

WHOOPING CRANE - GRUS AMERICANA

Taxonomy: Kingdom: Animalia Phylum: Chordata Class: Aves Order: Gruiformes Family: Gruidae Genus: Grus Species: G. americana

Habitat:

Biomes: The only remaining naturally occurring Whooping Crane population spends the winter on the Gulf Coast, primarily in Texas's Aransas National Wildlife Refuge, and breeds in Canada's Northwest Territories and Alberta, mainly in Wood Buffalo National Park. Surrounded by the headwaters of four rivers, the Canadian breeding grounds lie on poorly drained soil interspersed with shallow wetlands. The Whooping Cranes nest in potholes dominated by bulrushes and containing other aquatic plants such as cattails, sedge, and muskgrass. These wetlands are divided by narrow ridges that support white and black spruce, tamarack, willows, dwarf birch, Labrador tea, and bearberry. On their Texas wintering grounds, Whooping Cranes spend their time on estuarine marshes, shallow bays, and tidal flats, sometimes venturing to nearby farmland. Salt grass, saltwort, smooth cordgrass, glasswort, and sea oxeye dominate the marshes, with Gulf cordgrass on the margins. Farther inland in their range are sandy, gently rolling grasslands with live oak, red bay, and bluestem plants. Migrating birds feed in croplands and roost in shallow, freshwater wetlands. Back to top

Distribution:

In US: Breeding populations winter along the Gulf coast of Texas, United States, near Rockport on the Aransas National Wildlife Refuge and along Sunset Lake in Portland, Matagorda Island, Isla San Jose, and portions of the Lamar Peninsula and Welder Point, which is on the east side of San Antonio Bay.

In Other Countries: NONE

Holistic Description: The Whooping Crane is the tallest bird in North America and one of the most awe-inspiring, with its snowy white plumage, crimson cap, bugling call, and graceful courtship dance. It's also among our rarest birds and a testament to the tenacity and creativity of conservation biologists. The species declined to around 20 birds in the 1940s but, through captive breeding, wetland management, and an innovative program that teaches young cranes how to migrate, numbers have risen to about 600 today.

Species Richness: NO SUBSPECIES

Population Dynamic: The Whooping Crane, a symbol of national and international efforts to recover endangered species, has returned from the brink of extinction but remains at risk. In 1941, the species reached a low of 15 or 16 migratory individuals wintering in Texas and 6 non-migratory birds in Louisiana. The Louisiana population did not survive. All whooping cranes alive today (437 in the wild + 162 in captivity = 599) are descendants of the small remnant flock in Texas in winter 1941-42. Although that population increased to 283 by winter 2011-12, several factors, especially human development and long-term water issues on the wintering grounds, continue to place it in jeopardy.

Evolution and Systematics:

Evolution: Fossils representing this species have been reported from the late Pliocene in Idaho and from Pleistocene and Holocene localities in Arizona, California, Florida, Illinois, Kansas, Kentucky, Michigan, N. Dakota, and Virginia.

Systematics: The avian order Gruiformes, which includes the rails, coots, and gallinules (Rallidae), long included a host of oddball taxa, many in their own taxonomic families but all united by a distinctive morphology of the leg bones.

Number of Species: NO SUBSPECIES

Number of Genera: NO SUBSPECIES

Physical Characteristics:

Size and Length: Length: 59.1 in (150 cm) Weight: 211.6-275.1 oz (6000-7800 g)

Wingspan: 90.2 in (229 cm)

Coloration: Adults are bright white birds with accents of red on the head. The legs, bill, and wingtips are black. Immatures are whitish below but mottled brownish-rusty above.

General Body Features: Whooping Cranes are very large, tall birds with long necks and long legs. The bill is stout and straight; the overall slender body widens to a plump "bustle" at the tail. In flight the wings are broad and the neck is fully extended.

Special Features of the Body: The neck of the whooping crane is very long so it can get food from the bottom of a lake, stream, or other body of water without getting its body feathers wet. The neck holds the trachea, which is over five feet long, that allows their bulging calls to be heard over five miles away. The whooping cranes neck is very muscular so that it can reach the ground to eat, reach up high to call and dance, and also to reach far behind on their body to preen. Also inside the neck includes the esophagus, vertebrate and spinal cord which are all very important for life.

