

U.S. FISH AND WILDLIFE SERVICE - SPOTLIGHT SPECIES ACTION PLAN

Common Name: Whooping crane

Scientific Name: *Grus americana*

Lead Region: Region 2

Lead Field Office: Corpus Christi Ecological Services Field Office (in coordination with Aransas National Wildlife Refuge)

Species Information:

Status: Endangered

Recovery Priority Number or Listing Priority Number: 2C

Recovery Plan: International Whooping Crane Recovery Plan, 3rd Revision, March 2007

Most Recent 5-year Review: None; scheduled for initiation in FY 2010.

Threats: Although the whooping crane has shown great resilience coming back from a low of 15 birds in 1941 to 247 in spring, 2009, the population continues to face growing threats. Human population growth will continue to reduce and degrade its suitable migration and winter habitat.

- A. Present or threatened destruction, modification, or curtailment of habitat or range:
 - 1. Expanding human developments are causing loss of migration and winter habitat needed to meet recovery goals for downlisting and/or delisting.
 - 2. At Aransas National Wildlife Refuge (NWR) and throughout the central Texas coast, decreases in freshwater inflows from water diversions and reservoir construction add to the following threats:
 - a. Reduction in available main food items at Aransas NWR, the blue crab (*Calinectes sapidus*) and wolfberry (*Lycium carolinianum*).
 - b. Increased intervals when winter marsh salinities exceed the threshold of 23 parts per thousand (ppt) thereby decreasing the availability of fresh drinking water for the cranes.
 - 3. Throughout the migration range of the wild Aransas-Wood Buffalo population (AWBP), flows needed to maintain riverine migration habitat are being lost.
 - 4. Conversion of prairie habitat for agricultural usage, responsible for much of the original habitat loss for the species, continues into the present.
- B. Overutilization for commercial, recreational, scientific, or educational purposes:
 - 1. Vandalism and migratory bird hunting are causing occasional mortality from shootings during migration and winter.
 - 2. Human disturbance (boating, hunting, fishing, and photography) reduces fitness of individual cranes that are displaced from preferred migration or winter habitat.
- C. Disease and/or predation:
 - 1. Natural diseases: avian tuberculosis and infectious bursal disease.
 - a. Disease exposure and transmission risks increase with the decrease in habitat availability in migration.
 - 2. Introduced diseases: West Nile virus, avian influenza (H5N1).

3. Predation of eggs and chicks on the nesting grounds by ravens, wolves, and black bears.

D. The inadequacy of existing regulatory mechanisms:

1. Much habitat is on private lands where proposed developments have no Federal nexus.
2. Federal policies often help to promote development which results in habitat loss for the cranes. Examples include Federal flood insurance aiding residential development in coastal salt marshes in the species' winter range, farm subsidies that encourage land use conversion in migration range, and Federal tax breaks given to wind-power companies, resulting in proliferation of infrastructure for wind power generation throughout the range.

E. Other natural or man-made factors affecting continued existence:

1. Currently, extreme climate events, including drought and storms (hurricanes) can:
 - a. Decrease production on the nesting grounds during dry years from increased predation and reduced food.
 - b. Drought in the migration corridor decreases habitat availability.
 - c. Spring blizzards have potential to cause mortality to whooping cranes in migration.
2. Climate change projections indicate that the central Texas coast has the potential to become hotter and drier with more droughts. This same scenario would also likely reduce wetland habitat throughout the migration corridor and on the nesting grounds. At Aransas NWR, reduced freshwater inflows and increased evaporation due to global climate change would increase salinity of the marshes and cause decreases in the primary crane foods (blue crab and wolfberry). If salinities at Aransas NWR more frequently exceed a threshold of 23 ppt, cranes would be forced to seek fresh water to drink. Mangroves are projected to spread northward through intertidal marshes and decrease the suitability of crane habitat. Accelerating sea level rise, compounded by land subsidence, is generally predicted to occur along the entire coastline where the cranes winter, potentially drowning much of the existing salt marsh and tidal flat habitat.
3. Loss of genetic diversity will continue unless the wild population is able to grow to approximately 1,000 individuals.
4. Chemicals:
 - a. Continued barge and boat traffic along the Intracoastal Waterway in Texas, pose a threat of petroleum product spills.
5. Collision with power lines, fences, aircraft, guyed towers, and wind turbines.

