

Status and Occurrence of Whooping Crane (*Grus americana*) in British Columbia.

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Introduction and Distribution

The Whooping Crane (*Grus americana*) is a globally Endangered Species with the number of birds totalling 437 in the wild plus 162 in captivity which equals 599 in August 2011 (Urbanek and Lewis 2015). These birds are all descendants of the small remnant flock in Texas in winter 1941-42 (Urbanek and Lewis 2015). Although that population increased to 283 by winter 2011-12 (Stehn and Haralson-Strobel 2014), several factors, especially human development and long-term water issues on the wintering grounds, continue to place it in jeopardy (Urbanek and Lewis 2015). Canada is home to 100% of the naturally occurring global breeding population of Whooping Cranes (COSEWIC 2010). Historically, this species bred throughout the Prairies of Canada and the United States with the wintering grounds located along the Gulf Coast of Texas and in northeastern Mexico (COSEWIC 2010). By the beginning of the 20th Century, the Whooping Crane had all but vanished from almost all of its previous range and there were only 14 adult birds (COSEWIC 2010). Thanks to extensive conservation efforts to save the species in both Canada and the United States, the Whooping Crane was brought back from the brink of almost certain extinction; however, the work is not finished and will need to be done for years to come if the species is to survive (COSEWIC 2010).

There are currently four wild populations of Whooping Cranes (Urbanek and Lewis 2015). There is the breeding population in Wood Buffalo National Park in northeastern Alberta and southern Northwest Territories that migrates to spend the winter in Aransas National Wildlife Refuge in Texas which population is the only naturally occurring one and also the only one that is self-sustaining (Urbanek and Lewis 2015). The three other populations, as well as another no longer existing, are products of reintroduction (Urbanek and Lewis 2015). Current nesting area within Wood Buffalo National Park lies between the headwaters of the Nyarling, Sass, Klewi, and Little Buffalo rivers (Urbanek and Lewis 2015). The area is poorly drained and interspersed with numerous shallow-water wetlands varying in size (1–25 ha), shape, and depth. Most have soft marl bottoms (Urbanek and Lewis 2015). Wetlands are separated by narrow ridges that support an overstory of white spruce (*Picea glauca*), black spruce (*P. mariana*), tamarack (*Larix laricina*), and willows (*Salix* spp.) and an understory of dwarf birch (*Betula glandulosa*), Labrador tea (*Ledum groenlandicum*), and bearberry (*Arctostaphylos uva-ursi*) (Urbanek and Lewis 2015). Bulrush (*Scirpus validus*) is the dominant emergent in the potholes used for nesting, although cattail (*Typha* spp.), sedge (*Carex aquatilis*), musk-grass (*Chara* sp.), and other aquatic plants are common (Allen 1956b, Novakowski 1966, Kuyt 1976b, Kuyt 1976a, Kuyt 1981b). Whooping Cranes usually start breeding by age five, but can breed as early as age three (Johns *et al.* 2003).

The first attempted reintroduction began in the Rocky Mountains in 1975 (Urbanek and Lewis 2015). Cross-fostering, or placing Whooping Crane eggs in the nests of wild Sandhill Cranes (*Grus canadensis*) for rearing by these surrogate parents, was the technique used to create a migratory population that summered in Idaho and wintered in the Rio Grande Valley of New Mexico (Urbanek and Lewis 2015). This flock experienced high mortality, the Whooping Cranes failed to pair and reproduce, and cross-fostering was discontinued after 1989 (Drewien *et al.* 1997, Clegg and Lewis 2001). After limited trial of other techniques through 1997 (Drewien *et al.* 1997, Clegg and Lewis 2001), the reintroduction was discontinued, and the last surviving individual disappeared from the wild in 2002 (Urbanek and Lewis 2015).

The Florida non-migratory population represented the second attempt to reintroduce the species (Folk *et al.* 2008, Spalding *et al.* 2009, Spalding *et al.* 2010). Releases of captive-reared birds began in central Florida in 1993 (Folk *et al.* 2008, Spalding *et al.* 2009, Spalding *et al.* 2010). Survival and reproduction were inadequate to establish a self-sustaining population (Folk *et al.* 2008, Spalding *et al.* 2009, Spalding *et al.* 2010), and releases were terminated after 2004. Eighteen individuals remained in that population as of 2012 (Folk *et al.* 2008, Spalding *et al.* 2009, Spalding *et al.* 2010).

The third reintroduction attempt began in central Wisconsin in 2001 (Urbanek and Lewis 2015). Juveniles were costume-reared (Horwich 1989, Urbanek and Bookhout 1992) and trained to follow ultralight aircraft (Lishman *et al.* 1997, Duff *et al.* 2001) to migrate to the Gulf Coast of Florida for release (Urbanek *et al.* 2010a). Direct autumn release of costume-reared juveniles with older Whooping Cranes and with Sandhill Cranes was later added as a second reintroduction technique (Urbanek *et al.* 2010b, Urbanek *et al.* 2014a). This effort remains ongoing with 97 individuals in the population as of June 2014, a decline from 118 individuals in the population in January 2013 (Urbanek and Lewis 2015).

