



Whooping Crane Stopover Habitats on Hords Creek Lake, Texas U.S. Army Corps of Engineers, Fort Worth District

Friends of the Wild Whoopers (FOTWW) and the U.S Army Corps of Engineers (USACE) have a Memorandum of Understanding to evaluate Whooping Crane “stopover habitats” on USACE lake properties. The project involves the six state migration corridor within in the states of Texas, Oklahoma, Kansas, Nebraska, South Dakota and North Dakota. FOTWW has completed its evaluation of Hords Creek Lake properties in Texas and our recommendations are contained in this report.

There is only one wild self-sustaining population of Whooping Cranes remaining on earth. These birds are America’s symbol of conservation. They are the largest bird in North America standing 5 feet tall with a wing span of 7 feet (Figure 1). They are endangered species and need our help. This population nests and rears their young in Wood Buffalo National Park, Canada during spring and summer. After their chicks fledge, they migrate 2,500 miles through 6 states in the midsection of our nation to Aransas National Wildlife Refuge on the Texas coast where they spend the winter (see map Figure 4). Thus these birds are known as the Aransas-Wood Buffalo population.



Figure 1. Two adults and one juvenile Whooping Crane. They are the largest birds in North America standing 5 feet tall with a wing span of 7 feet. Photo by Klaus Nigge.

Destruction of nesting habitat and killing the birds for food decimated the population during the 1800's and early 1900's. Coupled with this is the loss of approximately 15 million wetland habitats in the 6 state migration corridor. In 1943 there were only 16 Whoopers remaining. With protection and habitat management the population has slowly increased to an estimated 535 in 2019.

Today, however Whooping Cranes are facing more threats to their habitats. During their 2,500 mile migration they must stop 15 to 30 times to rest and feed. Secure stopover habitats are needed throughout the migration corridor approximately every 25 miles. And more secure wintering habitats are needed along the Texas coast near the Aransas National Wildlife Refuge. Currently about half of the population winters off the Aransas National Wildlife Refuge where they are not as safe.

Continuous development along the coast is taking a serious toll on habitat.



Figure 2. Whooping Cranes often share habitat with other wildlife species such as the deer in this photo.

During migration Whooping Cranes often stop over on private lands, wildlife areas, lakes and some military bases. However, many private lands are being more intensively managed and face various forms of development. And some wetlands are becoming dryer due to global warming. FOTWW contends that lands and waters on USACE and military bases within the migration corridor can provide much needed relief. Some of these lands can be protected, developed and/or managed to provide more stopover habitats for endangered Whooping Cranes. Importantly, habitats for the cranes also benefit other species of wildlife and fish. Likewise Whooping Cranes are compatible with other wildlife species using the same habitats (Fig.2).

The most expensive part of establishing or improving habitat is land cost. If projects can be accomplished on government lands and Indian Reservations, the cost would be relatively minimal. Importantly any habitat projects deemed to be incompatible with the mission of the agencies involved would not be considered by FOTWW. The Memorandum of Understanding between USACE and FOTWW allows us to focus on Whooping Crane habitat assessment and management recommendations on lands under USACE jurisdiction. We first need to determine if any suitable areas could be managed, or appropriately developed, to provide stopover habitats for Whooping Cranes. The next step would be to work to encourage appropriate management. We are aware that some USACE lakes have been increasingly used by Whoopers during the past and we would like that to continue and increase.

According to the Lake Manager there is no currently developed management plan specifically for the management of Whooping Cranes. Friends of the Wild Whoopers urges project staff to coordinate with their Fort Worth regional officials, the U.S. Fish and Wildlife Service and Texas Parks and Wildlife to prepare a management plan. Hopefully FOTWW's report will be useful in this endeavor.

FOTWW has completed habitat evaluations on 32 military facilities, 8 Indian Reservations and 27 USACE lakes within the wild Whooping Crane migration corridor. Most of these properties currently have some suitable stopover wetland habitats while other areas could be enhanced with minor work.

USACE lakes within the 6 state migration corridor may become even more important to Whooping Cranes in the near future because of their locations and quality of “stopover habitats”.

WHOOPING CRANE STOPOVERS ON LAKES. Mostly, during migration, Whooping Cranes “stopover” on lakes, natural wetlands and small ponds on private farms just to rest overnight (Fig. 3). Like humans on a long trip they just need a small place to briefly stop, feed, rest and then continue their journey. Importantly, Whoopers are compatible with other wildlife and briefly share their



Figure 3. Whooping Cranes stopping over for the night. They will forage for food and then wade into the shallow water to roost for the night.

habitats. Ensuring that sufficient areas with the proper conditions as stopover sites are available is important for the survival of the species. Proactive techniques implemented by conservation interest can help reduce potential mortality that occurs during migration.