Target: The goal for the next five years is to maintain the species' status as stable or increasing.

Measures and Actions: To promote recovery of the whooping crane.*

*Necessary to maintain or improve the current status of the species.

Measure	Action	Threat/ Listing Factor	Responsible Parties	5-Year Cost (Available dollars/Source)
Protect 10,000 acres of winter habitat.	Purchase easements and fee title lands for 10,000 acres of occupied winter habitat, potential habitat and upland buffer in the next 5 years.	Factors A,E	USFWS-ES & Refuges, Texas Nature Conservancy, CBBEP	\$9,000,000 Section 6 RLA, CIAP.

Crane habitat will be restored, enhanced and/or maintained on the newly protected 10,000 ac.	Cooperative agreements with NGO partners and Private Lands Agreements with landowners will be used to restore, enhance, and maintain the occupied and potential habitat, as well as the upland buffer	A, E	USFWS-ES and Refuges, TNC, Landowners	\$275,000 USFWS-ES, All PFWP & Coastal Programs
Expanded crane population monitoring will take place in currently occupied, + newly protected, breeding & wintering habitat.	Determine peak flock size, number of nests, number of fledged chicks, and number of chicks that reach Aransas during each of the next 5 year on aerial surveys.	A, E	CWS, USFWS-Refuges, TNC, Landowners	\$300,000 CWS / USFWS-Refuges funds
Determine energetic balance of whooping cranes at Aransas.	Refuge technician will collect and analyze field data.	Factor A	USFWS-ANWR	125,000 Refuge funds
Enhance foraging opportunities on 5,000 acres/year at ANWR by prescribed burns.	Burn 5,000 acres of uplands annually.	Factor A	USFWS-ANWR	2,000,000 Refuge fire funds
Projected changes to habitat at Aransas from sea level rise (SLR) will be modeled.	Run Sea Level Affecting Marshes Model (SLAMM) for pertinent area of Texas Central coast. Support TAMU-CC research study.	Factor E	USFWS-NWI, WO, RO TAMU-CC	Unknown, estimate \$50,000 USFWS-Coastal Program \$
Migration stopover GIS database will be enlarged & updated	Carry out cooperative tracking project. Update corridor map annually.	Factor A	USFWS-R6	\$100,000. CWS/USFWS salary costs
40 whooping cranes will be banded and radio-tracked.	Capture, health check, radio and track whooping cranes.	Factors A,C,E	Platte River Recovery Program, Platte River Trust	\$1,200,000 for 2 years Platte River Recovery Program
Minimize and mitigate wind farms impacts.	Collaborate with the wind industry to write an HCP.	Factor E	USFWS/R2,R6 Wind industry	\$1,200,000 HCP planning section 6 grant. + FWS salaries
Assess the risk of transfer of IBD into the AWBP from reintroductions.	Sample central flyway cranes for IBD.	Factor C	Platte River Trust, Platte River Rec. Prog.	\$6,000. Platte River Recovery Program