Special Features of the Head and Sensory Organs: The piercing yellow eyes are great adaptations for seeing in the daylight, but the pupil is not large enough for night vision. Therefore, the whooping crane is a diurnal organism. The whooping crane has a long, slender beak that is pointed at the end used for foraging through grass, weeds, etc. Whooping cranes have great hearing, however, their ears are not visible as they are covered by feathers. The whooping crane has extremely long and skinny legs which allows them to stand in water without getting their body feathers wet. The long legs also balance the whooping cranes long neck while in flight. The feet of the whooping crane shows that they do not swim much, even though they do spend a lot of time in the water.

Dentition: BEAK/LAMELLAE/GIZZARD

Special Features of the Limbs and Digits: The gigantic wings of the whooping crane are strong, which is necessary for their long (six to eight week) migrations that can span thousands of miles. The wings are long and broad which allows the cranes to not have to flap as much during flight. Some of you may be wondering why whooping cranes have black on their wing tips. This is because the black feathers contain the pigment melanin which makes them stronger! Since the wing tips get the most wear during flight, it makes sense that the black feathers would be found there. The whooping cranes long, skinny toes allow the bird to support and balance its entire body in squishy situations, such as mud or other soft substrates.

Any Special Internal Anatomy: The heart and lungs are adapted to allow the bird to receive enough oxygen during high altitude flights which may reach up to 1800 meters. Whooping cranes usually fly at around 500 meters though, which makes them visible from the ground.

Sexual Dimorphisms: Males larger than females; captive males 7.3 kg, females 6.4 kg. Appearance of sexes similar.

Differences Between Juvenile Stage and Adult: Juvenile birds will have rusty or cinnamon colored feathers with the white.

Behavior:

Diurnal, Nocturnal, or Crepuscular: DIURNAL - CHECK SENSORY ORGAN FEATURES

Activity: Whooping Cranes are monogamous, forming pairs at the age of 2 or 3 years and mating for life. Courting pairs perform an elaborate, energetic dance display in which they leap, flap their wings, toss their heads, and even fling feathers and grass. Each breeding pair has a territory defended primarily by the male, who may attack intruding Whooping Cranes by running, flapping, hissing, stabbing, or jumping and slashing with his feet. New pairs often establish a territory near their parents. Whooping Cranes live and travel alone, in pairs, as families, or in small flocks of up to 7 birds, and sometimes flock with Sandhill Cranes. They may ignore or pursue other nearby birds, cattle, and deer. They spend their time on the ground and in shallow water, never perching in trees. They learn migration routes and nesting locations from other cranes (or from researchers in ultralight aircraft, as part of reintroduction efforts). Their strong homing instinct limits their dispersal to new habitat.

Locomotion: Ambulatory behaviors in cranes are termed Waddle, Walk, Run, Hop, Leap, and transitional actions such as Run-flap, Alight, Pre-flight-posture, Wing-spread-hold, and Spring-up. Waddle, infrequent, involves a bird sitting and walking on its tarsi; seen in chicks or incubating adults. Hop is seen in a bird with an injured leg or moving short distance while standing on 1 leg. In general, Whooping Cranes move with a smooth, stately elegance, giving the appearance of effortless gliding, legs straight, head and neck erect and rather stiff. Includes flapping, soaring, gliding, and downward gliding, which precedes alighting. Flapping flight involves shallow flaps. Soaring and gliding are combined in long flights in migration. Soaring is rising on an updraft in a circular pattern, followed by gliding in 1 direction with a gradual decrease in altitude. Swimming is most common in chicks and involves floating and leg paddling. No diving.

Communication and Perception: When startled, Whooping Cranes give a loud, single-note bugle call lasting less than one second. They call in unison when courting. While feeding they give a frequent low purr to keep in contact with each other.

Home Range: Male is the primary defender of family and territory. Nesting territories in Wood Buffalo National Park vary considerably in size: about 1.3–47.1 km². The “composite nesting area” is the area used by a pair of Whooping Cranes for a number of years. Resident pairs attack and chase singles and pairs trespassing into their territories. In the eastern migratory population, breeding pairs normally form by age 3 and establish territories of 0.6 to 4.1 km².

Degree of Sociality: Not as gregarious as the Sandhill Crane; tends to associate as pairs or a family on summer and winter territories. At these periods, subadults may be solitary or in flocks of 2–7 birds. During migration, travels as singles, pairs, a family, or small flocks of 4–7 birds.

