



Whooping Crane Stopover Habitats on Lake Sharpe, South Dakota, U.S. Army Corps of Engineers, Omaha District

The primary purpose of this report is to: (1) protect existing wild Whooping Crane “stopover habitats; (2) improve existing habitats where needed; and (3) create new “stopover habitats” where there are opportunities.

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 7state migration corridor within in the states of Texas, Oklahoma, Kansas, Nebraska, South Dakota, North Dakota and Montana. FOTWW has completed its evaluation of Lake Sharpe properties in South Dakota and our recommendations are contained in this report.

FOTWW appreciates USACE personnel who accompanied us. They were well informed about the lake’s abundant habitats. So, together, we successfully identified many stopover habitats.

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 tallest 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.



Figure 1. Two juveniles and two adult Whooping Cranes.

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 7 states in the midsection of our nation to Aransas National Wildlife Refuge on the Texas coast where they spend the winter (Figure 2). These birds are known as the Aransas-Wood Buffalo population.

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 16 million wetland acres in the 7state migration corridor. In 1943 there were only 16 Whoopers remaining. With protection and habitat management the population has slowly increased to an estimated 506 in 2020.

Today, however Whooping Cranes are facing more threats to their habitats. During their 2,500 miles 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.

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) humans 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 miles migrations each year. They migrate to and from their winter habitats on the Texas coast to their nesting habitats in northern Canada (Migration map Fig. 2).

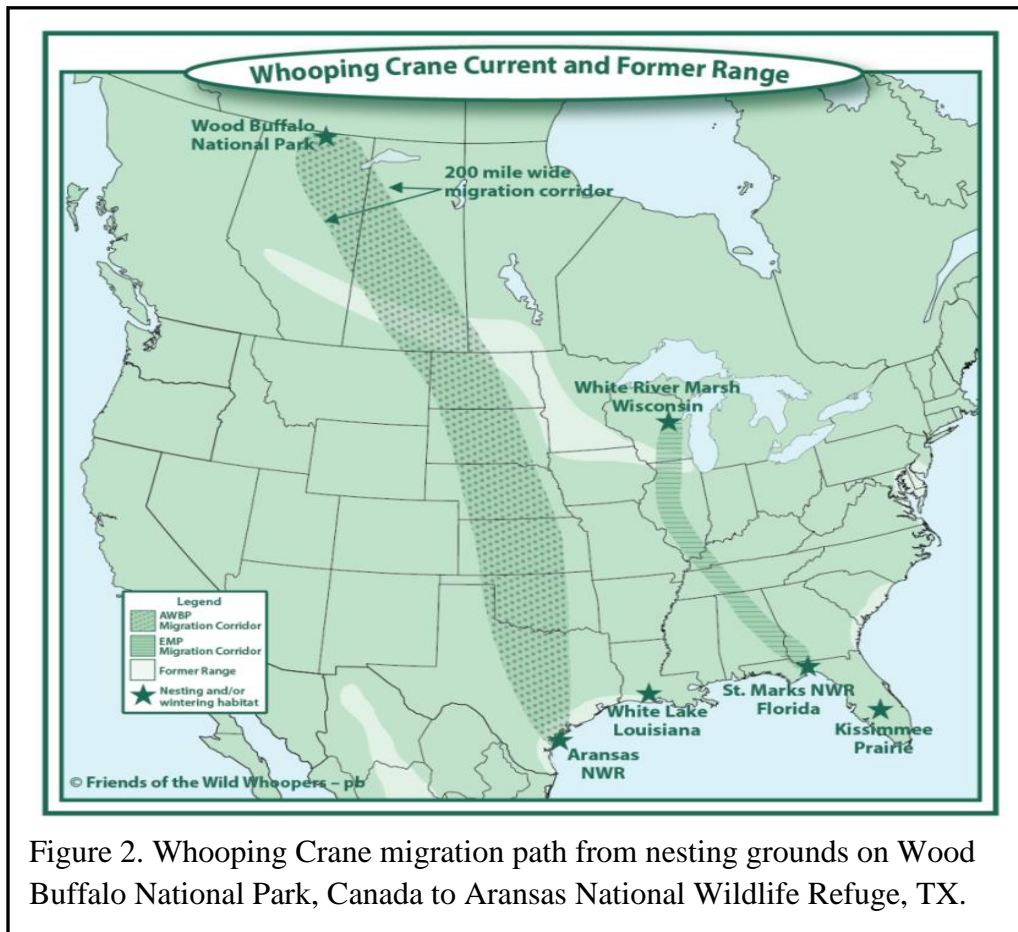


Figure 2. Whooping Crane migration path from nesting grounds on Wood Buffalo National Park, Canada to Aransas National Wildlife Refuge, TX.



