

Chloroceryle americana (Green Kingfisher)

Family: Cerylidae (Kingfishers)

Order: Coraciiformes (Kingfishers, Bee-eaters, and Motmots)

Class: Aves (Birds)



Fig. 1. Green kingfisher, *Chloroceryle americana*.

[<http://www.oiseaux-birds.com/coraciiformes/alcedinides/martin-pecheur-vert/martin-pecheur-vert-m-pw4.jpg>
downloaded 23 October 2015]

TRAITS. *C. americana* is the second smallest species of the *Chloroceryle* genus with an average length of 20cm, wingspan of 28-33cm and weight of 40-55g (Bouglouan, 2015). This species has a distinct green upper part i.e. the head (which is crested) and back, and also has strongly barred dark green flanks (Fry and Fry, 2010). Other distinct features are a large white or cream throat patch and a large number of white spots on their wings and tails (Fig. 1). It is also a sexually dimorphic species, as the males can be easily distinguished from females. A bright rufous breast is characteristic of the males, whereas the females' upper breast is green in colour, whilst the

lower is cream (Fig. 2; Fry and Fry, 2010). Juveniles' plumage is similar to that of the females but has duller colours and contains buff spots on the crown and wing coverts (Fry and Fry, 2010). The bill of the green kingfisher is large, dagger-like and black in colour (Bouglouan, 2015).

ECOLOGY. *C. americana* is the most common of the *Chloroceryle* kingfishers and its location ranges from southwest USA, Central America, Trinidad and Tobago to northern regions of South America (Fig. 3). It inhabits practically all open fresh water and brackish habitats which includes rivulets, muddy puddles, dark pools, flooded scrub forest, coastal lagoons, marshes and mangroves (Warner, 1952). Akin to all *Chloroceryle* kingfishers this species is piscivorous (fish-eating) in nature, but may occasionally consume insects. *C. americana*, having a vast range, and being widely dispersed throughout its range, will come in contact with other birds that have similar ranges – specifically the other *Chloroceryle* species: *C. inda*, *C. aenea* and *C. amazona*. It might be presumed that this may cause interspecific competition among these species; however, they avoid this by species-specific body sizes and bill lengths. This stratagem facilitates the occupation of different niches among the species such as perch height and prey size (Remsen, 1991). No natural predators of this bird are known but it may be attacked by aquatic predators such as caiman and crocodiles when it disturbs the water in pursuit of its own prey.

SOCIAL ORGANIZATION. *C. americana* are usually solitary birds, particularly during winter season, as they are often seen alone, perched quietly for long periods of time, however, during the breeding season they can be found in pairs (Warner, 1952). The reason for this bird's solitary nature is the fact that this species is strongly territorial (Remsen, 1991). If two birds come in contact with each other the likelihood that physical altercations such as flying attacks or aerial chases will occur is very great. On average an aerial chase would last for approximately 113 seconds until one of the contestants were knocked out of the air into the water, sometimes both birds fall into the water because of interlocked bills (Forshaw, 1983). The aggressor would rest for 1 second in a nearby tree subsequent to this and then resume the chase until one of the contestants is driven from the territory (Remsen, 1991). These aggressive displays over territory are common prior to and during breeding seasons, fundamentally among same sex, but mostly between male birds in attempts to defend their breeding area. Despite showing more tolerance to individuals of a different sex it is key to note that there is no significant differences in intensity between inter-sexual and intra-sexual aggression, as males are known to attack females and vice versa (Remsen, 1991).

ACTIVITY. The green kingfisher is a diurnal creature, and spends most of its time perched staring at the water, often for hours on end (Warner, 1952). Nights are spent roosting trees or bushes within its territory (Bouglouan, 2015).

FORAGING BEHAVIOUR. *C. americana* hunting behaviour can be classed as 'diving from a perch' (Willard, 1985). This meant that it scans the water from a waterside perch before plunging steeply into the water to capture its prey. Its diet mainly consists of small fish, crustaceans and prawns and may occasionally include insects such as dragonfly nymphs, ants and other hymenoptera (Fry and Fry, 2010). The fish that constitutes the *C. americana*'s diet ranges between 2-10cm in size, the majority being 2-3cm, and for every hour spent hunting it consumes an average of 5.4 prey.

