Whale baleen diet (Southern right, Humpback, Pygmy blue, Fin, Sei, Blue, Sperm, Bryde's, Minke, dwarf minke)

**The Southern Right Whale** is a baleen whale and sieves plankton, usually copepods or krill, from the water through the large baleen plates in its mouth. Where feeding occurs north of 40°S the diet consists mainly of copepods, south of 50°S mainly euphausiids (krill), and varying proportions of the two food items at intermediate latitudes (Tormosov et al. 1998).

Knowledge of Southern Right Whale prey items has been gained primarily from stomach contents data collected from the until recently unreported Soviet whaling in the Southern Ocean during the 1950s-1970s (Tormosov et al. 1998). Southern Right Whales were found to feed on both euphausids and copepods, with a latitudinal variation in diet (Matthews, 1938; Tormosov et al. 1998). The predominant prey item north of 40°S was copepods, but these were replaced by krill south of 50°S (Tormosov et al. 1998). South of Australia, observations of suspected feeding behaviour suggested that Southern Right Whales also feed on amphipod crustaceans (Bannister et al. 1997). Northern Right Whales are known to consume the larval *Munida gregaria* (Cummings 1985), larval cirripedes (barnacles) (Mayo & Marx, 1990) copepods of the genus *Calanaus* and *Pseduocalanaus* (Murison & Gaskin, 1989).

Data from sightings and a satellite telemetry study show that feeding grounds of Southern Right Whales probably lie between about 32°S and 65°S (Bannister et al. 1997; Best et al. 2002; Goodall & Galeazzi 1986; Ohsumi & Kasamatsu 1986; Tormosov et al. 1998). They are generally thought to be in offshore waters, however a coastal feeding area on the west African coast has recently been identified using satellite telemetry (Best et al. 2002).

Feeding is thought to occur principally during the austral summer, but most likely extends into spring and autumn. This information is based on a direct observation of Southern Right Whale feeding (Bannister et al. 1997) and the seasonality of stomach contents sampled from Soviet whaling ships (Tormosov et al. 1998). As might be expected from the prey distribution, foraging is not generally observed on winter breeding grounds, although opportunistic feeding has been reported at Peninsula Valdes, Argentina (Thomas 1987). Whether feeding occurs elsewhere in winter is unknown.

Most observations of feeding Right Whales have been made in the northern hemisphere. Skim feeding Northern Right Whales swim at the surface of the water with mouths open, capturing prey items against the baleen (Mayo & Marx, 1990). Foraging dives are relatively shallow in comparison to some other cetacean species and have been reported from tag data as an average of 7.9 m to a maximum of 85.3 m (Winn et al. 1995), with a more recent study showing consistent dives to a depth of 80-175 m (Baumgartner & Mate 2003). The depth of foraging dives are associated with the distribution and concentration of zooplankton and stratification of the water column (Baumgartner & Mate 2003; Baumgartner et al. 2003b; Winn et al. 1995).

Feeding areas for Northern Right Whales have been found to be coincident with oceanographic fronts along which prey concentrate (Baumgartner et al. 2003a; Murison & Gaskin, 1989). There is evidence from aerial surveys that Northern Right Whales preferentially select areas of highest prey concentration and will alter swim direction to remain within those areas (Watkins & Schevill, 1979). It is possible that they target slower moving copepods in preference to faster moving euphausids (Murison & Gaskin, 1989).

It seems likely that the general form of foraging behaviour of Southern Right Whales would be similar to their congeners, although strategies may vary where different prey items are targeted or where the oceanographic conditions influencing prey aggregation are different.

**Pygmy blue whale** (B. m. brevicauda) Like other blue whales, pygmy blue whales are thought to feed primarily on krill species including  Nyctiphanes australis, Euphausia recurva and E superba.

**Fin Whales, *Balaenoptera physalus***

Fin whales, Balaenoptera physalus, feed mainly on small shrimp-like creatures called [krill](http://marinebio.org/species.asp?id=518) or euphausiids and schooling fish. They have been observed circling schools of fish at high speed, rolling the fish into compact balls then turning on their right side to engulf the fish.

The fin whale mainly feeds during summer, when adults may consume up to 2 tons of krill per day, and fasts during the winter months, even if some exceptions may exist. Fin whales' diet may vary with season and locality; they have been described to feed on a wide variety of organisms, depending on its availability. In the Southern Hemisphere, the diet is almost exclusively krill, mostly the euphausiids Euphausia vallentini and Euphausia superba.

**Minke whales** Balaenoptera acutorostrata Stomach contents samples were obtained from ten animals. The diet comprised mainly sandeels (Ammodytidae, around two-thirds of the diet by number or weight) and clupeids (herring Clupea harengus and sprat Sprattus sprattus).

**Dwarf minke whales** *B. bonaerensis*, Krill is the principal prey for Minke whales, especially in the Southern Hemisphere. They will also take small schooling fish. This is a largely solitary animals, seen alone or in small groups. Large aggregations of krill or fish however will draw in larger numbers of whales.

**Sperm whale** *Physeter macrocephalus* Contents were dominated by oceanic cephalopods, with a total of 101 883 cephalopod beaks representing 48 species from 14 families of Teuthids, two species from two families of Octopods, and a single Vampyromorph species identified. Giant squid are the main prey, although octopi and a wide variety of large fish are also taken.

## THE SEI WHALE Balaenoptera borealis Small crustaceans, such as krill and copepods, and schooling fish.

## THE FIN WHALE Balaenoptera physalus A variety of schooling fish, krill and other crustaceans and to a lesser extent squid.

|  |  |
| --- | --- |
| **prey item** | **probability of consuming** |
| ZME Zooplankton | 0.3 |
| ZKL Krill | 0.3 |
| CEP Cephalopod | 0.2 |
| large fish and schooling fish for sperm whale (SAR), | 0.1 |
| sandeels (Ammodytidae) (FPK) | 0.1 |

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