Figure 3. Deer and other wildlife species often use the same habitats as Whooping Cranes.

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, military bases and Indian Reservations within the migration corridor can provide much needed relief. Some of these lands can be developed and/or managed to provide more stopover habitats for endangered Whooping Cranes. Importantly, habitats for the cranes also benefit many other species of wildlife and fish. So Whooping Cranes are compatible with other wildlife species using the same habitats (Fig. 3).

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.

FOTWW has completed habitat evaluations on 32 military facilities, 8 Indian Reservations and 34 USACE lakes within the wild Whooping Crane migration corridor. Some of these properties currently have suitable stopover wetland habitats while other areas could be enhanced with minor work.

The USACE and FOTWW Memorandum of Understanding allows FOTWW 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.

USACE lakes within the 7state migration corridor are likely to become even more important to Whooping Cranes in the near future because of their locations and quality of “stopover habitats”. Lake Sharpe and others that are located in the Whooping Crane migration corridor can be especially valuable. As the crane population increases the migration corridor may also expand in width.

Lake Sharpe is just one of the 34 USACE lakes that FOTWW has evaluated. We are aware that Whooping Cranes have visited Lake Sharpe and we expect that to continue and increase. United States Geological Survey personnel used location data acquired from 58 unique individuals fitted with platform transmitting terminals that collected global position system locations. Radio-tagged birds provided 2,158 stopover sites over 10 migrations and 5 years (2010–14) using individual Whooping Cranes. Whooping Cranes were observed in the vicinity of lake property several times (See Appendix A). Regrettably FOTWW could find no reference to Whooping Cranes in Lake Sharpe’s management documents (USACE or USFWS). *Friends of the Wild*

Whoopers urges project staff to coordinate with their Omaha District officials and the U.S. Fish and Wildlife Service (USFWS) to prepare a management plan for endangered Whooping Cranes.

Whooping Cranes normally migrate over or near Lake Sharpe during April - May (northward migration) and fall during October – November (southward migration). They normally stopover to rest late in the afternoon and depart early to mid-morning the following day.

Mostly, during migration, they stopover on lakes, natural wetlands and small ponds on private farms just to rest overnight. Like humans on a long trip they just need a small place to briefly stop, feed and then continue their journey. Proactive techniques implemented by conservation interest can help reduce potential mortality that occurs during migration.

Document review to aid in understanding Lake Sharpe wildlife:



Figure 4. Whooping Crane stopping over for the night or a few days.

FOTWW always reviews lake management documents to obtain a more comprehensive understanding of the project. ***A summary of our review follows:***

Lake Sharpe is a major reservoir in South Dakota formed by the Big Bend Dam on the Missouri River. The lake lies in the mid-west prairie region of South Dakota between Fort Thompson and Pierre S.D. The lake is 80 miles long with a shore line of 200 miles.

The dam and reservoir were built between 1959 and 1963 to encourage development in the Missouri basin. Today, approximately 80,000 acres of public lands and water provide a variety of

benefits to the public including flood control, recreation, conservation of our natural resources, fish and wildlife habitat, irrigation and hydropower production.

The terrain in this part of South Dakota varies from rugged bluffs to gently rolling uplands. The lake is surrounded by prairie grasslands with ash, cottonwood, oak and cedar trees. This vegetation is found along the ravines and tributary streams. Large migrations of waterfowl, wading birds and shore birds, use the lake as an important stopover during spring and fall migrations. Importantly endangered Whooping Cranes are observed occasionally along shore areas and inland crop and grazing areas. Birds of prey, songbirds, and upland game birds are also abundant.