Perching: While perched it occasionally bobs its head while simultaneously flicking its tail up which was an indication that it was prepared to dive. Furthermore it sporadically hovers 4-6m over the water surface for a brief period of time, scanning for prey (Fry and Fry, 2010). The green kingfisher prefers an open perch, approximately 2.9m, over an open expanse of water, and spends an average of 1.5 minutes searching for prey from this perch, before either attempting to catch a prey or flying off to another perch. This perch height, near to the water's surface, allows the green kingfisher perfect visibility of the small fish it is equipped to catch with its small bill (Willard, 1985).

Diving: The dive would commence with a flap of its wings as it left its perch, followed by a plummet towards its target at a diagonal angle. As it approached the target it usually performed a few shallow wing beats adjusting its final path to a vertical angle (Remsen, 1991). The angle of approach is important to the capture success, especially since the bird would only disappear a few centimetres below the water surface, and re-emerged within a second of impact (Remsen, 1991). In order to prevent its momentum from carrying it well below the surface the bird would use its wings as a braking mechanism. If the green kingfisher is successful in capturing a prey it returns to its perch with its prey and swallows it whole (Fig. 4), whereas if it is unsuccessful it always moves on to a new perch as the fish would disperse and be on alert due to the disturbance.

MATING BEHAVIOUR. The courtship displays for the green kingfisher are not studied and recorded in detail as it's similar to displays performed by other kingfishers, which is termed 'courtship feeding'. The act of courtship feeding involves attempts by the male to feed a fish, with its head(i.e. fish head) facing outward, to a female, if he is successful they will indulge in 'holding bills' and the fish is transferred accompanied with emotional excitement. This display is significant in "stimulating and maintaining the emotional relationship between the pair of birds" (Armstrong, 1942).

NESTING BEHAVIOUR. After mating occurs both birds of a pair dig a nest burrow in a perpendicular riverbank about 1-3m above water level. The entrance is partially inconspicuous due to vegetation and the burrow is approximately 5-6cm wide and 1m long. Once completed the female lays 3-6 eggs at the furthest point of the burrow. The incubation period lasts for a period of three weeks and female incubates the eggs at night, whereas during the day, the male and female alternate. Once the chicks hatch both parents feed them for approximately 27 days until they become fledglings and leave the nests (Fry and Fry, 2010). However they still depend on their parents for 4 weeks after leaving (Bouglouan, 2015).

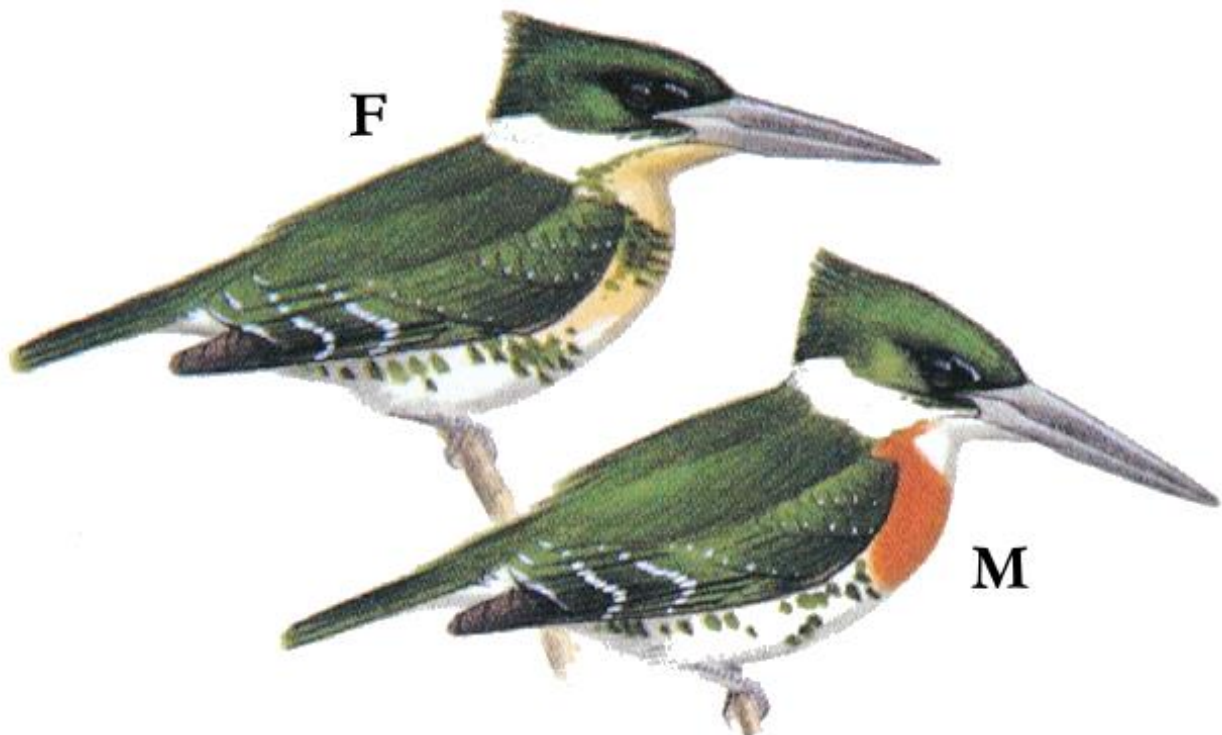
COMMUNICATION. The green kingfishers communicate via a variety of sounds or calls. The common call is a "hard, dry clicking 'tick tick tick', and also dry rasping followed by buzzy 'sree-ssee-ssee-ee srri-srri-srri'" (Bouglouan, 2015; Fig. 5). When alarmed it gives a rattled twitter that is sharper than that of the belted kingfisher (Warner, 1952; Fig. 6). The fly call is often described as a "low, pebbly 'choot' that is repeated 2-3 times" (Bouglouan, 2015). With the exception of the alarm call, the general function of these calls is to reveal an individual's location, as well as to distinguish its territory to other individuals. Another purpose of the call is to alert its partner that it's ready to swap incubation duty during the night.

