

Botaurus pinnatus (Pinnated Bittern)

Family: Ardeidae (Herons, Egrets and Bitterns)

Order: Pelecaniformes

Class: Aves (Birds)



Fig. 1. Pinnated bittern, *Botaurus pinnatus*.

<https://neotropical.birds.cornell.edu/Species-Account/nb/species/pinbit1/overview>

TRAITS. Pinnated bitterns, also referred to as South American bitterns, are generally brown, large (60 – 80 cm), and cryptically patterned; they have yellow eyes and lores, and yellowish/yellow-olive legs (Howell and Webb, 1995). Their feathers are intricately variegated with colours of yellow, black, brown, and buff in an array of cryptic patterns of bars and streaks (Campbell and Lack, 2010). They have a dark brown forecrown; the hindcrown, as well as the sides and back of the neck, is buff (pale yellow-brown) in colour with fine, black bars; the other upper parts of their bodies are buff-streaked and striated in blackish colours; their flight feathers are black with brownish tips (seen as a band on the rear end of the wing during flight); their throats are white but have white to buff coloured underparts and forenecks with light brown streaks (Hilty and Brown, 1986). They have strong, pointed bills; long, slender toes (with the middle one being pectinated), and are generally at least 370 g in weight. Both males and females are similar in appearance although the females may be more streaked on their upper parts (Campbell and Lack, 2010).

ECOLOGY. The pinnated bittern is a marsh bird, occurring mainly in temperate zones, breeding and feeding in wetlands among areas with scattered low shrubs and tall grass (Campbell and Lack, 2010). They are found to be distributed widely throughout South America – from Trinidad, Venezuela, and Colombia, to the west of Ecuador and throughout eastern and central Brazil,

Uruguay, and Argentina – but they have also been observed in Nicaragua (Wetmore, 1951) (Fig. 2). These birds tend to nest in freshwater sedge grass, reeds, and other aquatic vegetation in wetland areas such as lakes, marshes, and margins of large rivers (Campbell and Lack, 2010). Pinnated Bitterns have also been recorded in flooded fields and drainage ditches in addition to freshwater marshes where taller emergent vegetation is prevalent (Hilty and Brown, 1986).

SOCIAL ORGANIZATION. Pinnated bitterns are solitary birds and tend to only be very loosely colonial, and most times, not at all; they become highly territorial during the breeding season to the extent that they will engage in aerial combat, during which major (and sometimes lethal) wounds may be inflicted on either rival as a result of stabbing at each other with their beaks (Campbell and Lack, 2010). Small, loose gatherings of pinnated bitterns may also be observed in favourable feeding areas at one point in time (Howell and Webb, 1995). It has been suggested that flight activities of a small group of bitterns for a short period of time during mid breeding season may have some territorial or courtship significance (Campbell and Lack, 2010).

ACTIVITY. Pinnated bitterns are described as being essentially crepuscular – meaning that they are most active during dusk and dawn – though, there have been observations where they have been seen feeding or flying during the daytime; they are very rarely seen perched in trees but are quite capable of climbing reeds (Campbell and Lack, 2010). They are not migratory in the north but have been recorded to show migratory activity only during breeding season in the south in the more temperate zones (Heron Conservation, 2017).

FORAGING BEHAVIOUR. The pinnated bittern customarily feeds by slowly walking or creeping towards its prey with very deliberate movements and in a crouched position in which its body is almost parallel to the ground (Heron Conservation, 2017) (Fig. 5). During foraging, the bittern's neck is kept folded and is only elongated when it is alarmed (Jones and Gardner, 2010). Their primary diet includes a wide variety of amphibians, fish and insects, but may also include worms, reptiles, leeches, molluscs, crustaceans, as well as other birds and small mammals (Campbell and Lack, 2010). In some cases, the pinnated bittern can be described as a “convenience predator” as they have been observed to occasionally feed on amphibians depending on availability (Andrade et al., 2013).

COMMUNICATION. The pinnated bittern expresses a range of different calls for a variety of communicative signals. In the case of “advertising” or territorial defence, it lets out a distinctive booming roar call (described as “oong, kachoonk”); as an alarm call, the sound is described as “kaawk, -kaawk” while a “ro, ro, ro” call is made when taking flight (Heron Conservation, 2017). The booming, territorial calls of the bittern can be heard during both day and night (but mostly at dusk) before and during their breeding season, usually from within the cover, or even at the edge, of a reed bed (Campbell and Lack, 2010). Males also display territorially defensive behaviour by erecting the neck ruff feathers (Heron Conservation, 2017).

SEXUAL BEHAVIOUR. Before the breeding season begins, the male bittern's oesophagus becomes specially modified to allow it to be inflated and act as a resonating chamber to facilitate much stronger booming calls, which first involves a series of clicks and coughs before it draws a large breath, thrusts its head forward, and produces a deep, resonant boom call as it exhales. This force is so strong that its entire body vibrates at the sound which can be heard by the human ear

across distances of 1 – 5 km and the call is often repeated several times in attempts to attract a female bittern (Campbell and Lack, 2010). Very little information is available on their sexual behaviour, but some male bitterns are said to be polygamous and form no real bond with its mate(s) (Campbell and Lack, 2010).