The COE has a natural resources program to improve wildlife habitat by planting hundreds of acres of food plots, planting thousands of trees and encouraging dense cover. Their goal is to enhance natural habitats for the variety of animals.

Whooping Crane “stopover habitat “assessment: FOTWW Wildlife Biologist Chester McConnell and FOTWW Field Assistant Dorothy McConnell visited Lake Sharpe on September 12, 2019 to assess potential “stopover habitats” for Whooping Cranes. David Hoover, Conservation Biologist, Kansas City, MO, USACE made arrangements for the trip and accompanied us on the field evaluation. Lake Sharp personnel made the photos in Figures 7 through 14 after FOTWW’s camera was lost. FOTWW appreciate the staff’s assistance.

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 pasture land within one mile of stopover site for foraging



Figure 5. Excellent “stopover roost site” for Whooping Cranes. Number “1” points out the glide path for Whooping Cranes landing on lakeshore. The site is clear of obstructions and provides a gradual slope into the shallow water. Horizontal visibility around the roost site is good. Number “2” points out the shallow water from 2 to 10 inches deep in roost area. Whoopers can feed on aquatic animal in the lake and forage on insects and grains in nearby fields.



Figure 7. Counselor Creek: This photo on Counselor Creek was made after heavy rains and water levels were higher than normal. At normal levels the stream banks are much wider and would be more useful as Whooping Crane “stopover habitats”. Management needs include treatment of stream sides with herbicides to create open strips approximately 30 feet wide by 100 feet long. This would allow habitat openings wide enough to be useful to Whoopers during all but extreme highwater levels.



Figure 8. Counselor Creek: This photo also on Counselor Creek was made after heavy rains and water levels were higher than normal. At normal levels the stream banks are much wider as indicated by the yellow arrow and would be useful “stopover habitats”. The vegetation on stream sides could be treated with herbicide to create wider open strips approximately 30 feet by 100 feet long. This would allow habitat openings wide enough to be useful to Whoopers during all but extreme highwater levels.



Figure 9. Counselor Creek. Water levels were higher than normal when this photo was made which caused the “stopover habitat” to appear less desirable. Yet, the water level will go down and cause the shoreline habitat and wetland habitat to be more useful. The open grasslands in the distance will also be a useful forage area for Whoopers to forage on plant seed and insects.



Figure 10. Good Soldier Creek. Focus on the water along the edge of the land area. The light color area is shallow water. Such areas are good foraging sites for the Whoopers. These areas are also prime roosting areas for Whooping Cranes. They like shallow water about 2 inches to 10 inches in depth to roost in. The 5 feet tall Whooping Cranes can defend themselves against predators in shallow water.



Figure 11. Good Soldier Creek. The space between the two arrows is a long stretch of shallow beach area. It was caused by eroding cliffs and erosion from upland areas. The site makes a good “stopover area” for migrating Whooping Cranes. The site is located a far enough distance from the highway so that the cranes would likely not be bothered.