A fourth reintroduction to establish a non-migratory population began in southwestern Louisiana with hatch-year 2010 birds released in 2011 (Gomez 2014). That flock contained 29 individuals as of June 2014 (Urbanek and Lewis 2015).

Captive Whooping Cranes are held at 5 propagation facilities and at 7 additional display locations (Urbanek and Lewis 2015). As of June 2014, the U.S. Fish and Wildlife Service maintained a captive flock of 38 birds at the International Crane Foundation in Baraboo, Wisconsin (Urbanek and Lewis 2015). The U.S. Geological Service maintained 74 birds at the Patuxent Wildlife Research Center (Patuxent) in Laurel, Maryland (Urbanek and Lewis 2015). The Canadian Wildlife Service population at the Calgary Zoo/Devonian Wildlife Conservation Centre, in Calgary, Alberta, contained 22 birds (Urbanek and Lewis 2015). The San Antonio

Zoological Gardens, in San Antonio, Texas, had 7 birds, and the Audubon Center for Research of Endangered Species/Species Survival Center, and New Orleans Zoo, Louisiana, supported 11 birds (Urbanek and Lewis 2015). A total of 12 birds were on display elsewhere (Urbanek and Lewis 2015).

The migration route of the wild birds from Wood Buffalo National park to Aransas National Wildlife Refuge in Texas takes all Whooping Cranes along a direct flight path through the Prairies (COSEWIC 2010). Fall migration begins about mid-September and is protracted, often involving staging for one to five weeks in south-central Saskatchewan (COSEWIC 2010). Arrival on Texas wintering grounds occurs in late October and mid-November (COSEWIC 2010). Non-breeding sub-adults begin fall migration earlier than family groups (COSEWIC 2010). Pairs and family groups establish fairly large territories during their winter tenure in Texas (COSEWIC 2010). Juveniles leave Texas with their parents in spring and accompany them on the majority of their northward migration, separating at or near the breeding grounds (COSEWIC 2010). From 1982-84, 43.7% of crane use-days during spring migration were spent in Saskatchewan (COSEWIC 2010).

Additional locations that have been used historically or pre-historically used by Whooping Cranes (at least during migration) include areas along the Atlantic Coast – in South Carolina, New Jersey Georgia and Florida (COSEWIC 2010). Whooping Cranes were also recorded in the interior United States, in Kansas, Missouri, Arkansas, Kentucky and Alabama (COSEWIC 2010).

Along the West Coast of North America there are no accepted records of the Whooping Crane for California (Hamilton *et al.* 2007, Tietz and McCaskie 2017), Oregon (OFO 2016), or Washington State (Wahl *et al.* 2005, WBRC 2016). This species is an accidental vagrant in the interior of British Columbia with 5 well documented records (Toochn *et al.* 2014).

Identification and Similar Species

The identification of the Whooping Crane is covered in all standard North American field guides. This species is the tallest bird in North America with males measuring nearly 1.5 m tall, or 0.12–0.20 m taller than the Greater Sandhill Crane (*Grus canadensis tabida*) (Urbanek and Lewis 2015). Males larger than females; captive males weigh 7.3 kg, and females weigh 6.4 kg (Urbanek and Lewis 2015). The overall appearance of the sexes is similar (Urbanek and Lewis 2015). Guard Call sexually distinct; vocal and visual components of Unison Call are also sexually distinct (Archibald 1975a, Carlson 1991a). In the context of British Columbia, the Whooping Crane is an obvious-looking species that, given proper views, should not give keen observers any identification problems.

The following identification information on the Whooping Crane is taken from Urbanek and Lewis (2015) unless otherwise stated.

Adult birds are snowy white with black primaries, black or grayish alulae, sparse black bristly feathers on the carmine crown and malar region, and a dark gray-black wedge-shaped patch on the nape. The size of the post-occipital patch varies considerably among individuals. The black primaries and alulae are not visible when the wings are folded; plumed, de-curved tertials ordinarily conceal the short tail. The bill is strong, dark olive-gray, lighter during the breeding season; base pink or rosaceous. The iris is yellow. The legs and feet are gray-black, and the hind toe is elevated. Sub-adult birds look like adult birds, but will have dirty necks from the remnants of rusty-brown feathers of the juvenile plumage that had yet to moult into the white neck and head of an adult (Johns *et al.* 2003). In addition, the red patch on the head and black moustache stripe are not as distinct as in a mature bird (Johns *et al.* 2003).

Juvenile (First Basic) Plumage is held from July–October. The forehead, cheeks, chin, throat, and neck are a reddish cinnamon-buff. The back, scapulars and inter-scapular tracts are cinnamon-brown, the scapulars are a darker cinnamon and with white bases. The ornamental humerals are cinnamon with white bases. The primaries are a dull blackish; upperwing primary coverts and the 4 alula feathers are dull blackish with a buffy-wash. The primary coverts usually have whitish bases that show individual variation in size and decrease in length distally. The lower back, uppertail coverts, rectrices, upperwing coverts, secondaries, and underparts are whitish with buffy feather edgings giving overall appearance of being washed, mottled, or blotched with a pinkish-cinnamon to cinnamon-buff colouration. The cinnamon colour appears practically solid on head and whitest on the lower underparts. The feathers on the forehead, crown, lores and facial areas, the parts that become bare as birds age, are short and more bristle-like in structure. The natal down can remain attached to the ends of juvenile feathers for some time before being worn off.

