

Status and Occurrence of Least Bittern (*Ixobrychus exilis*) in British Columbia.

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Introduction and Distribution

The Least Bittern (*Ixobrychus exilis*) is a small heron found breeding from southeastern Canada but is largely absent from the Maritimes, found through the United States and Mexico, through Central America, into South America where it can be found in Guianas, southeastern Brazil, Paraguay, central Colombia, and west-central Peru (Blake 1977, Clements *et al.* 2017). There are 5 subspecies of the Least Bittern with the nominate subspecies (*Ixobrychus exilis exilis*) found from southeastern Canada to Central America, and in the West Indies (Clements *et al.* 2017). The second subspecies of Least Bittern is (*Ixobrychus exilis pullus*) and is restricted to Northwestern Mexico (Clements *et al.* 2017). The third subspecies (*Ixobrychus exilis erythromelas*) is found from Eastern Panama, south to the Guianas, southeastern Brazil and Paraguay (Clements *et al.* 2017). The fourth subspecies (*Ixobrychus exilis bogotensis*) occurs in Central Colombia where it is declining due to habitat destruction (Clements *et al.* 2017). The fifth and last subspecies of Least Bittern (*Ixobrychus exilis peruvianus*) is restricted to west-central Peru (Clements *et al.* 2017). This paper will focus on the nominate subspecies.

The Least Bittern breeds in low-lying areas with large rivers, lakes, and is largely absent from higher elevations (Poole *et al.* 2009). This species prefers freshwater and brackish marshes with dense, tall growths of aquatic or semiaquatic vegetation, particularly *Typha*, *Carex*, *Scirpus*, *Sagittaria*, or *Myriscus*, interspersed with clumps of woody vegetation and open water (Poole *et al.* 2009). The Least Bittern will occasionally breed in salt marshes and mangrove swamps (Poole *et al.* 2009). There is a strong association with cattail in northern parts of the Least Bittern's breeding range (Weller 1961, Swift 1989, Mancini and Rusch 1988) may occur only because cattail is the most common tall plant growing in dense stands above deep water (Frederick *et al.* 1990).

The western populations are concentrated in low-lying areas of the Central Valley and Modoc Plateau of California, the Klamath and Malheur basins of Oregon, and along the Colorado River in southwestern Arizona, and southeastern California (Rosenberg *et al.* 1991). The Least Bittern historically nested in the marshes of Great Salt Lake (Ryser 1985); but now is only a rare migrant in most of the Great Basin (Ryser 1985). Populations of this species are discontinuous between the Mississippi River valley and the Pacific states, and throughout eastern and southern Mexico to Costa Rica (Poole *et al.* 2009).

Cory's Least Bittern, a very rare dark color morph, has been reported from Ontario, Massachusetts, New York, Ohio, Illinois, Michigan, Wisconsin, and Florida (Palmer 1962a), but now rarely recorded or reported (Hancock and Kushlan 1984).

The Least Bittern migrates between its temperate breeding grounds and temperate and subtropical wintering grounds (Poole *et al.* 2009). The breeding and wintering ranges overlap widely in southern Florida, southern California, and Baja California. Some individual Least Bittern individuals are likely non-migratory (Poole *et al.* 2009). This species uses habitat in migration that is similar to breeding habitats (Poole *et al.* 2009). Sites where individuals were flushed in spring and fall in Missouri were dominated by bur reed (*Sparganium eurycarpum*), water smartweed (*Polygonum coccineum*), and cattail averaging 50–150 cm in height, with 150–300 stems/m², over water 20–25 cm deep (Reid 1989).

Migrant birds leave the breeding grounds in late August through September with few birds found north of Gulf States past the middle of October (Poole *et al.* 2009). The Least Bittern returns to the breeding grounds in early April to late May (Bent 1926, Palmer 1949), depending on latitude.

Least Bitterns are found in winter in areas of the south where there are no prolonged winter frosts such as along the Atlantic coastal plain from Maryland and Virginia south to Louisiana and Texas, with peak numbers in south Florida, along the Rio Grande valley, the lower Colorado River, and Baja California (Palmer 1962a, Hancock and Kushlan 1984, Root 1988b, Poole *et al.* 2009). Many also overwinter in the Greater Antilles (Palmer 1962a) and in eastern and central Central America (Blake 1977), with small numbers overwintering south to Panama (Ridgely and Gwynne 1989). The Least Bittern's range in the tropics is poorly known owing to this bird's secretive habits and the presence of other resident subspecies (Cramp and Simmons 1977). The northern limit of overwintering Least Bitterns is considerably farther south than that of the hardier American Bittern (*Botaurus lentiginosus*) (Root 1988b). Overwintering birds occur mainly in brackish and saline swamps and marshes (Palmer 1962a, Hancock and Kushlan 1984), but little is known about wintering habitats (Poole *et al.* 2009).