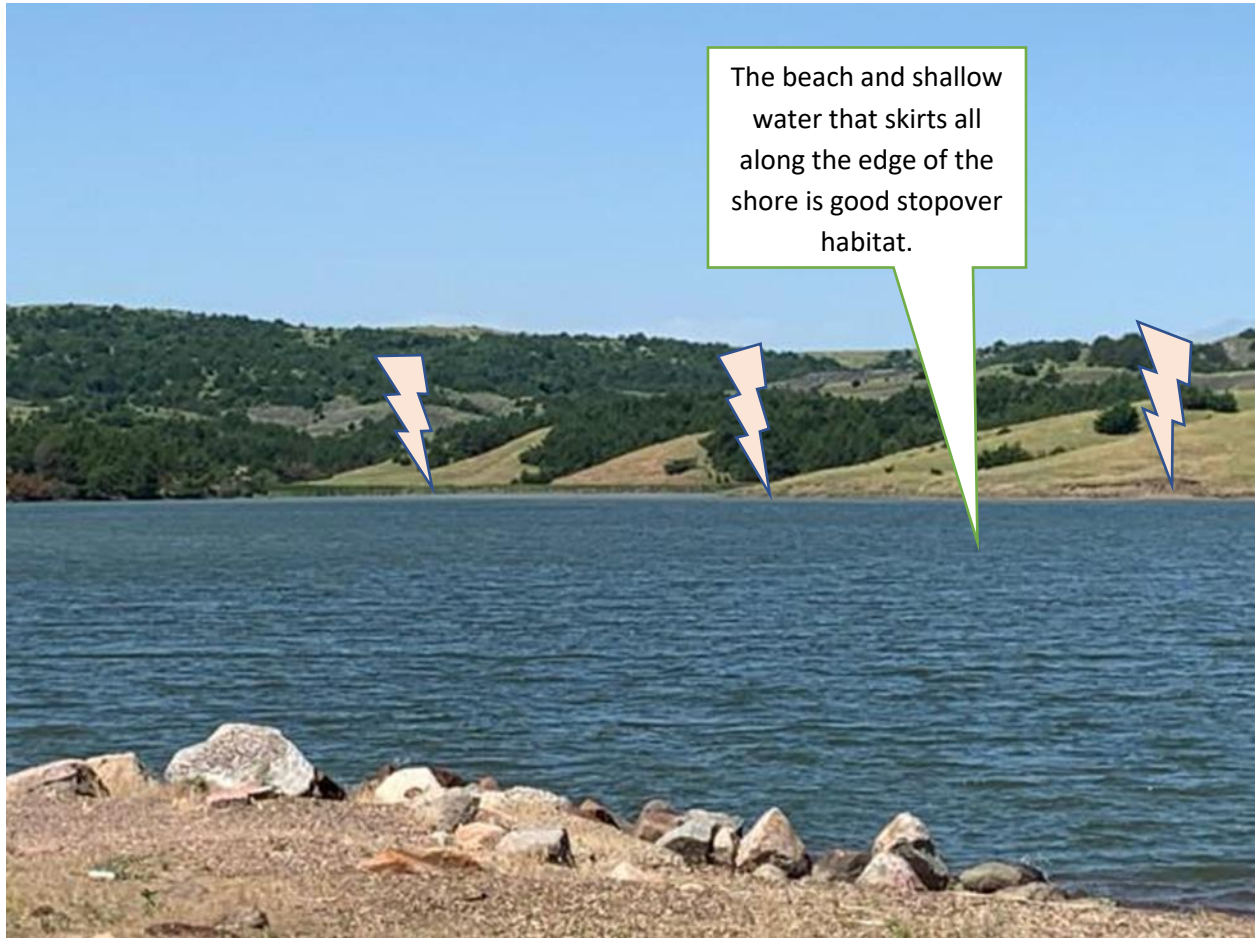


Figure 12. Good Soldier Creek. The far side of the road provides some shallow water and small beach areas for Whooping Cranes to forage in and for shallow water roosting sites. The adjacent fields likewise serve as foraging and resting habitats. Importantly, any predators in the area would likely be spotted in the open fields.



Figure 13. Medicine Creek. This photo includes some excellent “stopover habitat” for migrating Whooping Cranes. The area is a safe landing site. Note the openness which allows the cranes to see in every direction and detect predators. In addition, this area has an abundance of plant seeds and insects for a food source. The cranes like such areas to spend several days to rest and feed.