JUVENILE BEHAVIOUR. Young bitterns are fed through regurgitation of food by the mother only. From as early as 14 – 20 days old, they begin to wander from the nest which is built from a platform of reeds about 10 - 15 cm above water level solitarily among various types of aquatic vegetation (Campbell and Lack, 2010). The juveniles of the bittern show slight differences in appearance compared to the adults in that they are more buff coloured overall with less barring patterns on the side of its head (auricular region) (Dickerman, 1961). Even after a few days after hatching, the downy young bitterns express the characteristic antipredatory frozen posture as the adults (Campbell and Lack, 2010) (see Fig. 3 and section below).

ANTIPREDATOR BEHAVIOUR. The pinnated bittern is known for its secretive behaviour as it hides in tall grass and vegetation where it stands completely still with its neck elongated and its bill pointed straight upwards to assume the appearance of the reeds in its surroundings (Hilty and Brown, 1986). The bittern's extensively patterned plumage of brown and dark colours allows it to be easily camouflaged against the background of reeds and tall grasses within which it inhabits. However, it remains vigilant even when in this concealment posture by ensuring that its underside faces the source of danger as well as swivelling its eyes in every direction, observing the movements of the predator (Campbell and Lack, 2010). As the danger approaches even closer, however, the Pinnated Bittern escapes by flight over only a short distance before landing elsewhere in aquatic vegetation (Ascanio et al., 2017). When flushed in a similar situation, it rarely, or never, lands in a tree but may also stalk away slowly in very deliberate movements from danger (Hilty and Brown, 1986).

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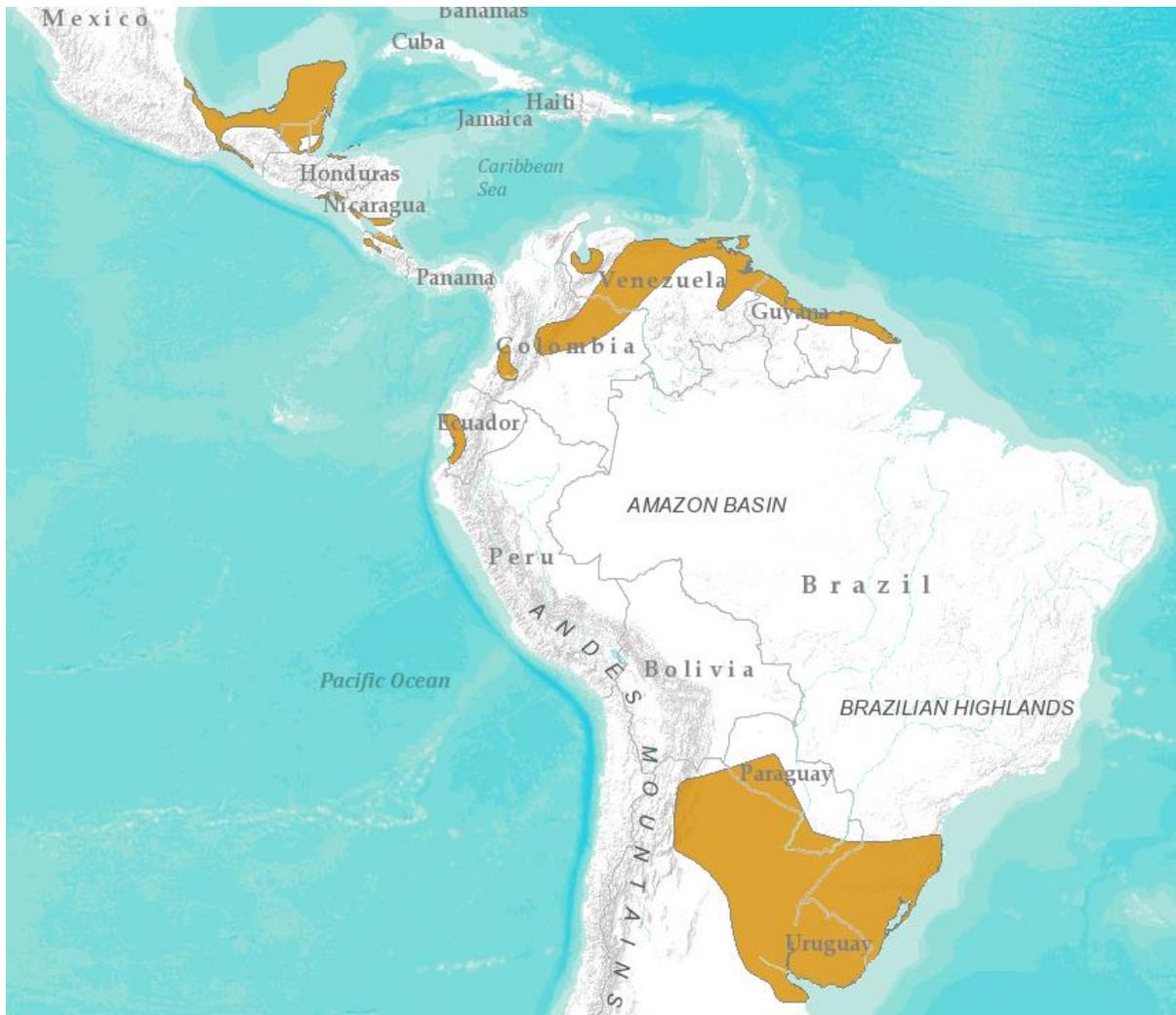


Fig. 2. Geographical distribution of the Pinnated bittern.

