

Dendrocygna autumnalis (Black-bellied Whistling Duck)

Family: Anatidae (Ducks and Geese)

Order: Anseriformes (Waterfowl)

Class: Aves (Birds)



Fig. 1. Black-bellied whistling duck, *Dendrocygna autumnalis*.

[http://www.bamboo4u.com/black-bellied_whistling_ducks_7-20-08.htm, downloaded 7 November 2012]

TRAITS. The whistling ducks were previously referred to as tree ducks (James and Thompson, 2001). The adult black-bellied whistling duck has an average length of 51-56 cm (ENature, 2007), a body mass of 815-840 g (Ducks Unlimited, 2012) and an average wingspan of about 74-94 cm (James and Thompson, 2001). Compared to other ducks the black-bellied whistling duck has extremely long legs and neck and their flight is slower; these are typical characteristics of swans and geese which indicate how closely related they are as compared to other duck species. As the name suggest, the bellies of these ducks are black and they produce a whistling sound during flight and when communicating. Black-bellied whistling ducks are vociferous during flight and they utter the whistling sounds “pee-che-che” (Ducks Unlimited, 2012). The adult plumage on the breast and back are chestnut in colour (ENature, 2007), their face is grey and

their wings contain a large white patch between the black ends of the wings and the chestnut colour of the back, as shown in Fig. 2. Major distinguishing features of black-bellied whistling ducks also include their long brilliant red bills, pink legs and a white ring which encircles their eyes. Their feet are adapted to allow dexterity when perching (McKenzie and Zwank, 1988), hence they are adjusted to arboreal environments. The ducklings' plumage consists of black and yellow patches, they lack the white eye circles that are present in adults and their feet and bills are greyish-black, as shown in Fig. 3. When the juvenile plumage develops it is similar to that of the adult however it is not as bright.

ECOLOGY. *D. autumnalis* are tropical ducks that inhabit a varying range of habitats including arid and semi-arid environments (McKenzie and Zwank, 1988). Their perching ability allows them to adapt to arboreal habitats. Their habitats include tropical coast, mangrove swamps, freshwater marshes, savannahs and cultivated crop lands (McKenzie and Zwank, 1988). During the nesting period about five pairs of ducks would seek out appropriate nesting cavities together. Both the male and the female are involved in selecting the nest location (McKenzie and Zwank, 1988). Nesting sites range from tree cavities to containers to on the ground (McKenzie and Zwank, 1988). A tree cavity is chosen depending its size and on the amount of vegetation; if there is too much vegetation the ducks would not use the tree even if it is one that was used before. It was suggested that they would not use such tree as it has a greater risk of the ducklings being entangled in the vegetation and there is a higher risk of predations as the predators could hide in the vegetation (McKenzie and Zwank, 1988). When choosing a ground nest it would be the contrary as the ducks would seek a location where they can conceal themselves from predators and therefore they would choose areas with relatively high vegetation. Once a ground site is chosen the ducks weave a grass basket on average 20 x 17 cm. Once a suitable nest is chosen the black-bellied whistling duck pairs would return to the same nest or they would nest a short distance away from the original nest in the following mating seasons (Delnicki and Bolen, 1976). This type of behaviour indicates an attachment to the original breeding site.

SOCIAL ORGANIZATION. Black-bellied whistling ducks are gregarious (Ducks-Unlimited, 2012). They socialize in a monogamous 'family-oriented' environment as both the parents are involved in protection and care of duckling and nest. After the juvenile ducks reach about one year they choose a mate and leave their parents. The parents however they return the following year to the same breeding ground thus indicating a faithful relationship (McKenzie and Zwank, 1988).

ACTIVITY. Black-bellied whistling ducks are both diurnal and nocturnal. They are usually non-migratory; except those in the northern regions such as Texas and Louisiana migrate to the south during winter. They usually sleep standing on one leg with the head tucked backwards as shown in Fig. 4. When asleep the black-bellied whistling duck continuously opens its eyes every few seconds to observe its environment. Black-bellied whistling ducks are involved in self-maintenance behaviour as they are observed to thrust their head and body below the water in a manner to clean themselves (Jim Wild Life Videos, 2012).

FORAGING BEHAVIOUR. Black-bellied whistling ducks usually feed during night; they are adapted to this due their increased rods per unit area which has allowed increased vision at night compared to other ducks (McKenzie and Zwank, 1988). Black-bellied whistling ducks are

adapted to foraging in upland areas. The adults' diet is mainly vegetarian which includes corn, rice, millets, several types of weed and other grasses. Other types of food include snails, tadpoles, molluscs, insects and small terrestrial spider (McKenzie and Zwank, 1988). Ducklings consume similar foods as adults however the percentage of animal intake food is almost equal to that of the plant intake food (McKenzie and Zwank, 1988). When foraging in water the black-bellied whistling ducks rarely dive for food instead they would usually forage in water no deeper than their legs and this allows them to stand and forage (McKenzie and Zwank, 1988). The ducklings however forage mostly by plunging and dabbling (McKenzie and Zwank, 1988).

COMMUNICATION. Black-bellied whistling ducks' most distinctive communication is the use of several whistling tones. Communicable gestures are also used and these include neck movement as those described during copulation (Sexual Behaviour), puffing up of breast, and wagging of tail. Defensive communication is also used and includes hissing, opening wings to appear larger in size and biting using bills. The parents also communicate with the ducklings before they hatch using low frequency calls (Batt et al. 1992).

