

Chen caerulescens (Snow Goose)

Family: Anatidae (Ducks and Geese)

Order: Anseriformes (Waterfowl)

Class: Aves (Birds)



Fig 1. Snow goose, *Chen caerulescens*.

[<http://4.bp.blogspot.com/Occ3osHAmEQ/UpdQjB8xvSI/AAAAAAAAABB8/aCJGPuiVs5o/s1600/Snow+Geese%252C+blue+phase+on+left%252C+white+phase+right+by+Rick+Cantu.JPG>, downloaded 29 November 2014]

TRAITS. The average length of a snow goose is 70cm with wingspan between 40-45cm. These birds can weigh between 3-4kg. Both male and female have a similar appearance but the male is slightly bigger. Geese exhibit plumage dimorphism (Sankaran, 2002), which means there are two types of plumage colour within the species. These are the “snow phase” and the “blue phase” (Fig. 1). The snow phase body is completely snowy white with black wing tips, the feet and legs are red and the bill is pink. At the sides of the bill are black patches, which give an illusion that mouth is open, this is called the “grin patch”. The blue phase body is blue/grey with black

winged tips, their feet and legs are the same as the white phase. The neck and head is white as well as the underside of their stomach. Juvenile white snow goose exhibits a dirty white body with completely black wings, while the blue phase goose body is grey with little to no white colour (The Robinson Library, 2014). The phase is determined by a gene, and geese tend to choose a mate that looks like their parents (Cooke et al., 2000).

ECOLOGY. The snow goose is migratory, breeding in Arctic North America and wintering south to the Gulf States and Mexico, occasionally in the West Indies. They are recorded as accidental visitors in the Caroni marshes in Trinidad. Snow geese can be found on open fields and bodies of water during winter (Cooke et al., 2000), and nesting in the Arctic in summer (Avibirds, 2014). During migration, these geese fly at extremely high altitude and so can rarely be seen.

SOCIAL ORGANIZATION. Snow geese are monogamous, territorial and social water birds. Monogamous, meaning snow geese form lifelong pairs and will only separate if one member dies. During the winter on the non-breeding ground, the family unit forage on feet, sleeps and swim together. They become very territorial over their feed site from other birds. Snow geese seldom travel without the company of other geese, forming flocks within the tens of thousands (Fig. 2). The flock consist of family groups, pairs and lone juveniles. On the migratory journey, the flocks flood the sky with chorus of calls while in undulating lines. Snow geese have a well defined dominance hierarchy. Large family groups dominate over small family groups and lone geese (Anknay and Gregoire, 1990). On arriving on the nest site, geese join their families, while lone geese stay with the large flock or by itself. Within the flock there are lookouts, which keep an eye for eagles and other predators. When the threat is sighted, they call out to alert the flock to take flight (Cooke et al., 2000).

ACTIVITY. Snow geese are excellent fliers, they can travel at speed of 55km/h and even capable of speed of 95km/h with nonstop flight for 100km. Although, snow geese spend half of the year migrating both day night, they will stop at nesting site to sleep and feed (Hinterland Who's Who, 2013). They sleep either by sitting, standing on one leg (Fig 3.) or by swimming in water, during migration they stay afloat at night (Cooke et al., 2000). Snow geese are herbivores; they feed on any of the parts, whether it's the leaves, stem, roots or grasses and sedges. During spring and fall migration, they mostly feed on grains such as waste corn and rice from corn and rice fields (Avibirds, 2014). During the winter, the snow geese feed on mostly grasses and sedges on the coastal marshes; spending most of their time and energy to uprooting the rhizomes to surface (Anknay and Gregoire, 1990). On the Arctic in the summer during nesting, goslings mostly feed on insects which are abundant (Avibirds, 2014).

FORAGING BEHAVIOUR. The adult snow goose mostly feeds on a plant source but the juvenile feeds on invertebrates (insect larvae) as a source of high protein in its first 2 weeks before the need for protein diminishes and switches to grasses and sedges (Avibirds, 2014). The bill of snow goose is strong and sharp enough for digging up roots in thick mud and use sand fragment to help digestion (Anknay and Gregoire, 1990). Their heads usually become temporary stained by the iron oxides in the mud (Sankaran, 2002). Before incubating her eggs the female can forage up to 18 hours to ensure she has enough fat reserves to keep her eggs warm (Cooke et al., 2000).