<http://maps.iucnredlist.org/map.html?id=22697343>

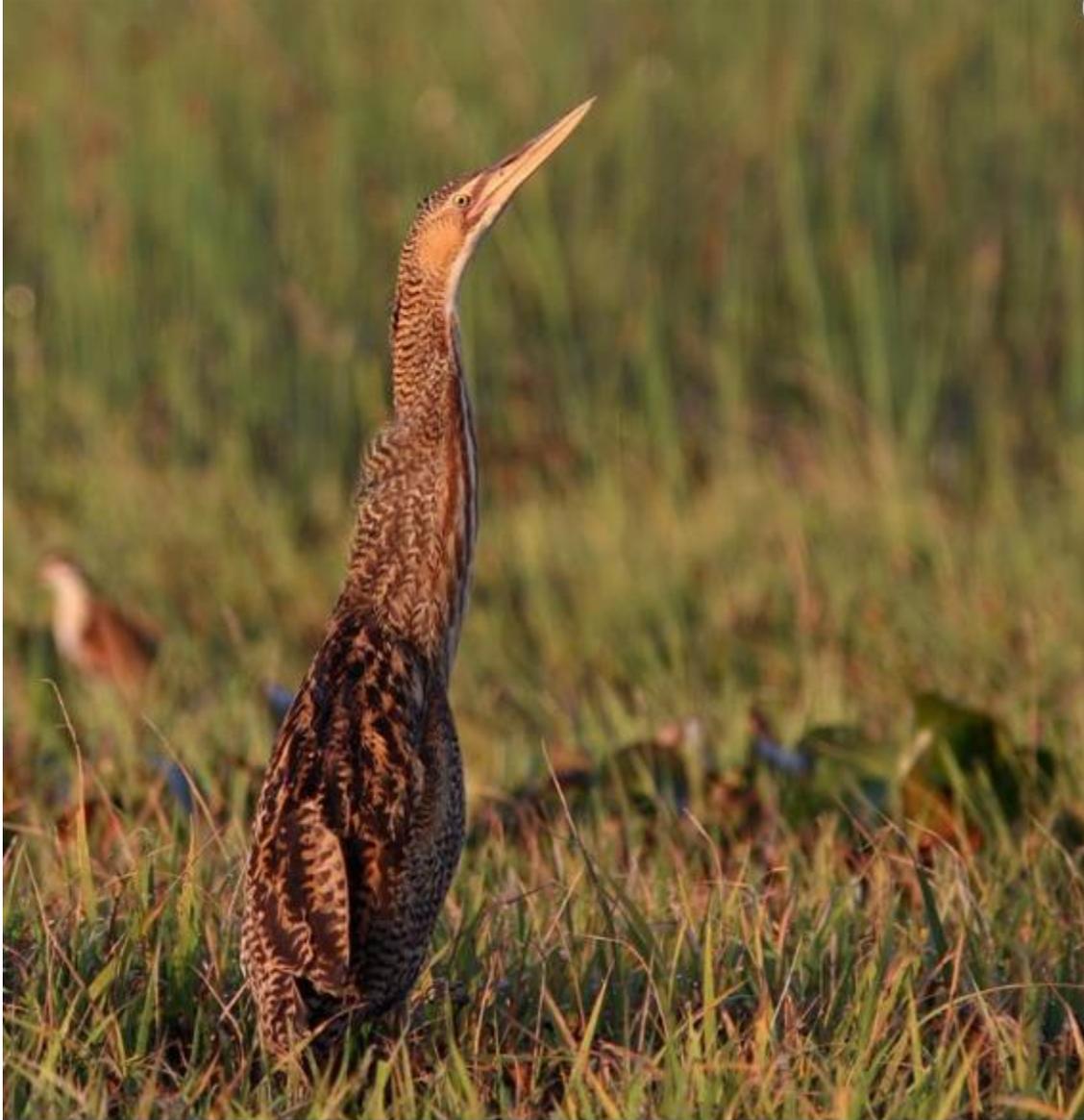


Fig. 3. The pinnated bittern in its concealment posture with its neck elongated and bill pointed upwards.

<https://www.hbw.com/ibc/species/pinnated-bittern-botaurus-pinnatus>



Fig. 4. Pinnated bittern in flight.

<https://www.cayaya-birding.com/birdphotos/herons.htm>



Fig. 5. Pinnated bittern in a crouched position.

<http://avesfoto.com.br/destination-lagoa-do-peixe-national-park/>

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