REFERENCES

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Green Kingfisher

Fig. 2. Green kingfisher, *Chloroceryle americana*, sexual dimorphism.

[<http://blog-imgs-36.fc2.com/k/o/m/komm1521/201008242134364bf.jpg>, downloaded 22 October 2015]

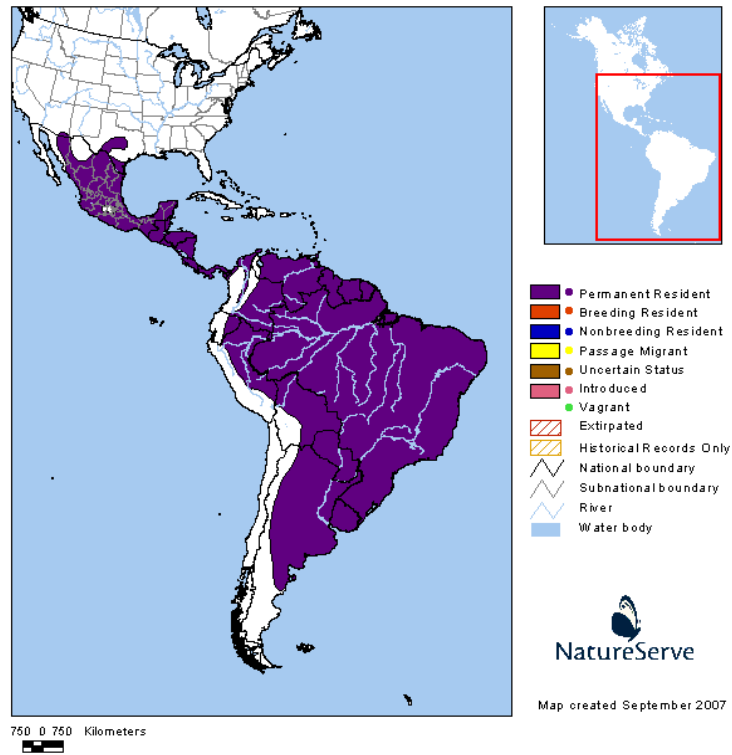


Fig. 3. Map of *Chloroceryle americana* range.

[http://www.birdphotos.com/photos/v?q=gallery&g2_view=xebug.ShowTree&g2_code=RangeMap&g2_species=Green%20Kingfisher downloaded 3 November 2015]



Fig. 4. Green kingfisher consuming a fish.