COMMUNICATION. Vocal Communication: Snow geese are known as noisy waterfowl with the constant nasal, one syllable honk given at anytime of the day, year; whether it is in the air or on the ground (Cooke et al., 2000). Juvenile birds under one year will produce a clear and high-pitched whistle sound. While feeding the family units use a series of guttural sounds to communicate with each other and a parent use a fast quiet series of sounds to assemble the goslings. An intense alarm call is used during nesting and a collection of shrill cries, hoarse honks and high pitched quacking calls fills the sky in flight (Cooke et al., 2000).

Visual Communication: These geese commonly display aggression to protect their food site from conspecific birds (Anknay and Gregoire, 1990). Conspecific birds are birds that belong to the same species. The display of aggression can be observed by four behaviours: 1. Fight, where the two birds faces each with their chest pushed outwards, with biting and wing flapping. 2. Peck, a rapid extension of head and neck, to strike the other with their bill or to bite (Fig. 4). 3. Attempted peck, this action is very similar the peck but without physical contact. 4. Threat, the geese head and neck is erected vertically or horizontally while standing, walking or running; this action is accompanied by calling (Anknay and Gregoire, 1990).

SEXUAL BEHAVIOUR. Snow geese form monogamous pairs for life. During courtship the males inflate their bodies, display head bobbing and cock their tails while the females pretend to ignore these affections by dipping their heads and bills. The pairs celebrate copulation by stretching, flapping, preening, bathing and vocalizing (Sankaran, 2002). Nesting usually begins in late May to June approximately 10 days after arrival, the females start building the nest by looking for dry hummocks within the tundra (Avibirds, 2014). The females are solely responsible for selecting nest sites; they construct swallow depression in the ground, line with bits of dry vegetation along with down from their breast and stomach. Female snow geese lay an egg every 36 hours, until they reach a full clutch of 3-6 eggs. Incubation starts after the last egg is laid, during the next 23-25 days the males will protect the nests and the females will seldom stray for more than 50m. The females lay on their eggs approximately 21 hours a day; they will not leave the nest for more than 15 minutes (Avibirds, 2014). The female uses her fat reserves to keep the eggs warm which she obtained during the migratory journey.

JUVENILE BEHAVIOUR. Hatchlings are well developed, with their eyes open and their bodies down-covered indicating whether they exhibit the snow phase or the blue phase (Cooke et al., 2000). The juvenile birds are able to leave the nest within 24 hours and begin feeding on their own. At birth the goslings weigh on average 100g and grow to more than 1200g in 6-7 weeks. They need to grow quickly to be large enough to fly south before the Arctic winter returns (Hinterland Who's Who, 2013). They are also capable of maintaining a constant body temperature within a few days. After 42-50 days they are able to fly but will remain with the family until the age of 2-3 years (Hinterland Who's Who, 2013).

ANTIPREDATOR BEHAVIOUR. The eggs and hatchlings are especially vulnerable to predators such as Arctic foxes (Fig. 5), eagles and round-legged hawks during nesting. Snow geese may nest near snowy owls to deter these other predators (The Robinson Library, 2014). Also during incubation when a female is frightened, she covers down the nest to camouflage from predator and keep eggs warm until she returns. They are even capable of diving short distances when a threat appears (Cooke et al., 2000).

REFERENCES

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Fig. 2. A large flock of snow geese.

[http://i.dailymail.co.uk/i/pix/2013/06/23/article-2346886-1A76B6A4000005DC-725_964x463.jpg, downloaded 29 November]



Fig. 3. Adult *C. caerulescens* sleeping while standing on one leg.

[<http://www.heidrich-foto.de/v%C3%B6gel-birds/schneegans-anser-caerulescens-snow-geese/>, downloaded 28 November]



Fig. 4. Adult snow goose showing aggression to another with a peck/bite.

[http://www.momentsinrgb.com/wp-content/uploads/2010/11/DSC_1999.jpg, downloaded 27 November]



Fig. 5. Parents guarding their nest from an arctic fox.

[<http://footage.framepool.com/shotimg/qf/711507040-chasing-away-snow-goose-arctic-fox-wild-russia:-arctic.jpg>, downloaded 29 November 2014]

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