Based on information from a U.S. Geological Survey study, 58 radio-tagged Whooping Cranes provided “stopover habitat” location data over 8 years (2010-2018). None of these stopover sites were recorded on Hords Creek Lake. Relevantly, however, about three quarters of the total birds in the wild population were not radio-tagged and their stop over areas are unknown. Some of these birds may have stopped over on Hords Creek Lake. Whoopers normally migrate over or near Hords Creek Lake during April - May (northward migration) and fall during October – November (southward migration). Whoopers normally

stopover to rest late in the afternoon and depart early to mid-morning the following day when lake personnel are off duty. Hords Creek Lake and others that are located in the western area of the Whooping Crane migration corridor can be especially valuable. As the crane population increases the migration corridor may also expand in width and move westward.

FOTWW believes that the wild Whooping Cranes in the Aransas/Wood Buffalo population are capable of taking care of themselves with two exceptions. They need (1) humans to protect their habitats and (2) to stop shooting them. We firmly believe that the USACE can do much to protect and manage many “stopover habitats” within the migration corridor.

Whooping Cranes make two 2,500 mile migrations each year. They migrate to and from their winter habitats on the Texas coast to their nesting habitats in northern Canada (See migration map (Figure 4).

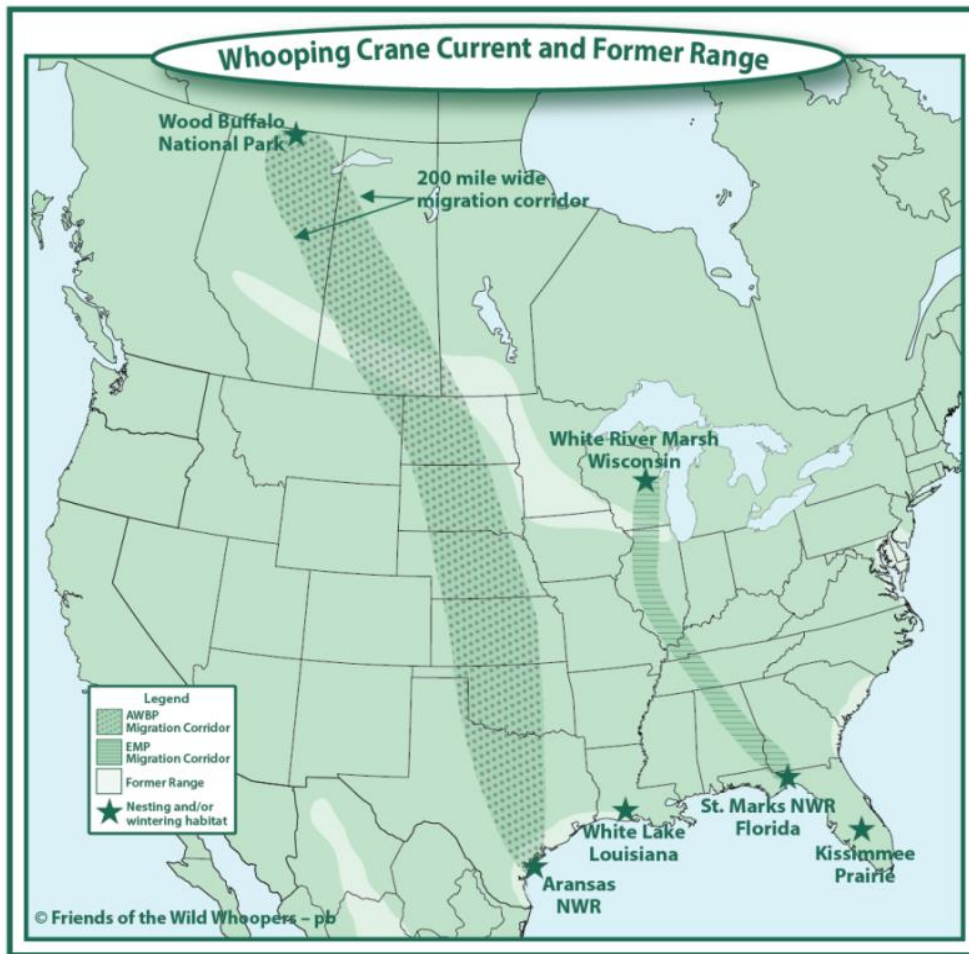


Figure 4. Whooping Crane migration corridor.