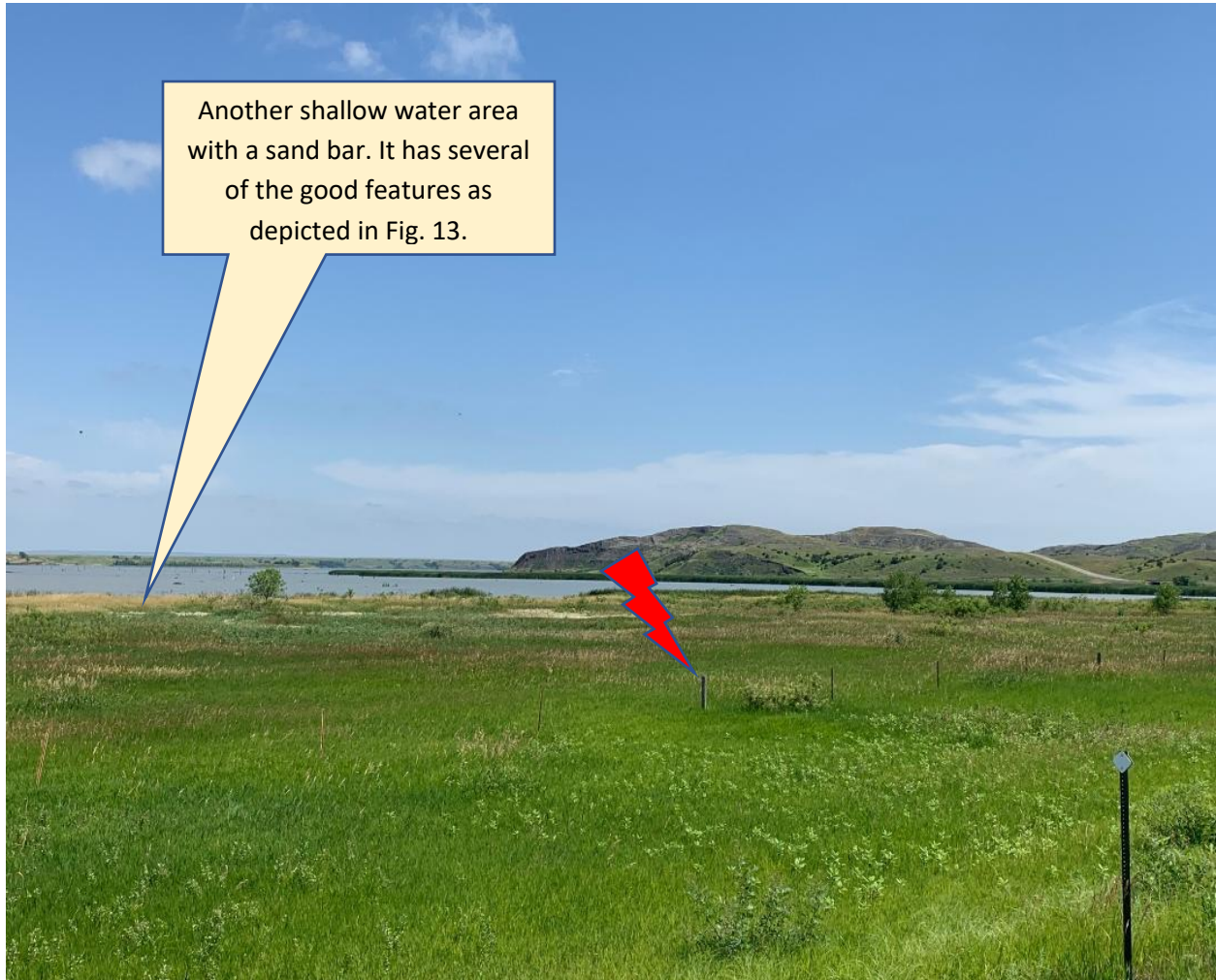


Figure 14. Medicine Creek. The area along the shore and 300 feet back is an excellent location. for Whooping Cranes to land. Caution is needed however because of the fence (red marker) which could cause injure or kill Whooping Cranes that may crash into it during low flight. A management project should remove the fence or relocate it an additional 300 feet back from the water edge. Otherwise this location is excellent as a “stopover site” for the cranes.



Figure 15. Medicine Creek. This photo shows a site that is currently not suitable for Whooping Crane use. It could, however, be developed into a “stopover site” with careful management. A management plan could be prepared to remove, or cut back the bushes, on the shore line identified by the yellow markers. All the vegetation within an area 300 feet long by 100 feet back from waters edge should be cleared. Then the clearing should be disked to a depth of about 8 inches to help retard more bushes from growing. Management to help retard new vegetation growth may be necessary for several years.

