

## Killer Whale



(Photo: Brad Hanson - NOAA / NMFS / AFSC / NMML)

### Classification

**Class:** Mammalia

**Order:** Cetacea

**Suborder:** Odontoceti

**Family:** Delphinidae

**Genus:** Orcinus

**Species:** orca

**Common Names:** Killer whale, Orca, Blackfish.

**Irish Name:** An chráin dhubh; An t-orc; An grampar

### Key Identification Features

**Maximum body length:** Adult c9.5m (32ft), adult c8.5m (28ft)

**Average body length:** Adult c7-8m (22-26ft), adult c6-7m (19-22ft)

**Blow:** Low & bushy with sharp sound, audible from a distance

**Head shape:** Rounded head tapers to point

**Beak:** Indistinct beak and straight mouth-line

**Dorsal fin:** Largest dorsal fin of any species, located mid-way along back, which on adult males can reach 1.8m (6ft). Shaped like an isosceles triangle, may cant forward. Falcate and dolphin-like on females and immatures. Visible from some distance.

**Colouration:** Mostly jet-black on top and flanks. The chin, throat and underside along the ventral midline are white, as is the belly patch continuing past the anus.

**Markings:** Conspicuous white patch behind and above eyes, clearly visible on surfacing. Variable whitish/grey saddle patch behind dorsal fin.

Too small to be one of the larger whales and too big to be a smaller dolphin species, killer whales are among the easiest species to identify. If the group (pod) has an adult male, which they almost always have, there should be no mistaking the bull's dorsal fin, which is so tall (see above) that it can have a wave or kink in it. Even females and sub-adults have a noticeably larger dorsal fin than other species.

The next diagnostic feature is the brilliant white, eye-patch, which is visible on surfacing. The grayish/white saddle patch, behind the dorsal fin appears mid-way through a surfacing. Killer whales are similar to humpback whales in that they may exhibit a wide range of behaviours.

## Species Similar in Appearance

Most likely to be confused with Risso's dolphin in inshore waters and long-finned pilot whale in Irish offshore waters.

## Behaviour

As one would expect from the largest member of the dolphin family, they are highly intelligent, inquisitive and approachable, which may in part explain their completely unwarranted reputation as being dangerous to humans. The following behaviours may be observed:

- **Spy hopping:** Thrusting head out of water to scan on land or iceflows
- **Breaching:** May not always be a full breach, i.e. a half breach
- **Fluke slapping:** Slapping tail flukes repeatedly on water
- **Pectoral slapping:** Same as above, but with pectoral fins
- **Wake riding:** Occasionally observed with juveniles

## Status and Distribution

With the exception of man, killer whales have perhaps the most widespread distribution of all mammal species. Totally cosmopolitan, they are found in all temperate and tropical waters, but greatest concentrations in cold waters and along the edge of pack ice. Population unknown but considered healthy. More nomadic than migratory, they follow their food sources within a home-range that may be as large as 1000 km<sup>2</sup>. A group of killer whales on the move will travel at speeds of 5 knots or more, covering upwards of 100 miles per day.

## Where and When Best Seen in Ireland

Biggest concentrations in Ireland are over the continental shelf. However, our offshore islands may offer the best land-based opportunity to see this most impressive species. The Blasket Islands (Kerry), Cape Clear Island (Cork), the Saltee Islands (Wexford), Achill Island (Mayo) Aranmore Island and the Inishowen Peninsula (Donegal) are likely "hotspots", as killer whales may be recorded occasionally from these areas. Inshore sightings are generally brief encounters of small traveling groups of <5, although pods of >20 have been reported.



As exhibited by the three killer whales that took up summer/autumn residence in and around Cork harbour between June- Sept 2001, they are extremely confident in shallow inshore waters, foraging for periods in bays and estuaries. They may even extend their search into river systems where prey is abundant, as displayed when the Cork whales fed for extended periods in the River Lee, moving right into the center of Cork city.

The Cork incident is not the first documented case of such killer whale behaviour in Ireland. In November 1977 an adult male, named "Dopey Dick" swam into Lough Foyle, Co. Derry, in pursuit of a late salmon run. Much to everyone's delight he stayed in the Lough for two days before being coaxed by security forces back to open water; continuing west along the Donegal coast.