FOTWW Wildlife Biologist Chester McConnell and his Field Assistant Dorothy McConnell visited Hords Creek Lake on July 18, 2019 to assess potential “stopover habitats” for Whooping Cranes. David Hoover, Conservation Biologist, Kansas City, MO, USACE made arrangements for our trip. Brandon Moehrle, Ranger escorted us on a tour of the lake to examine potential places that could provide Whooping Crane “stopover habitats”. We discussed the natural resource objectives for Hords Creek Lake and needs for management.

FOTWW appreciates all involved with making preparations for a productive and enjoyable visit. Hords Creek Lake is located near Coleman, Texas. The U.S. Army Corps of Engineers, Fort Worth District administers the lake. Congress authorized the construction of the Hords Creek Dam and Lake project in the Flood Control Acts of 1941 and 1944. It was a cooperative project between the U.S. Army Corps of Engineers and the City of Coleman, which contributed over \$105,000 toward the water supply features of the project.

Construction of the project was started in February 1947, and was completed in June 1948. The mission is to supply water to the citizens of Coleman County, provide flood control in the West Texas area, and to “offer some of the best fishing, camping and boating in Texas”. Hords Creek Lake is located in the Colorado River Basin on Hoards Creek about 13 miles upstream from Coleman. The lake has a 510 acre conservation pool and a 1,260 flood control pool. The U.S. Army Corps of Engineers is the reservoir controlling authority. (Figure 6 is a satellite photo of Hords Creek Lake).

FOTWW uses the following listed features as a guide when evaluating potential “stopover roost sites”. These features are based on studying known stopover habitats and reviewing literature describing observations of other wildlife biologists. See Figure 5 that identifies an excellent “stopover habitat”.

Whooping Cranes and other wildlife need lakes, wetlands and small ponds with the following features as “stopover roost sites” during migration:

- Lakes/small ponds/wetlands from 0.3 acres and larger in size
- Lakes/ponds/wetlands with some shallow areas 2 to 10 inches deep for roosting sites
- Flight glide path clear of obstructions for Whooping Cranes to land near roosting sites
- No thick bushes or trees in or near landing site
- Gradual or gentle slopes into lakes/ponds where water is shallow
- Little or no emergent or submerged vegetation in lake at roost areas
- Extensive horizontal visibility from roost site so predators can be detected
- 200 or more yards from human development or disturbance such as power lines
- Agricultural grain fields or pastures land within one mile of stopover site for foraging