RECOMMENDATION

1. FOTWW urges the Natural Resource Manager to identify and monitor the numerous potential Whooping Crane “stopover areas”. The wild Whooping Crane population is increasing and more good stopover areas will be needed. These sites are also useful to other wildlife species.
2. In addition to these recommendations, FOTWW recommends that USACE personnel also study the 15 photographs in this report as tools to aid in application of future management practices.
3. USACE managers should focus on areas with suitable “stopover habitat” characteristics” and safe landscapes. They should be as far as practical from roads and human activities that may disturb the birds. And there should be extensive horizontal visibility from the roost sites. Such areas should not be near power lines. Electric transmission lines are in place across some locations near the lake. Such lines have caused the death of Whooping Cranes when the birds flew into them in some areas. The Natural Resource Specialist should coordinate with the electric company to get “aerial marker balls” installed on the wires so Whooping Cranes may observe the transmission lines. Implement the features listed on page 6 of this report.
4. Where practical all “stopover habitats” identified should be managed. Management of vegetation in the early stages of growth is often more successful and less costly.
5. We urge the Natural Resource Manager to keep a close watch on all invasive plants and eradicate any as soon as they are detected. Phragmites is the plant of major concern on some COE lakes.
6. Numerous agriculture fields and wild vegetation are in abundance surrounding Lake Sharp. These will help provide plentiful seed and insect for Whooping Crane food. These lands should provide diversity to the habitats and provide good foraging areas for Whooping Cranes and other wildlife.
7. Every effort should be made to prevent illegal off-road vehicle and conflicting recreational use along the shoreline. This is especially important during the Whooping Crane migration periods of April – May and October – November.
8. FOTWW urges project staff to coordinate with their Omaha District officials and the U.S. Fish and Wildlife Service (USFWS) to prepare a management plan for endangered Whooping Cranes.

CONCLUSION

FOTWW was pleased to have the opportunity to visit Lake Sharpe. We were delighted to learn about the numerous exceptional sites that provides excellent “stopover habitat” for Whooping Cranes and other wildlife. Only a relatively small amount of habitat development and management is needed to maintain additional stopover habitat areas for the cranes. USACE managers should focus on these sites with suitable roosting characteristics and safe landscapes. The lake and land area also good fish and wildlife habitat for a large variety of species. FOTWW evaluation found that USACE is accomplishing excellent management on Lake Sharpe.

We sincerely appreciate the interest and cooperation of the USACE officials. We are grateful to David Hoover who arranged our schedule, accompanied us on the evaluation trip and provided us with documents and photographs that assisted in our evaluation. I also appreciate FOTWW’s Field Assistant Dorothy McConnell who helps guide me along the highways, keeps records of special areas visited, makes records of large wading birds in project areas and reviews FOTWW’s reports. Likewise, I also appreciate the assistance of FOTWW Vice-President Pamela Bates in helping to preparing this report and other duties that she is responsible for.



Chester A. McConnell

**Chester A. McConnell, President
Friends of the Wild Whoopers**

Appendix A: USGS open file report 2015 - 1166

By Aaron T. Pearse,¹ David A. Brandt,¹ Wade C. Harrell,² Kristine L. Metzger,³ David M. Baasch,⁴ and Trevor J. Hefley⁵

Abstract: Whooping cranes (*Grus Americana*) of the Aransas-Wood Buffalo population migrate twice each year through the Great Plains in North America. Recovery activities for this endangered species include providing adequate places to stop and rest during migration, which are generally referred to as stopover sites. To assist in recovery efforts, initial estimates of stopover site use intensity are presented, which provide opportunity to identify areas across the migration range used more intensively by whooping cranes. We used location data acquired from 58 unique individuals fitted with platform transmitting terminals that collected global position system locations. Radio-tagged birds provided 2,158 stopover sites over 10 migrations and 5 years (2010–14). Using a grid-based approach, we identified 1,095 20- square kilometer grid cells that contained stopover sites. We categorized occupied grid cells based on density of stopover sites and the amount of time cranes spent in the area. This assessment resulted in four categories of stopover site use: unoccupied, low intensity, core intensity, and extended-use core intensity. Although provisional, this evaluation of stopover site use intensity offers the U.S. Fish and Wildlife Service and partners a tool to identify landscapes that may be of greater conservation significance to migrating whooping cranes. Initially, the tool will be used by the U.S. Fish and Wildlife Service and other interested parties in evaluating the Great Plains Wind Energy Habitat Conservation Plan.