SEXUAL BEHAVIOUR. Black-bellied whistling ducks are monogamous and studies have shown that they are mating partners for life (Delnicki and Bolen, 1976). They usually select their mates and breed during the first year of their lives. Copulation is initiated by a series of neck-stretching, diving under water and head dipping (McKenzie and Zwank, 1988). Copulation is observed to occur most often in shallow water and sometimes on the shore (McKenzie and Zwank, 1988). Prior to copulation in the water; the ducks are observed to be splashing around side by side while twisting their neck to form an 'S' shape; they also puff up their breast (McKenzie and Zwank, 1988). The male duck raises his outside wing away from the female and occasionally rotate positions so that they face each other. Once copulation is effective the female can lay about 9-18 milky white eggs (McKenzie and Zwank, 1988). The eggs are incubated by both male and female for about 28 days. Studies have shown that the male and female contribute equally during incubation in terms of recess duration, nest defence and regulation of nesting temperatures (Batt et al. 1992). A female may lay eggs as much as two times per year between the period of May and August (James, Thompson and Ballard, 2012). This double brooding was observed to be due to loss of some or all of the previous ducklings due to predation, weather, etc. (James, Thompson and Ballard, 2012). If the majority of the ducklings were lost they male and female would copulate again to produce another set of eggs in about August, however the strategy is not common and only a few cases were observed.

JUVENILE BEHAVIOUR. Before and after hatching the adult ensures imprinting of the ducklings by exchanging low frequency calls and ensuring that the ducklings see the parents face when they hatch (Batt et al. 1992). When the ducklings hatch they have down feathers and are not able to swim completely on their own. Similar to swans, the ducklings climb onto the parent's back or sometimes the ducklings are placed between both parents when they are swimming (McKenzie and Zwank, 1988). They are able to forage for themselves and feed mainly on insects and small plants. They would spend a lot of time in the water once it has an ample supply of aquatic insects and plants and just enough water emergent to provide cover and protection; but not too much to prevent movement through the water. Ducklings moult several times and obtain complete juvenile plumage at 10-13 weeks. The juveniles obtain the ability to

fly at about 56-63 days old however they only obtain their full adult plumage between the 34th and 35th week (McKenzie and Zwank, 1988).

ANTIPREDATOR BEHAVIOUR. *D. autumnalis* ducklings' predators usually include rat snakes, racoons and opossums while the adult predators are alligators, foxes and bob cats. Black-bellied whistling ducks are extremely aggressive in would make loud hissing noising when defending territory. The ducks would attack predators using their beaks and feet as shown in Fig. 5. They would also puff up their breast as a defensive strategy. If the duck is attacked it would start to kick its feet and use its wing to fly away.

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Posted online: 2012



Fig. 2. Two black-bellied whistling ducks in a marsh.

[<http://blog.nwf.org/2012/04/photo-of-the-day-black-bellied-whistling-ducks/>, downloaded 7 November 2012]

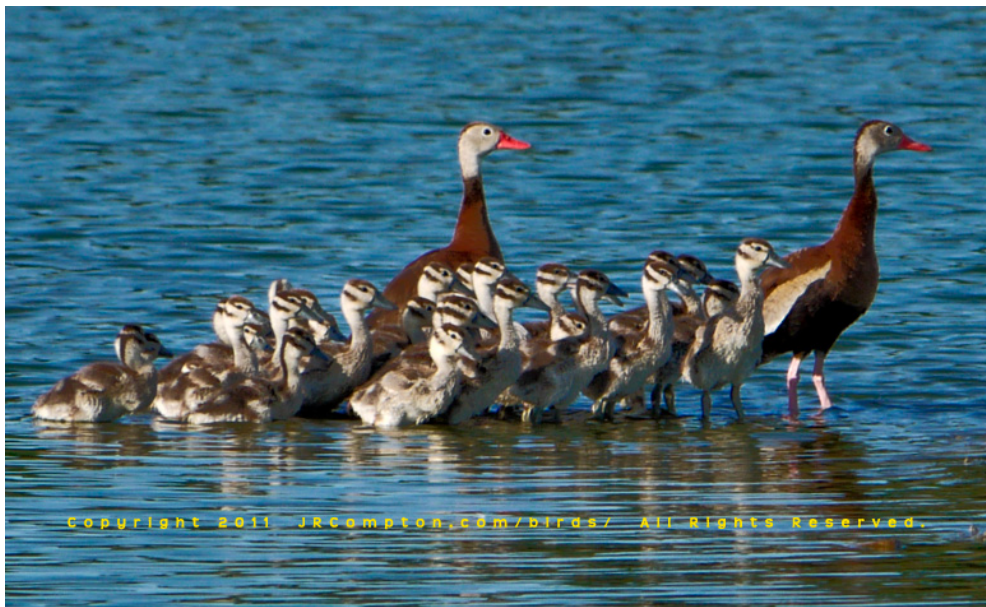


Fig. 3. Parents escorting ducklings.

[http://www.jrcompton.com/photos/The_Birds/J/June-11.html, downloaded 7 November 2012]



Fig. 4. Adult *D. autumnalis* asleep while standing.

[http://www.flickr.com/photos/nikon_dean_3000/5925080624/, downloaded 7 November 2012]



Fig. 5. Three *D. autumnalis* preparing to attack a predator.

[http://www.youtube.com/watch?v=7YzxQf6T_5c, downloaded 7 November 2012]