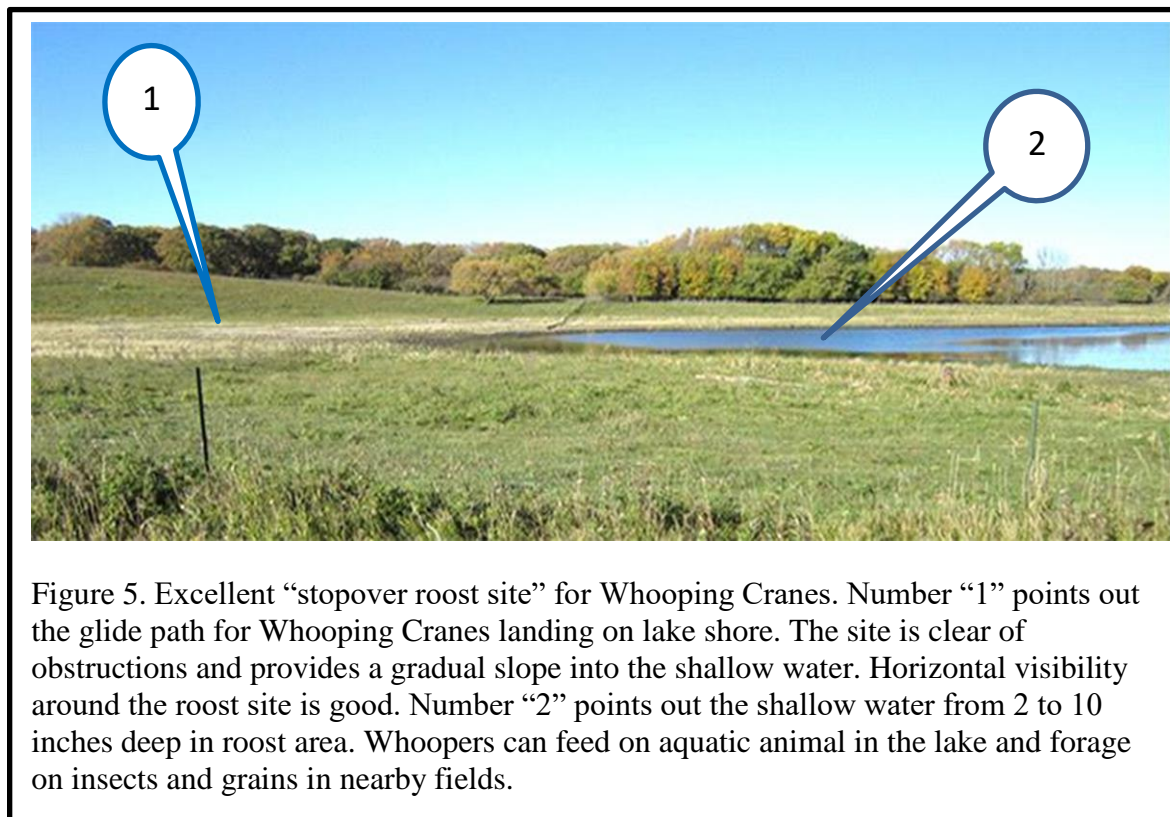




Figure 6. Satellite photo of Hords Creek Lake. Clouts refers to places where photos were made.



Figure 7. Excellent “stopover roost site” for Whooping Cranes **with exception** of electric wires about 100 yards from the wetland (see arrows). Importantly the electric wires are below the canopy of the tall trees which may help prevent any cranes stopping over from colliding with the wires. The glide path for Whooping Cranes landing on the wetland shore is good. Trees closely surrounding the wetland are low in height. The site is clear of obstructions (except for the electric wires) and the shore provides a gradual slope into the shallow water. Horizontal visibility around the roost site is good. Water depth in the wetland roost area varies from two inches to twelve inches based on the species of vegetation present and egrets wading there. Whoopers can feed on aquatic animal in the lake and forage on insects and grains in nearby fields. Collisions with power lines is one of the most numerous causes of Whooping Crane deaths. Unfortunately the power lines are not going to be moved. Also it is unlikely that the cranes will contact these wires due to their location and low level.



Figure 8. Photo of same wetland as in Figure 7. Note that the water is shallow, vegetation in and around the ponded water is short and the trees around the ponds are low in height. More details are in Figure 7.



Figure 9. This small pond flows into the wetland. It can play an important role in Whooping Cranes selecting this area as a “stopover habitat. Management needs: The large tree should be cut and the bushes and weeds in the marked area along the shore should be clipped with a “Bush Hog”. This will provide a good landing area and foraging area. In future years this small area could be treated with a prescribed fire.



Figure 10. This photo depicts an excellent Whooping Crane “stopover habitat”. The inlet between the two arrows provides most needs of the cranes. Flight glide paths to and from the site is clear of obstructions for Whooping Cranes to land near roosting sites. There are no thick bushes or trees in or near landing site. There are gradual or gentle slopes into lake. The lake is shallow near the edge ranging from 2 inches to 10 inches in depth. Little or no emergent or submerged vegetation is in lake at roost area. There is extensive horizontal visibility from roost site so predators can be detected. The specific site is 200 or more yards from human development or disturbance.



Figure 11. This is a typical photograph of the shore area of Hords Creek Lake. Flight glide paths to and from the site are clear of obstructions for Whooping Cranes to land near roosting sites. There are no thick bushes or trees in or near landing site. There are gradual or gentle slopes into lake. The lake is shallow along the shore ranging from 2 inches to 10 inches in depth. Little or no emergent or submerged vegetation is in lake at roost area. There is extensive horizontal visibility from roost site so predators can be detected. The specific site is 200 or more yards from human development or disturbance. The lake area is mowed several times each year and is a beautiful area.



Figure 12. This western area of the lake is shallow and attractive to a large variety of waterfowl and other birds. The shore at the arrow is clear of bushes and grass is mowed. We believe Whooping Cranes would favor this area because it includes all their needs and it is the most remote area adjacent to the lake.



Figure 13. **If** Whooping Cranes admire beautiful sites, they will love this one. Not only is it a beautiful site but it will fulfill their “stopover habitat” needs. The mowed shore is an ideal place for the Whoopers to land. No bushes or trees to block their landing. Then they can forage for insects, frogs, lizards, seed in the grass, etc. Importantly, due to the open landscape, they can observe any predators that may try to consume them. When they decide they can walk down the gradual, gentle shore slopes into the lake where water is shallow and there spend the night. The next morning the Whoopers can wade along the shore in the tall grass and small bushes looking for their breakfast. They may stay another day or several, or maybe a week. But their desire is to get to the Texas coast or Wood Buffalo, Canada nesting grounds (depending on the season). So sooner or later they will leave this wonderful “stopover habitat” and fly on to their winter or summer destination.

