

Morus bassanus (Northern Gannet)

Family: Sulidae (Boobies and Gannets)

Order Pelecaniformes: (Pelicans and Allied Waterbirds)

Class: Aves (Birds)



Fig. 1. Northern gannet, *Morus bassanus*.

http://commons.wikimedia.org/wiki/File:Northern_Gannet_Cape_May_Ferry_RWD.jpg,

downloaded 20 September 2012]

TRAITS. It is the largest species of the gannets and is a heavyweight among plunge-divers (Wikipedia 2012). When young in their first year these birds are dark brown and gain more coloration of white to the feathers in following years. The males are slightly larger than the female, though identical in plumage. This species is monomorphic (males and females look the same) and can grow in length to as much as 110 cm in males and 104 cm in females, averaging 2470-3610 grams. The female is heavier than the male, 3067 grams compared to 2932 grams (Dewey, 2009). The wing span is from 484-535 mm. Adults are white with black-tipped wings and a yellowish crown and nape. Juveniles are grey, mixed with white feathers. There is a V-

shaped white patch on the rump (Mowbray, 2002). The legs and feet are gray-black with a greenish line running down the front of the leg and unto the toes. The feet have well-developed webbing. The face is blue-grey and the eye has a bright blue orbital ring with a pale blue-grey iris. The bill is stout and straight, pale blue with black nasal grooves and a black, serrated mandible (Mowbray, 2002). Development of adult plumage or maturity takes 3-4 years where the juvenile, which weighs 4 kg, more than an adult, loses this extra weight within 7-10 days of being a fledgling.

ECOLOGY. The northern gannet lives around 16-24 years and spends most of its life out at sea. It breeds in colonies on coastal areas, rarely inland, and occupies time in ritualized displays with its neighbour, mate and young one. Northern gannets are found on the eastern and western coast of the North Atlantic from the Gulf of Mexico coastline to the coast of Florida in North America, to the coasts of Greenland (Arctic region) to Iceland's rocky coast to the coast of Great Britain and Ireland. Some Caribbean islands have small populations of northern gannets. This species has a very large range and is not considered vulnerable. The habitats of this species are cliffs, open sea, rocky coast and offshore island. Fledglings travel southward; small numbers reach the equator, whereas the adults disperse less extensively. This species is marine / pelagic, with movements constrained to the continental shelf. It feeds primarily of shoaling pelagic fish, mostly caught by plunge diving (Bird Life International, 2012). The northern gannet was reported to be seen off north-east Tobago in November 1991 and 2009 (Kenfick, 2010; Trinidad and Tobago Rare Birds Committee, 2012).

SOCIAL ORGANIZATION. In regard to social organization or interaction the most important to be noted here is the pair bond relationship shared between northern gannets. The male and female are known to share a lasting bond, returning to nest in the same area over several years. Breeding colonies are known as gannetries. Mating requires courtship when the female selects the best male. Ritualized preening, bowing and head pointing occur before nest building and selecting the best partner. During March-September gannetries are selected and in the months of April nests are built. In late April and May a clutch is laid, generally a single egg, though two may sometimes be produced (Lewis, 2002). The nest is compiled of compacted mud, sea-weed, grass, flotsam, and feathers cemented together with excrement (feces and urine) Nests are usually tightly built together and roaming adults who land in the wrong nest are often fiercely attacked; Fig. 2 depicts the gannetry and macro scale of the nesting colony.

SEXUAL BEHAVIOUR. To attract the females the male performs a series of actions momentarily and repeatedly. The ritualized motion consists of a "head-shake and reach" where the male gannets shake their heads and dip the bill to the nest hinting to the female. If a connection is made then other behavioral action occurs such as nape biting, head shakes, and mutual fencing followed by mating, as shown in Figs 3 and 5 (Darling, 1952). The mating system is fixed at having one mate at a time. When couples have mated both the males and females are likely to revisit to the same site year round (Dewey, 2009).

JUVENILE BEHAVIOUR. The pale blue or greenish egg takes 42-46 days to hatch. The egg/s or young are continuously incubated or brooded by the webbed feet of the parents which have blood vessels passing through them. Females spend more time (74 %) incubating than male. This acts to keep the egg and young at a constant temperature as coastal areas can have a sudden shift

in temperature due to the cycle of warm and cold air fronts. The young is also partly naked being covered in a thin layer of creamy downy feathers thus incubation acts to provide heat till the young has its own thick down. Hatchlings consume vast quantities of slightly predigested regurgitated fish (mackerel and herring) or squid from their parents. This however ends at the average fledgling age of 90 days and having become a fledgling, the young adults must glide off a cliff ledge or rock face into the sea. Due to inexperience and their large body mass, fledglings cannot fly for the first week. They migrate in a southern direction en route to the winter range. This period is the independence time of the young fledgling before becoming sexually or reproductively mature in three years (Mowbray, 2002).

COMMUNICATION. The call of the parent when exchanging the post of the nest is an “ooh-ah” vocalization associate by a “sky-pointing” display where the bill is held vertically, the wings are spread open, upward and alternatively lifts the feet. Fig. 5 perfectly displays this communication moment. Northern gannets are noisy birds and have an array of vocalizations. According to Mowbray (2002) there are three categories (1) a loud metallic “urrah”s, “rah rah” used when landing, bowing and in mutual fencing, (2) hollow groans are use when taking off or after short hops or runs, (3) a soft “krok krok” is produced when gannets are swimming in the sea or fly close.

FORAGING BEHAVIOUR. Northern gannets feed most off of pelagic fish. This sea bird can dive plunge up to 15 m in depth (Brierley & Fernandes, 2001). The length of the prey fish is between 2.5-30.5 cm. Schools of fish traverse close to the surface, flocks of northern gannets gather, ranging from hundreds to thousands, diving together. In order to dive deeper the gannets use their webbed feet and wing motions as if flying to increase depth. Shallow and continental shelf water are preferred. In Fig. 4 a northern gannet is seen in the diving position where speeds of 100 km/hr can be reached. The dive height of the plunge is 10-40 m and the submerged dive itself last 5-7 seconds, although the northern gannet can remain under water for 30 seconds (Camphuysen, 1994).

ANTIPREDATOR BEHAVIOUR. The only source of predation on *Morus bassanus* is at the nesting colony as eggs are a favourite food of most predators. The species that tends to prey upon northern gannet eggs are: herring gulls (*Larus argentatus*), black-backed gulls (*Larus marinus*), common ravens (*Corvus corax*) and red foxes (*Vulpes vulpes*) (Mowbray, 2002).

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Fig. 2. Northern gannet nesting colony.

http://www.britishecologicalsociety.org/grants/honours_awards_prizes/photocomp_2007.php,
downloaded 20 September 2012]



Fig. 3. Northern gannets mating.

[http://commons.wikimedia.org/wiki/File:Morus_bassanus_24.jpg, downloaded 20 September 2012]



Fig. 4. Plunge diving for shoaling pelagic fish.

[<http://www.patteson.com/Winter%20Gallery.htm>, downloaded 20 September 2012]



Fig. 5. Nesting couple.

[http://commons.wikimedia.org/wiki/File:Morus_bassanus_21.jpg, downloaded 20 September 2012]

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