

Ramphastos vitellinus (Channel-billed Toucan)

Family: Ramphastidae (Toucans)

Order: Piciformes (Woodpeckers, Toucans, and Jacamars)

Class: Aves (Birds)



Fig. 1. Channel-billed toucan, *Ramphastos vitellinus*.

[http://tolweb.org/Ramphastos_vitellinus/93326, downloaded 11 September 2012]

TRAITS. An adult channel-billed toucan, measured from head to tail is 48 cm long (ffrench 2004), its large bill is 14 cm. Sexual dimorphism or the difference in males and females is displayed; adult females have slightly shorter bills than males (Restall 2007). As displayed in Fig.1, the adult channel-billed toucan is predominantly black but has red plumage below the tail and on the breast. It has golden yellow feathers on its throat which is surrounded by white feathers. The skin around its eyes is coloured a pale blue and this colour is replicated at the base of its bill (ffrench 2004). The channel-billed toucan is so named because of two deep indentations located on either side of the bill. Although large, the bill is lightweight since it comprises of many air cavities diffused through a meshwork of fine bones. The bill has tiny serrations called tomial teeth and contains a long feather-like tongue (Horne and Short 2001).

Like all species belonging to the order Piciformes, it has zygodactylous feet where its four toes are arranged in two pairs; one pair points forward and the other pair points backward.

ECOLOGY. Channel-billed toucans are found throughout South America and parts of Central America including Venezuela, Brazil, Trinidad and French Guiana (Restall 2007). They dwell in rainforest canopies at heights of 1100 m, usually in close proximity to watercourses (Shauensee 2003). They also inhabit forest boundaries and moist lowland forests (O'Neill and Schulenberg 2010). The tree canopies provide the toucans with a variety of tropical fruits, water and cavities for nesting (Kensinger and Reina 1991).

SOCIAL ORGANIZATION. Channel-billed toucans reside in small families comprising of two parents and young. They may also form small flocks numbering 3-12 individuals (Kensinger and Reina 1991). Oftentimes they join groups of other bird species including other toucan species to feed. When travelling, they mostly fly alone, in pairs or in straggling groups arranged in single file (Perrins 2009). Dominance hierarchies are displayed in all members of the family Ramphastidae, usually demonstrated among several species. Larger, stronger male members in a group of toucans may chase each other or grapple with their large bills to establish a hierarchy (Sullivan and Pascal 2008).

FORAGING BEHAVIOUR. Being a diurnal species, the channel-billed toucan forages in the daytime. Flying is limited because of its short wings so it does not migrate long distances to locate food. Instead, it moves by hopping from branch to branch and forages for ripe fruits and berries in the canopy of the forest where it lives. The channel-billed toucan often sits in one spot when feeding and uses its large beak to reach fruits in that range (Horne and Short 2001). The channel-billed toucan, like other toucans, indulge in playful feeding behaviour; if the fruit is very small, it is gently clipped from the stem with the beak and tossed into the air; the toucan then throws back its head and skilfully catches it. The seeds of ingested fruit are regurgitated. (Likoff 2007). Typically consumed are lipid-rich fruits such as *Virola* and *Euterpe* palm fruits. Other fruits which the channel-billed toucan feeds upon are those borne by *Cecropia*, *Ficus* and *Nectandra*. They will also consume papaya, mangoes, avocados and peppers if human intrusions into their habitat occur (Horne and Short 2001). Consumption of a wide range of fruits therefore makes it an important vector in the dispersal of seeds. According to an observational study, one individual channel-billed toucan travelled a distance of 3,027 m in 30 minutes whilst foraging and it dispersed seeds along a range of 269-499 m (Holbrook 2011).

Although primarily fruit-eaters, during the nesting cycle channel-billed toucans prey upon insects, eggs of other birds and even small vertebrates. This provides the necessary protein for development of their eggs and for growth of the nestlings (Jennings 2007). Researchers have suggested that the long bill is used to dip into nesting crevices in trees and steal eggs and chicks belonging to other birds (Sigrist 2006).

COMMUNICATION. Vocally, the channel-billed toucan is very conspicuous. Its call is a repeated, high pitched single note (ffrench 2004). It can be described like a croak or yelping sound, "kiok kiok" (Restall 2007). As it makes each note of sound, it lifts and drops its head while holding its tail feathers erect and making side to side movements on its perch (Emerald Forest Bird Gardens 2009). Pairs of channel-billed toucans tend to communicate vocally in an irregular chorus (Horne and Short 2001).

SEXUAL BEHAVIOUR. The breeding season is typically from March to June (ffrench 2004). Adult toucans court each other by playfully tossing fruits to each other and usually engage in noisy croaking together. They also preen each other's feathers (allopreening). Toucans are a monogamous species meaning they have one partner for life (Hilty 2005). A pair of toucans will select a nesting site in an abandoned woodpecker's hole or high up in a tree trunk hollow. If it is a successful site, the same spot will be used the next year for another brood. The nest is usually 30-45 cm deep and the entrance is about 10 cm (Horne and Short 2001). The toucans roost by tucking their bills beneath the wings and tail with their head turned around so they resemble a ball of feathers (Perrins 2009). The nest is not lined with feathers like most birds do; it is left bare and may contain regurgitated seeds from the parents. Channel-billed toucans breed once a year. The female lays 2-4 white oval eggs (Horne and Short 2001).

JUVENILE BEHAVIOUR. Both parents share incubation activity for 16-18 days and then the eggs hatch. Young toucans require nourishment and care. They are born with special pads on their feet to prevent injury in the hard base of the nest. Their eyes open after 15-20 days. Both parents feed the nestlings insects and tiny vertebrates. By seven weeks old, they are fully feathered and their bills have taken shape (Horne and Short 2001).

ANTIPREDATOR BEHAVIOUR. Predators of the channel-billed toucan include snakes, ocelots, jaguars, large birds of prey such as hawks and capuchin monkeys which prey on eggs and young (Horne and Short 2001). Although not used to physically fight predators, the large bill of the channel-billed toucan can intimidate potential predators (Patsalides 2012). Their bright colouring aids in camouflage when they are foraging in the sunlit canopy among bunches of tropical fruit (National Geographic 1996). A study done on marmosets found that a channel-billed toucan aggressively chased the marmoset away because it felt threatened so this may be another way these birds display anti-predator behaviour (Kaplan and Kemp 2011).

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Fig. 2. Channel-billed toucan feeding on fruit.

[http://birdway.com.au/ramphastidae/channel_billed_toucan/source/channelbilled_toucan_22254.htm, downloaded 5 October 2012]



Fig. 3. Pair of channel-billed toucans nuzzling each other.

[[http://www.geolocation.ws/v/W/File:Dottertukan%20\(Ramphastos%20vitellinus\)%20Weltvogelpark%20Walsrode%202010.jpg/-/en](http://www.geolocation.ws/v/W/File:Dottertukan%20(Ramphastos%20vitellinus)%20Weltvogelpark%20Walsrode%202010.jpg/-/en), downloaded 13 October 2012]



Fig. 4. Mating channel-billed toucans.

[http://en.wikipedia.org/wiki/Channel-billed_Toucan, downloaded 7 December 2012]