Level of Aggression: Attack may include Run-flap, Hiss, Gape, Bill-stab, Jump-rake, Wing-thrash, and occasionally Mob. These behaviors are directed at conspecifics during territorial encounters. Alert behavior is evident when Whooping Crane notes some alarming stimulus; extends neck fully and head forward. Expands or contracts red crown and red-black mustache stripe; expansion indicates dominance or aggression, contraction subordination or illness. Dance involves components of most agonistic displays, Attack, and other action patterns.

Migration: Medium-distance migrant or resident. One population migrates on its own from Canada to Texas. A reintroduced population (Wisconsin - Florida) migrates with the guidance of ultralight aircraft. The other two reintroduced populations (Florida and Louisiana) are nonmigratory.

Predators:

Predators: Black Bear, Wolverine, Gray Wolf, Red Fox, Lynx, Bald Eagle, Northern Raven, Coyote, Golden Eagle, Bobcats, and Alligators.

Anti-Predator Defenses: Parents remain alert for evidence of predators. Eagles are watched with Monocular-gaze. Alarm Calls may be given at the sight of coyotes, bobcats, and other large predators. Adults may approach and threaten or attack small predators such as raccoons; may give a distraction display toward a large predator such as a bear or wolf.

Diet and Nutrition:

Adult Diet: Whooping Cranes eat invertebrates, small vertebrates, and plant material, which they find on the ground and in shallow water. They peck and probe sandy or flooded soils to find prey underground. They also glean insects, berries, and seeds from low vegetation and take prey from the soil surface, using their bills to stab larger animals. The Canada breeding population eats mollusks, crustaceans, aquatic insects, minnows, frogs, snakes, mice, voles, aquatic tubers, and berries, while the Wisconsin breeding population eats mostly aquatic animals. Whooping Cranes also eat waste grains including barley, wheat, and corn from harvested fields, particularly during migration. On the Gulf Coast they feed in brackish bays, marshes, salt flats, and flooded or burned uplands away from human disturbance, eating mostly blue crabs, clams, and other animal foods, along with some plant material such as wolfberry, cranberry, acorns, cordgrass, marsh onions, and prairie lily.

Juvenile Diet: ^^^^^

Special Adaptations for Getting Prey: CHECK FEATURES

Reproduction:

Mode of Reproduction: Monogamous

Mating System: Perennially monogamous; pair formation begins when birds are 2 and 3 yr old. In the Wood Buffalo-Aransas population, occasional 3-yr-olds nest. Individuals will remate, sometimes within only a few weeks, following the death of their mate. Average age of first egg production is slightly > 4 yr. Males become sexually mature at a younger age than females. Sex ratios are approximately equal at hatching.

Mating Season: March to May

Courtship: As a pair forms, the future mates associate continuously and perform several social and maintenance activities together, e.g., Unison Walk, Unison Call, and Dance. Dance may include most agonistic displays, elements of Attack, and other actions such as Spread-hold, Gape, Gape-sweep, Tuck-bob, Leap, Object-toss, Run-flap-glide, Hoover, and Bill Stab.

Territoriality: HOME RANGE

Mating: In the Pre Copulation Display, either member of the pair may walk slowly with its bill skyward, neck extended and slightly forward, emitting a low growl in 0.5-s bursts at 2-s intervals; second bird begins walking in the same manner behind the first, bill-up, calling; female eventually spreads her wings to the side with secondaries drooped. In copulation, the male walks and flaps onto the back of the female, lowers to sit position while flapping wings to maintain balance, presses his tail around his mate's tail to complete cloacal contact. The Copulation Call increases until it becomes a scream. Copulation may occur at any time of day but is most frequent at daybreak. Pair bonds that have resulted in nesting appear to last until one member of the pair dies.

Nesting: Pairs choose nest sites in shallow water of marshes, sloughs, or lake margins, frequently on small islands. They often take advantage of vegetation that hides the nest and incubating parent from predators. Each year the pair chooses a new nest site, sometimes in the same vicinity. The male and female build the nest together by piling up and trampling vegetation such as bulrushes, sedges, and cattails. The nest measures 2–5 feet across and has a flat surface or a shallow depression for the eggs.

Egg-Laying: Egg Shape: Elliptical Ovale Egg Length: 98.4 mm Egg Width: 62.4mm Egg Mass: 189g Egg Color: Light brown or olive buff overlaid with dark purplish-brown, dull brown, buffy brown, wood brown, or gray brown blotches of varying size, concentrated primarily at the blunt end. Ground color cream buff to olive buff. Shell smooth, occasionally slightly pimpled, mildly glossy. Eggshell Thickness: 0.604mm Incubation Period: 29-31 days

Hatching and Incubation/Gestation: Covered with down and able to walk and swim within a few hours of hatching.