[<http://www.oiseaux-birds.com/coraciiformes/alcedinides/martin-pecheur-vert/martin-pecheur-vert-f-pw2.jpg> downloaded 4 November 2015]

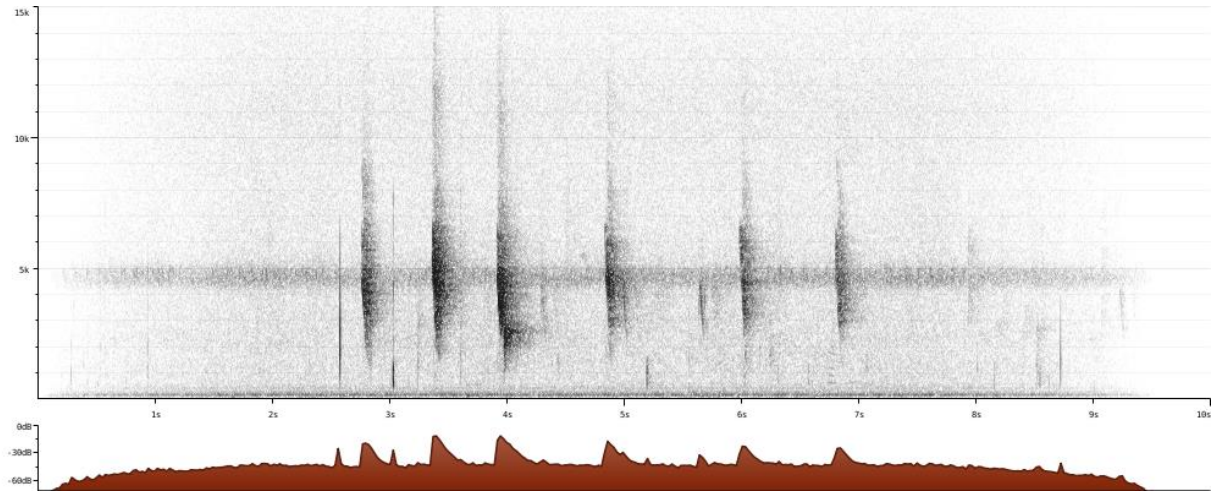


Fig. 5. Sonogram of green kingfisher call.

[<http://www.xeno-canto.org/sounds/uploaded/XTVEPHMPPJ/ffts/XC238132-large.png> downloaded 4 November 2015]

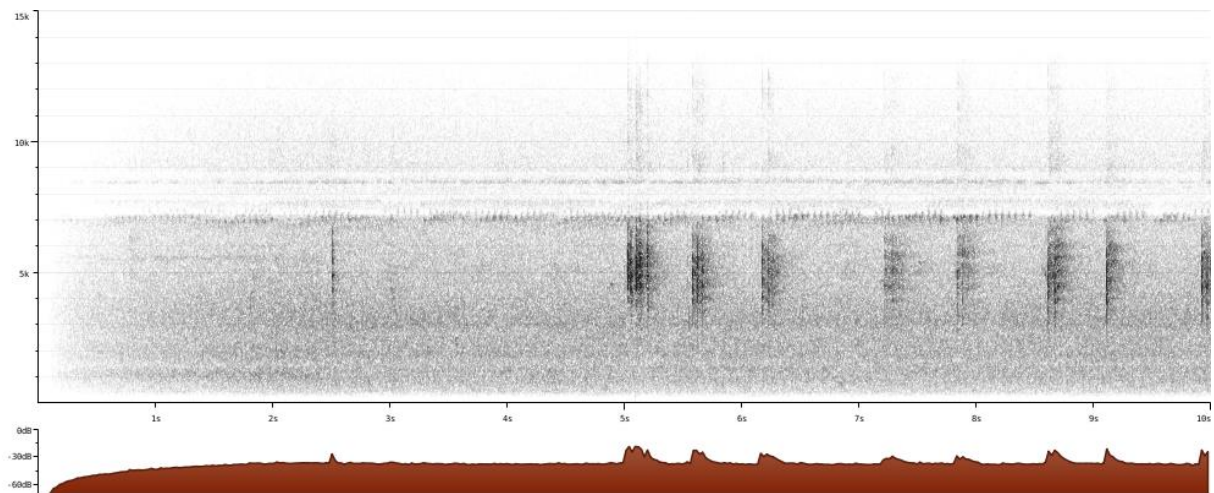


Fig. 6. Sonogram of green kingfisher alarm and distress calls.

[<http://www.xeno-canto.org/sounds/uploaded/UZXDJEAXMH/ffts/XC261815-large.png> downloaded 4 November 2015]

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