Since 2009 there has been an increase in sightings of this apex predator in Irish waters and a significant number of these have been of the Scottish West Coast Community group of killer whales which comprise 10 adults (image above). Although their core habitat is thought to be the Scottish Hebridean Islands, individuals or on occasion the entire group are being increasingly recorded along our western seaboard. Sightings of well marked bulls such as John Coe (#001) and Floppy fin (#002) have been confirmed since 2004.

## Food and Feeding

Killer whales being the largest and perhaps most opportunistic apex predators have the most "catholic diet" of all cetaceans; comprising a range of fish

and shark species, other cetacea, seals, squid and even terrestrial animals. Although anecdotal evidence suggests killer whales may predate on marine mammals in Ireland, there are few documented accounts of such interactions. Interestingly, grey seal colonies feature strongly on the list of Irish killer whale "hotspots".

Quotation from Sean Mannion's book: Ireland's friendly dolphin...."during the seal breeding season, killer whale pods congregate around the Blasket Islands where the seals breed. So terrified of the killer whales are the seals that some fishermen will tell you that they have been known to jump into boats fishing around the Blasket Islands in an attempt to get away from their mortal enemy".

The weight of informed opinion in Ireland is that killer whales in Irish waters are primarily fish eating and fishermen, whose sonar, has on occasion shown them in pursuit of herring and mackerel shoals, support this. The Cork harbour killer whales, which were monitored over a 12 week period were never observed harassing seals, even though they were at times in close proximity to this potentially rich food source. Video evidence suggests that these whales were feeding on a mix of salmon and mullet.

That said, members of the Scottish West Coast Community Group have been filmed attacking and killing harbour porpoises in the Hebrides, and harassing minke whales. So it is likely that they are also applying similar tactics when foraging in Irish waters.

Given their complex nature and high degree of intelligence it is hardly surprising that killer whales have developed different hunting strategies in different regions. The killer whales that enter the waters of Johnstone Strait, Vancouver Island in summer feed exclusively on salmon, by hunting them individually. Whereas those that winter in the Norwegian Fjords are exclusively herring eaters. Because of the smaller size and greater biomass of herring, the killer whales hunt co-operatively in large groups to maximize efficiency.

The killer whales of Peninsula Valdez, Argentina are predominantly marine mammal eaters. They have developed a spectacular, if somewhat risky strategy, of intentionally beaching themselves and snatching unsuspecting pups from the surf zone along the edge of the sea-lion colonies during the pupping season (February- April).

No verifiable account of killer whale's attacking or killing humans in the wild exist (outside of Hollywood), although they have been responsible for several attacks and some recent fatalities involving training staff at aquaria and theme parks. Clearly, this species is not a suitable candidate for "captivity".

## Reproduction and Life Cycle

**Max life expectancy:** Male c50 years, female c80 years (in wild)

**Average life expectancy:** Male c30 years, females c50 years (much less in captivity)

**Male longevity:** Less than females by average of 29 years

**Female sexual maturity:** 11-14 years at 5m (16ft)

**Female breeding age:** 15-40 years of age; a single calf is born every 4-6 years

**Gestation period:** 16-17 months

**Calves born:** Autumn & winter in NE Atlantic at 2.5 m (7-8ft)

**Calf mortality:** >40% of calves die in their 1st year

**Male sexual maturity:** 12-14 years at length 5.8-6.7m

**Male physically mature:** 20 years age

## Social Structure

They possess a complex social structure of matrilineal groups, sub-pods, pods, clans, and communities, although this structure has yet to be studied in Ireland. The collective term for a group of killer whales is a "pod" but this term is generally used incorrectly in an Irish context, as the small group sizes encountered here suggest these are "matrilineal groups", comprising a mother and offspring.

## Conservation Issues

Although killer whales have not been exposed to serious commercial exploitation, they are still captured by countries like Japan for the display industry. Forest and habitat destruction which effects stream quality and salmon spawning grounds. Pollution is particularly damaging to killer whales. Being at the top of the food chain, toxin accumulation in their bodies is more acute than with other species.

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