much like a conversation. Throughout the encounter the animals were observed surfacing at the same time and traveling at the same speed.

Status and conservation issues

IUCN status: Endangered

Conservation status in Ireland: Good

The fin whale has historically borne the brunt of the modern whaling industry in both the northern and southern hemispheres. However, it is believed that numbers in various areas are slowly recovering.

Also of concern is the depletion of fish stocks through poorly managed commercial fisheries. Herring and sprat are important prey species for the fin whales in Ireland. In the past, herring fish stocks have collapsed possibly as a result of overexploitation/environmental factors. Sprat are a major bycatch species of fisheries in the Celtic Sea. This demonstrates the need for an ecosystem based approach to fisheries management, in order take the proper steps to conserve both fin whales and their prey in the Celtic Sea.

Shipping and seismic noise are seen as a threat to whales as well. Fin whales have been documented reducing their call frequency, as well as changing the structure of their vocalisations in the presence of ships and other sources of seismic noise. This indicates that such activity can disrupt cetacean behaviour - if they must change the structure of their vocalisations this could affect the function of the calls as well as increase the amount of energy required to produce them. As fin whale songs have been correlated with reproduction, these anthropogenic activities could also affect fin whale reproduction in the long run.

Protection:

- EU Habitats Directive (92/43/EEC) Annex II and IV
- Wildlife Act, 1976 and Wildlife (Amendment) Act, 2000
- No SACs listed

References

- Berrow S, Whooley P, O'Connell M, Wall D (2010) *Irish Cetacean Review 2000-2009. Irish Whale and Dolphin Group*, 60pp. ISBN 0-9540552-4-1
- Carwardine M (2002) *Whales Dolphins and Porpoises*. Dorling Kindersley Publishing Inc. ISBN-978-0-7894-8990-6
- Clark C.W. and Charif R.A. (1998) *Acoustic monitoring of large whales to the west of Britain and Ireland using bottom-mounted hydrophone arrays, October 1996–September 1997*. JNCC Report No. 281, 25
- Clark C.W. and Charif R.A. (2000) *Acoustic monitoring of large whales to the west of Britain and Ireland using bottom-mounted hydrophone arrays, October 1996–September 1998*. JNCC Report No. 313, 34
- CODA (2008) *Progress Report on the CODA Project. 15th Meeting of the Advisory Committee Meeting of ASCOBANS, 31 March–3 April 2008*
- Castellote M, Clark CW, Lammers MO. (2010) *Potential Negative Effects in the Reproduction and Survival of Fin Whales (Balaenoptera physalus) by shipping and airgun noise*. IWC Scientific Committee, Agadir, Morocco.
- Castellote M, Clark CW, Lammers MO. (2012) *Acoustic and behavioural changes by fin whales (Balaenoptera physalus) in response to shipping and airgun noise*. *Biological Conservation* 147, 115-122
- Department of the Environment, Heritage and Local Government (2009) *Conservation Plan for Cetaceans in Irish Waters*.
http://www.npws.ie/sites/default/files/publications/pdf/2009_Cetaceans_CP.pdf
- Enever R, Revill A, Grant A (2007) *Discarding in the English Channel, Western approaches, Celtic and Irish seas (ICES subarea VII)*. *Fisheries Research* 86:143–152.
- Fairley J.S. (1981) *Irish whales and whaling*. Belfast: Blackstaff Press, 252
- Gerarci JR, Lounsbury, VJ (1993) *Marine Mammals Ashore, a field guide for strandings*. Texas A&M Sea Grant Publication. ISBN-883550-01-7
- Harma C, Brodhv D, Minto C, Clarke M (2012) *The rise and fall of autumn-spawning herring (Clupea harengus L.) in the Celtic Sea between 1959 and*

2009: Temporal trends in spawning component diversity. *Fisheries Research* 121:31–42.

Hobson KA (1999) Tracing origins and migration of wildlife using stable isotopes: A review. *Oecologia* 120:314–326.

Jefferson TA, Leatherwood S, Webber MA (1993) *FAO species identification guide. Marine mammals of the world*. Rome FAO. ISBN 92-5-103292-0

Lynch D, Wilson J, Clarke M (2011) Growth rate fluctuations of herring in the Celtic Sea: A history of life on the edge. *ICES Conference Meeting Document 2011/D:07*. Available at <http://www.ices.dk>. 16 pp

McDonald MA, Hildebrand JA, Webb SC. (1995) Blue and fin whales observed on a seafloor array in the Northeast Pacific. *Journal of the Acoustic Society of America* 98, 712-721

Newsome SD, Clementz MT, Koch PL (2010) Using stable isotope biogeochemistry to study marine mammal ecology. *Marine Mammal Science* 26:509–572.

Ryan C., Berrow S., McHugh B., O'Donnell C., Trueman C. N., O'Connor I (2014). Prey preferences of sympatric fin (*Balaenoptera physalus*) and humpback (*Megaptera novaeangliae*) whales revealed by stable isotope mixing models. *Marine Mammal Science*, 30: 242–258

Simon M, Stafford KM, Beedholm K, Lee CM, Madsen PT. (2010) Singing behaviour of fin whales in the Davis Strait with implications for mating, migration and foraging. *The Journal of the Acoustic Society of America* 128, 3200-3210

Todd V, Todd I, Gardiner J, Morrin E (2015). *Marine Mammal Observer & Passive Acoustic Monitoring Handbook*. Exeter: Pelagic Publishing. ISBN 978-1-907807-66-4

Wall D, Murray C, O'Brien J, Kavanagh L, Wilson C, Glanville B, Williams D, Whooley P, Berrow S (2013) *Atlas of the Distribution and Relative Abundance of Marine Mammals in Irish Offshore Waters: 2005-2011*. Irish Whale and Dolphin Group

Wilson J, Berrow S (2006) *A Guide to the Identification of Whales and Dolphins in Ireland*. Irish Whale and Dolphin Group. ISBN 0-9540552-2-5

Whooley P, Berrow S, Barnes C (2011) Photo-identification of fin whales (*Balaenoptera physalus* L.) off the coast of Ireland. *Marine Biodiversity Records* 4(8) 1-7

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