Develop self-sustaining Eastern Migratory Population (EMP)	Rear, train, and release cranes into EMP, manage released cranes	Factors D, E	ICF, Operation Migration, USFWS-R3, R4, USGS	\$1,800,000 ICF, OM, USFWS-R3, R4, USGS, fund raising over 5 yrs.
Production in the Wisconsin flock will be boosted.	Complete research on cause of nest abandonment, do management if feasible	Factor A	Clemson U. and USFWS-R3, ICF, Operation Migration	\$400,000. ICF, OM, USFWS-R3, annual fund raising over 5 yrs.
Impacts from harmful development projects will be minimized and mitigated for.	Complete section 7 consultations. In cases where projects have no Federal nexus, provide recommendations to avoid or minimize impacts from harmful projects.	Factors A,D,E	USFWS-ES USFWS-Refuges	\$100,000 FWS salary for ES and refuge folks
Minimize shooting mortalities related to migratory bird hunting.	Annually carry out State-Federal contingency plan.	Factor B	USFWS-R2,R6	\$100,000 USFWS salaries.
Captive breeding flocks will be maintained.	Support partners (ICF, Patuxent, SSC, and zoos).	Factors A,C,E	USGS, ICF, Zoos, USFWS-WO,R2,R3,R4	\$8,000,000 Zoos, USGS, USFWS
Continue education and public relations programs.	Work with news media, do public presentations, work with zoos.	Factor B	USFWS-WO,RO R2,R3,R4,R6 ICF, Zoos,	\$75,000 Existing salaries.

Role of other agencies: The role of other agencies, partners, organizations, and private citizens, including landowners, is critical to the recovery of the whooping crane. Major groups currently helping with whooping crane recovery programs include the CWS, State game and fish agencies, the Nature Conservancy, Operation Migration, USGS Patuxent Wildlife Research Center, NWHC, ICF, SSC, Calgary and San Antonio Zoo's, various universities, Whooping Crane Conservation Association, and the North American Crane Working Group. See abbreviations for Responsible Parties in the table above.

In addition to those partners with a history of whooping crane recovery involvement, the USFWS believes that we also need to enlist the help of the Federal Emergency Management Agency (FEMA), and the National Flood Insurance Program and the Texas Windstorm Insurance Program because their insurance helps subsidize much of the development that threatens whooping crane wintering habitat. Pre-empting development in low-lying whooping crane habitat is a more economically efficient use of disaster relief funds than paying for disaster relief to the area. The USFWS should invite FEMA to participate in a cooperative effort to purchase conservation easements from willing sellers on low-lying coastal real estate and inquire under what circumstances the programs might decline to insure new construction of structures in identified whooping crane wintering habitat and potential habitat.

Role of other ESA programs:

To date, section 6 Recovery Land Acquisition and HCP planning funds plus section 7 consultations have been used extensively to promote recovery of the whooping cranes.

Role of other USFWS programs: A spirit of cooperation among all USFWS programs is necessary for a successful recovery program. Since 1937 when Aransas NWR was established, the refuge has been in the forefront of recovery efforts for the whooping crane. The USFWS’s Whooping Crane Coordinator is stationed at Aransas NWR and works closely with the nearby Corpus Christi Ecological Services Field Office on actions to benefit the crane, including coordination on section 7 consultations to minimize and mitigate for harmful actions on the wintering ground, and working with private landowners on habitat protection, restoration, and enhancement projects. The Whooping Crane Coordinator, and other staff of Aransas NWR, will take responsibility for expanded population monitoring. Throughout the migration corridor, refuges can manage their properties to ensure adequate availability of secure and suitable stopover habitat for whooping cranes.

Other USFWS Ecological Services programs, including the Coastal Program, the Partners for Fish and Wildlife Program, and the Texas Prairie Wetlands Project, can provide technical and financial assistance to partner organizations to carry out on-the-ground habitat projects. Other USFWS Ecological Services Field Offices throughout the species’ migration range also carry out whooping crane recovery actions via section 7 reviews, assisting with implementation of the Cooperative Whooping Crane Tracking Project, and other recovery actions. The USFWS’s Migratory Birds Program works to ensure migratory bird hunting in the U.S. does not jeopardize the species and Law Enforcement (LE) has taken an active role investigating all incidents involving cranes.

Additional funding analysis:

In the last two decades, annually funding totaling about \$370,000 has been appropriated specifically for whooping crane programs. These include \$165,000 for maintaining a captive flock at the International Crane Foundation, \$150,000 for reintroduction of a non-migratory flock in Florida, and money for aerial surveys at Aransas NWR (\$30,000) plus miscellaneous other needs (\$20,000). Within the last five years, Recovery Land Acquisition grants have been used to purchase conservation easements on some wintering habitat identified as currently occupied and needing protection.