Several birds may be misidentified as Whooping Cranes. Sandhill Cranes (*Grus canadensis*) are primarily gray, but sometimes appear whitish in bright sunlight (particularly the Greater Sandhill Cranes) with gray primaries and secondaries evident when wings are extended; this species is smaller than the Whooping Crane, with a wingspan less than 1.6 m versus 2 m for a Whooping Crane).

Snow Geese (*Chen caerulescens*) and American White Pelicans (*Pelecanus erythrorhynchos*) are white, smaller than Whooping Cranes, have black wing tips, and have short legs that do not extend beyond the tail in flight. Distinction based on leg length can be difficult, however, because Whooping Cranes sometimes fly with their legs folded into the breast feathers during

cold weather. Snow Geese have rapid wingbeats and often occur in large flocks. American White Pelicans fly with the neck folded and have a long yellow bill. Herons and egrets fly with their long necks folded and are smaller than Whooping Cranes. Wood Storks (*Mycteria americana*) are white with outer and trailing edges of the wings black, black undertail, and dark head and upper neck. Adult Tundra (*Olor columbianus*), Trumpeter (*O. buccinator*), and Mute (*Cygnus olor*) swans lack the black wing feathers and fly with the neck extended straight forward and legs not extended beyond the tail.

Occurrence and Documentation

The Whooping Crane is an accidental vagrant anywhere in British Columbia with only a handful of records which all come from the interior of the province (Toochin *et al.* 2014). The first record was a flock of 6 adults found by the late Glen Ryder in a field in Alexandria near Quesnel from April 25-26, 1962 (McNulty 1966). Details consisting of drawings and notes were taken at the time of the sighting which helped confirm the identification (McNulty 1966). The second record for British Columbia was an adult found by Linda Andrusiat and seen by others flying low over the Quesnel River on August 15, 1995 (Bowling 1996a, Davidson 1995, Toochin *et al.* 2014). The first photographed record for the province involved 2 long staying adults that were originally found by Victor and Terri Bopp on Salmon Valley Rd and Lacasse Rd, 30 km north of Prince George (Johns *et al.* 2008). These birds were again found by Holley Yorston and Tim Angill on a sandbar near the confluence of the Salmon and Fraser Rivers on July 6, 2003 (Johns *et al.* 2008). Incredibly, the same 2 birds were found and photographed by Elsie Stanley and were seen by others at Dome Creek near McBride from August 22-28, 2003 (Johns *et al.* 2008). The fourth record was of a single adult found by Keith Walker along the north shore of Francois Lake, in the Prince George region on May 16, 2007 (Toochin *et al.* 2014). The fifth record for British Columbia was a pair of birds found by Todd Stockner in the Kispiox Valley on October 10, 2013 (Toochin *et al.* 2014). There are several hypothetical records that lack convincing details that are listed as such in Johns *et al.* (2003).

Since sub-adult birds over 2 years to 4 years old look very similar to adults 5 year and older, it is possible that most records called adults in British Columbia could in fact be younger birds. It would make more sense since younger birds are more likely to venture off course in migration. It is unclear what factors made birds heading for Wood Buffalo National Park end up on the wrong side of the Rocky Mountains. The most likely reason is severe weather drove them off course (M. Meredith Pers. Comm.). Given the low population and the very narrow migration corridor that Whooping Cranes follow in migration, it seems very unlikely that future sightings will occur in British Columbia. The fact that they have occurred at all is truly remarkable!

Table 1: Records of Whooping Crane for British Columbia:

- 1.(6) adults April 25-26, 1962: Glen R. Ryder: Alexandria near Quesnel (McNulty 1966)
- 2.(1) adult August 15, 1995: Linda Andrusiat, mobs: near Quesnel River (Bowling 1996a, Davidson 1995, Toochin *et al.* 2014)
- 3.(2) sub-adults June 30, 2003: Victor & Terri Bopp (video) Salmon Valley Rd & Lacasse Rd, 30 km n. of Prince George (Johns *et al.* 2008)
(2) sub-adults July 6, 2003: Holley Yorston, Tim Angill: on sandbar near the confluence of the Salmon & Fraser Rivers (Johns *et al.* 2008)
(2) sub-adults August 22-28, 2003: Elsie Stanley, mobs (photo) Dome Creek near McBride (Johns *et al.* 2008)
- 4.(1) adult May 16, 2007: Keith Walker: north shore of Francois Lake, Prince George region (Toochin *et al.* 2014)
- 5.(2) adults October 10, 2013: Todd Stockner: Kispiox Valley (Toochin *et al.* 2014)

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