Along the west coast of North America, north of Oregon, the Least Bittern is an accidental species. There are no accepted records for Washington State by the Washington Bird Records Committee (Wahl *et al.* 2005, WBRC 2016). The Least Bittern is accidental in British Columbia with 2 photo-documented records (Munro 1955, Roberson 1980).

The Least Bittern is accidental in Europe with 5 records for the Azores, 1 fall record from Britain, and 1 fall record from Iceland (Lewington *et al.* 1992).

Identification and Similar Species

The identification of the Least Bittern is covered in all North American field guides. This species is very small in size measuring 33 cm in length, with a wingspan of 43 cm, and weighing 80 grams (Sibley 2000, Dunn and Alderfer 2011). The only small heron in British Columbia is the Green Heron (*Butorides virescens*) which is much larger measuring 45 cm, with a wingspan of 66 cm, and weighing 210 grams (Sibley 2000, Dunn and Alderfer 2011). In all plumages, the Green Heron is completely different looking and should not be confused with a Least Bittern with its contrasting colour pattern are diagnostic field characters (Sibley 2000, Dunn and Alderfer 2011).

Adult male has a striking black crown, back, and tail with a vivid greenish black (Dunn and Alderfer 2011). The neck, sides, and under-parts are brown and white (Sibley 2000). The wings are chestnut with conspicuous, contrasting, pale patches (Sibley 2000, Dunn and Alderfer 2011). Pale, highly visible lines border the scapular feathers (Sibley 2000, Dunn and Alderfer 2011). The head is slightly crested (Sibley 2000). In high breeding plumage, the lores are bright red (Dunn and Alderfer 2011). The bill is mostly yellow, but with the culmen a deep brown yellow (Poole *et al.* 2009). The eyes are yellow and this is the case in all ages (Sibley 2000). The lower part of the tibia is bare, and pink (Poole *et al.* 2009). The legs are green on the front, and yellow behind (Poole *et al.* 2009). The plumage of adults may brighten during the early part of the breeding season (Poole *et al.* 2009). The males, marginally larger in all dimensions than females in size (Hartman 1955, Blake 1977), but the plumage is dimorphic (Poole *et al.* 2009).

Adult females on the crown and back are a purple-chestnut which is different from the male which is black in those areas (Sibley 2000, Dunn and Alderfer 2011). The neck of the female is darkly streaked (Sibley 2000).

Juvenile plumage is held from July to October (Sibley 2000). Juvenile birds look similar to adult females, but the juvenile's crown is paler and browner. The breast and throat are browner with heavier streaking (Sibley 2000).

In flight, the adult Least Bittern has darkish under-wings that contrast with white sides (Sibley 2000). The upper-wing has orangey-buff coverts with black on the greater coverts and a black leading edge to the forewing that extends out to the primaries (Sibley 2000, Dunn and Alderfer 2011). There is a dark secondary edge that is tipped in buff on the outer edge of the feathers (Sibley 2000, Dunn and Alderfer 2011). Juveniles are similar, but the black edgings are duller (Sibley 2000). In Flight, the wingbeats are rapid and the flight style is very direct (Sibley 2000).

Song is a low, cooing “*poopoopoo*” descending, very similar that of the song of the Black-billed Cuckoo (*Coccyzus erythrophthalmus*), but lower-pitched with a wooden, not whistled quality (Sibley 2000). Common call, heard year-round, is a loud, harsh, quacking, rail-like “rick-rick-rick-rick”. In flight gives a short, flat “*kuk*” or “*gik*” (Sibley 2000).

The Least Bittern also has a rare dark morph that was formerly considered a distinct species, called "Cory's Least Bittern"(Pittaway and Burke 1996). On the dark morph, the pale areas of typical plumage for a regular Least Bittern appear chestnut coloured (Poole *et al.* 2009). This rare dark morph was found among breeding populations in eastern North America, with the under-parts and wing coverts uniformly dark chestnut rather than buff or whitish (Poole *et al.* 2009). What was unique about the Cory's Least Bittern was that over 50% of the sightings came from Ashbridge Bay, in Toronto, Ontario which was later filled in to make way for development (Pittaway and Burke 1996). It is now thought to be likely extinct as there are no recent records in the past number of decades (Pittaway and Burke 1996, Poole *et al.* 2009, Dunn and Alderfer 2011).

Occurrence and Documentation

The Least Bittern is an accidental vagrant anywhere in British Columbia with only 2 well-documented records. The first record was found and photographed by J. A. Munro on 26th Street in Vernon on July 30, 1955 (Munro 1955). The second record for the province was found and photographed (Royal BC Museum Photo 352) by Mike Oldfield in the bulrushes along the Fraser River of Musqueam Flats in South Vancouver on June 16, 1974 (Roberson 1980). There is a recent hypothetical record on the Breeding Bird Atlas for British Columbia for the Kimberley area, but details were not provided (D Cecile Pers. Comm.). This species is likely to turn up again in the future and is possible anywhere there is good habitat available.

Acknowledgements

I wish to thank Don Cecile for editing the original manuscript.

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