Funding from government and non-government sources can be identified as likely sources to carry out most measures and actions listed below.

Actions Needed to Recover the Whooping Crane for Which Additional Funding is Needed

Measure	Action	Threat or Listing Factor	Responsible Parties	5-Year Cost (\$/Potential Source)
Protect 40,000 additional acres of winter habitat.	Purchase easements and fee title lands for 40,000 acres of occupied winter habitat, potential habitat and upland buffer in the next 5 years.	Factors A,E	USFWS Texas Nature Conservancy	\$36,000,000 (Section 6 RLA, CIAP, NRDA)

Crane habitat will be restored, enhanced and/or maintained on the newly protected 40,000 ac.	Cooperative agreements with NGO partners and Private Lands Agreements with landowners will be used to restore, enhance, and maintain the occupied and potential habitat and upland buffer	A, E	USFWS, TNC, Landowners	\$1,100,000 needed to enhance 40,000 additional acres over 5 yrs.
60 whooping cranes will be banded and radio-tracked.	Capture, health check, radio and track whooping cranes.	Factors A,C,E	Platte River Recovery Program	\$1,800,000/ years 3-5, Platte River Recovery Program
Assess the pathology of infectious bursal disease (IBD) in whooping cranes.	Conduct field trials on whooping cranes using isolated IBD virus	Factor C	USGS-NWHC, Patuxent	\$60,000. Hope for USGS funds.
Production in the Wisconsin flock will be boosted.	If necessary, move reintroduction site where breeding will be successful.	Factor A	USFWS-R3, ICF, Operation Migration	\$175,000. ICF, OM, FWS-R3.
Develop self-sustaining Eastern Migratory Population	Rear, train, release and manage cranes in the EMP,	Factors D, E	ICF, OM, USFWS-R3, R4, USGS	Funding shortfall of \$500,000
Captive breeding flocks will be maintained.	Support partners (ICF, Patuxent, SSC, and zoos).	Factors A,C,E	USGS, ICF, Zoos,USFWS-WO,R2,R3,R4	Funding shortfall of \$600,000
Cranes will be reintroduced into Louisiana on an experimental basis	Complete environmental documents and release 1 or more cohorts.	Factor A	USFWS-R2,R3,R4,LDWF	\$1,500,000, unknown sources
Do genomic mapping of whooping cranes	Carry out genomic mapping.	A,E	Univ. of Georgia, USFWS-R2, USGS	\$52,000. Hope for USGS funds.

Allen M. Starna 08-07-09
Field Supervisor Date

Appendix A – Abbreviations

ANWR - Aransas National Wildlife Refuge
CBBEP- Coastal Bend Bays & Estuaries Program,
APLIC – Avian Power Line Interaction Committee
CIAP – Coastal Impacts Assistance Program
CWS – Canadian Wildlife Service
ES – Ecological Services
HCP – Habitat Conservation Plan
ICF – International Crane Foundation
LDWF – Louisiana Department of Wildlife and Fisheries
NRDA - Natural Resource Damage Assessment
NWHC – USGS National Wildlife Health Center
NWI – National Wetland Inventory
OM – Operation Migration
Patuxent – USGS Patuxent Wildlife Research Center
PFWP – Partners for Fish and Wildlife Program
Platte River Rec. Program - Platte River Recovery Implementation Program
R2 – USFWS/Region 2
RLA – Recovery Land Acquisition
SSC – Audubon Species Survival Center, New Orleans
TAMU CC – Texas A & M University, Corpus Christi
USFWS ES – U.S. Fish & Wildlife Service - Ecological Services
USGS – U.S. Geological Survey
WBNP – Wood Buffalo National Park
WC Trust – Platte River Whooping Crane Maintenance Trust, Inc.
WO – USFWS-Washington Office