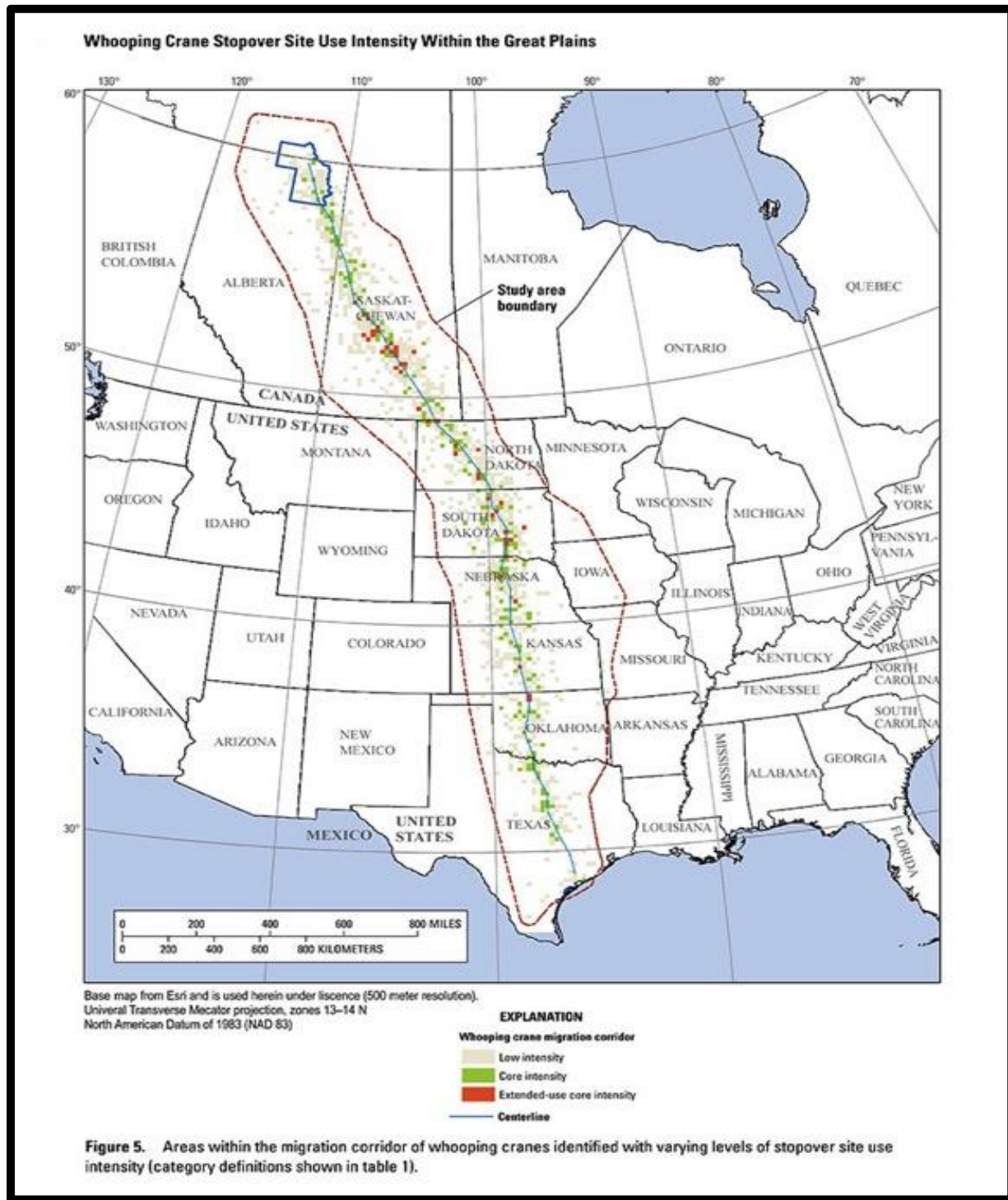


Figure 15. Map showing migration corridor of Aransas-Wood Buffalo Whooping Cranes population from Wood Buffalo National Park, Canada to Aransas National Wildlife Refuge, Texas.