Development: Chicks are precocial and can walk and swim within a few hours after hatching. One chick moved 2 m from the nest on its first foray. Newly hatched chick has swollen legs and feet with blood vessels evident beneath skin, giving skin a reddish cast. One chick left the nest with 1 parent about 21 h after pipping was noted.

Parental Care: Adults initiate brooding or respond to the Stress Call of a chick. Wing-quiver by chicks involves fluttering lifted wings while peeping and may solicit brooding. Both parents brood, but the female appears to have the major role.

Parents begin offering food when chicks show signs of hunger (food begging) and regularly thereafter. One chick first ate 30 h after hatching. Both parents feed the young, but the female feeds more often. Parent grasps food item in its bill and offers it to the young, which peck the parent's bill. Initially offers earthworms and insects, which may be mashed first, held at tip of bill, and offered to chick. Chick orients toward adult with neck pulled back and bill pointed up while peeping and pecking at adult's bill.

Lifespan: The whooping crane's lifespan is estimated to be 22 to 24 years in the wild.

Conservation:

Official Federal Status: Endangered

Special Statuses in Individual States: NONE

Threats: The Whooping Crane is listed as federally endangered and is on the 2014 State of the Birds Watch List, which lists bird species that are at risk of becoming threatened or endangered without conservation action. The North American Waterbird Conservation Plan rates the species a 16 out of 20 on the Continental Concern Score and lists them as a Species of High Concern. Thanks to intensive conservation efforts, its population has grown from a low of 21 - 22 in 1941 to about 600 individuals in 2011 (with around 160 of these in captivity). Whooping Cranes were uncommon but widespread in 19th-century prairie marshes of the northern U.S. and southern Canada, and began disappearing with the arrival of agriculture and hunting. They benefited from the Migratory Bird Treaty Act of 1916, the establishment of Canada's Wood Buffalo National Park in 1922 (three decades before breeding grounds were discovered there), and the 1937 establishment of Texas's Aransas National Wildlife Refuge. Today's only self-sustaining population migrates between those two refuges. In 1967 the Canadian Wildlife Service and the U.S. Fish and Wildlife Service began captive breeding programs and reintroduction efforts, using Sandhill Cranes as foster parents. The first reintroduction attempt failed, but efforts continue and three reintroduced populations exist currently, sustained by captive breeding: a resident Florida population, a resident Louisiana population, and a migratory Wisconsin - Florida population. The latter has been taught to migrate with the help of ultralight aircraft. Factors threatening all of these small populations include powerline collisions, severe weather on the Gulf Coast, contaminant spills from barges, and occasional shooting by hunters mistaking them for Sandhill Cranes, or intentionally by vandals. Habitat management involves water control, restrictions on encroachment of trees and human disturbance, and maintenance of agricultural fields as food sources. The species' future depends on continued intensive conservation.

Conservation Efforts: ^^^^^^^^^

Extra Facts:

1. Weighing 15 pounds, the Whooping Crane has a wingspan of more than 7 feet and is as tall as many humans, reaching a height of around 5 feet. Also measuring 5 feet in length is its trachea, which coils into its sternum and allows the bird to give a loud call that carries long distances over the marsh. The Whooping Crane probably gets its name from either its single-note guard call or its courtship duet.
2. The Whooping Crane walks with a smooth and stately gait. Its courtship dance is a spectacle of leaping, kicking, head-pumping, and wing-sweeping.
3. In 1941 there were only 21 Whooping Cranes left: 15 were migrants between Canada and Texas while the rest lived year-round in Louisiana. The Louisiana population went extinct, and all 600 of today's Whooping Cranes (about 440 in the wild and 160 in captivity) are descended from the small flock that breeds in Texas.
4. The only self-sustaining population of Whooping Cranes is the naturally occurring flock that breeds in Canada and winters in Texas. Three reintroduced populations exist with the help of captive breeding programs. One of these is migratory: researchers use ultralight aircraft to teach young cranes to migrate between Wisconsin breeding grounds and Florida wintering grounds.
5. The oldest Whooping Crane on record - banded in the Northwest Territories in 1977 - was at least 28 years, 4 months old when it was found in Saskatchewan in 2005.

Notable Species: NONE