DESCRIPTION OF EXISTING “STOPOVER SITES”: The photos (Figs. 6 thru 13) illustrate existing “stopover areas” on Hords Creek Lake. These areas are currently managed in an exceptional manner and can provide habitats where endangered Whooping Cranes can rest, forage and roost during their two annual migrations.

The size and configuration of these lake stopover areas vary with the levels of lake water. When the photos in this report were taken, water levels were “normal”. Flight glide paths to the shore areas are available from different directions for approaching cranes. The shore areas at the 8 sites vary in the amount of management necessary to clear bushes, trees and other obstructions. Horizontal visibility from the shore and water roost sites allows Whooping Cranes to detect any predators that may be in the area. The slope of the shore and lake edge at the 10 sites is gradual and some water depths of 2 to 10 inches are available during “normal” lake water levels. There is little emergent or submerged vegetation in the lake at these roost sites. The water quality is good and supports abundant aquatic life. Foraging is available on USACE property and in nearby agriculture fields. In addition there are wild foods in adjacent managed grasslands and wetlands that provide an abundance of insects, wild seeds, snakes and other wild food.

MANAGEMENT OBJECTIVES FOR HORDS CREEK LAKE WHOOPING CRANE STOPOVER AREAS:

There are dozens of potential stopover habitats for Whooping Cranes on Hords Creek Lake. The lake shores have many beach sites that are mostly level with gentle slopes into the shallow waters. On many of these areas a few bushes and trees will need to be cut and maintained with occasional management. These conditions are mostly minor obstacles and can rather easily be managed to provide good “stopover habitat” for Whooping Cranes. These sites are important and we encourage Hords Creek Lake personnel to protect and manage them carefully. The “stopover habitat” areas can provide some diversity of stopover habitats for endangered Whooping Cranes and many waterfowl, wading birds, shorebirds and other wildlife species that need open sites on shores and shallow wetlands. *Friends of the Wild Whoopers strongly recommends that endangered Whooping Crane “stopover habitats” be added to the Management Plan at Hords Creek Lake.*

MANAGEMENT PRESCRIPTIONS:

1. Monitor the 10 Whooping Crane stopover habitats identified in this report to suppress any tall vegetation (over 2 feet tall), noxious weeds, grass, shrubs and trees through prescribed fire (if not prohibited on this USACE property), mechanical means (rotary cutter/Bush Hog) and appropriate chemical application if necessary. With experience gained through management, USACE personnel can apply their experience to other sites around the lake shores of Hords Creek Lake. FOTWW officials will also be available to offer advice when needed. *FOTWW recognizes that the Hords Creek Lake staff is currently managing the landscape predominantly as we describe. Our purpose is to insure that the staff understands why their ongoing management is good for endangered Whooping Cranes as well as other wildlife species.*

2. Review and update the lake Management Plan and other policy documents to include protection, improvement and development of Whooping Crane stopover habitat. **These endangered birds need protection and management on USACE lakes due to continuing habitat losses on private lands.**

CONCLUSIONS:

FOTWW was pleased to have the opportunity to visit Hords Creek Lake. We were pleased to observe the various sites that can be protected and managed to provide some excellent “stopover habitat” for Whooping Cranes. USACE managers should focus on protecting all stopover sites described in this

report. These areas currently have some good potential “stopover habitats” with safe roosting features and nearby agricultural landscapes that provide foraging opportunities. The lake and land area also has good fish and wildlife habitat for a large variety of wildlife species.

We sincerely appreciate the interest and cooperation of Hords Creek Lake and Fort Worth District personnel. We are grateful to James Thompson, Lake Manager and Brandon Maehle, Ranger who led us on a tour of the lake to examine potential places that could provide Whooping Crane “stopover habitats”. Likewise FOTWW is thankful to Martin K. Underwood, Environmental Stewardship Business Line Manager for the Trinity Region, USACE who cooperated with FOTWW during our evaluation. And a special thanks to David Hoover, Conservation Biologist, Kansas City, MO, USACE who made some arrangements for our trip.

Recommendation: USACE managers should focus on areas with suitable roosting characteristics and safe landscapes. Such areas should not be near power lines. They should be as far away as practical from roads and human activities that may disturb the birds. And there should be extensive horizontal visibility from the roost sites. Implement the features listed on page 6 of this report.

We urge the USACE to seek appropriation funds for additional development of shore areas adjacent to shallow water locations.

I also appreciate FOTWW’s Field Assistant Dorothy McConnell who helps guide me along the highways, keeps records of special areas visited and records of wading birds sighted. Importantly, I also appreciate the assistance of FOTWW Vice-President Pamela Bates in preparing this report.



FRIENDS OF THE WILD WHOOPERS

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