

WHOOPING CRANE RECOVERY ACTIVITIES

SEPTEMBER, 2001 - FEBRUARY, 2002

by Tom Stehn

USFWS Whooping Crane Coordinator (361) 286-3559, Ext. 221

HIGHLIGHTS

After an absence of over 100 years, migratory whooping cranes were reintroduced into the eastern United States. In the fall, whooping cranes were led by ultralight aircraft between Wisconsin and Florida and released at Chassahowitzka National Wildlife Refuge (NWR).

A new five-year Canada / U.S. Memorandum of Understanding on the Conservation of the Whooping Crane became effective August 25, 2001. This document was reviewed over the last year and signed by five different agencies.

RECOVERY TEAM

Whooping Crane Captive Management and Recovery Team meetings were held January 11-14, 2002 in Ottawa, Canada. Veterinarian Dr. Sandie Black of the Calgary Zoo sat in for former team member Greg Tarry who retired from the Calgary Zoo. Former team member Dale Hjertaas also sat in with the team representing the Whooping Crane Conservation Association. About 45 people attended the meetings.

The Recovery Team recommended providing approximately 18 chicks in 2002 to both the Whooping Crane Eastern Partnership and the Florida non-migratory re-introduction. This will require approximately 44 fertile eggs be produced by the captive flocks.

ARANSAS/WOOD BUFFALO POPULATION

A national recovery plan has been approved for the wood bison, designated as nationally threatened in Canada. The plan's goal is to have a minimum of 4 viable, healthy, free-ranging wood bison populations in their original range and other herds where the potential exists. The plan would very much like to have a disease-free herd in WBNP, but does not provide a specific way to do this. "The existence of diseased bison in and around WBNP is the greatest single factor affecting the availability of original range and the potential for further recovery of wood bison in northern Alberta, the Northwest Territories, and British Columbia". Biologists are continuing to work towards the resolution of the northern diseased bison issue. Currently, 3,536 wood bison exist in Canada that are free of brucellosis and tuberculosis, including 708 in captivity.

Snowfall in the crane nesting area has been 20-30 % below average this winter. This does not bode well for a good nesting season, but spring precipitation could change this picture.

Mr. Wally Jobman of the USFWS Ecological Services office in Grand Island, Nebraska and Brian Johns, Canadian Wildlife Service in Saskatoon recorded migration sightings during the fall migration, the 53rd migration monitored since the tracking project began in the fall of 1975. This is a cooperative effort by private organizations, state and federal conservation agencies. The following is from the fall, 2001 cooperative whooping crane tracking project report written by Wally Jobman.

"The fall migration was the 53rd migration monitored since tracking began in the fall of 1975. Sightings were reported from Saskatchewan (30), Alberta (1), North Dakota (9), South Dakota (1), Nebraska (6), Kansas (9), Oklahoma (9), and Texas (3). The first dates for confirmed whooping crane sightings were September 8 in Canada and October 13 in the U.S. The last sighting date was November 27."

"Weather during September and October 2001 was unseasonably mild with above-normal temperatures. The first major storm moved through the Great Plains on October 23-24, producing blizzard conditions in eastern North Dakota. The front reached the Texas coast on October 25, aiding the arrival of the first migrant whooping cranes at Aransas. Following the passage of this storm, mild weather returned and the next major storm did not occur until November 25-26. This storm system initiated a major migration of waterfowl and cranes and brought heavy snow to the northern Great Plains. Prior to the arrival of the late-November storm, a family group was still reported in southeastern Saskatchewan on November 19. About 86 percent (i.e. 152 birds) of the arrivals at Aransas occurred between October 25 and November 21."

The year 2002 was a break-even year for the Aransas / Wood Buffalo flock. Based on weekly aerial census flights, the peak whooping crane population in the 2001-2002 winter equaled 161 adults + 15 chicks = 176 total. This was four less than the peak of the previous winter (180). Two single-adult families made it to Aransas, indicating the loss of one adult after nesting. Canadian Whooping Crane Coordinator Brian Johns re-evaluated his August sighting data and concluded 15 chicks had fledged from a record 53 nests. Chick survival in the fall migration was high. However, mortality of adults between spring and fall, 2001 was estimated at 13 cranes. One adult and one chick died at Aransas in the 2001-2002 winter. Thus, the population approaching spring, 2002 is estimated at 174, exactly the same as in the spring of 2001 after six cranes had died during the 2000-01 winter from the peak population of 180.

Public festivals included the second annual banquet and festival at Aransas NWR October 12-13, and the 7th annual Festival of Whooping Cranes and Other Birds held February 21-24 at Port Aransas, Texas.

On October 15, "closed" signs were posted at six entrances into the interior marshes at Aransas NWR. This limits access by fisherman, kayakers, and photographers during the winter period in the area of highest whooping crane density.

The sandhill crane hunting zone along the Texas coast was expanded in 2001-2002. The entire coast is now open except for a zone around the wintering whooping cranes (Corpus

Christi to Port O'Connor). There no longer is a closure all along the coast from Highway 35 eastwards. This issue was carefully coordinated with USFWS and the Flyway Council. This change expands hunting opportunity for sandhills with only minimal impact on the occasional whooping cranes that winter away from Aransas. These "stray" whoopers are covered by the Federal-State Contingency Plan for the Protection of Whooping Cranes. Data showed that these wandering whoopers were just as likely to have been outside the former closed zone as inside. The sandhill season this year in south Texas was December 29 - January 20. Comments were also provided to TPWD about a proposal to open the sandhill season in Zone C earlier sometime between December 17-23.

One half of the Cliburn Ranch that includes a portion of whooping crane critical habitat at Welder Flats was sold to private individuals in the fall. This sale was necessitated by inheritance taxes owed that can have the effect of breaking up large land holdings in South Texas.

A new TPWD order took effect in February providing a 9-day period when all blue crab traps had to be removed from public waters. A state-wide pickup was organized by TPWD to rid the bays of abandoned traps that continue catching fish and crabs for many months. These traps are also a hazard to navigation to sports fishermen. On February 23, over 6,800 traps were picked up along the Texas Coast. Near whooping crane areas, 2,131 traps were picked up from San Antonio bay by 95 volunteers in 38 boats. In Aransas and Corpus Christi bays, 1,360 traps were picked up by 122 volunteers in 52 boats. Specifically in the crane area, over 700 abandoned traps were removed. Although this was a tremendous effort by all involved, the problem has been greatly alleviated but is not completely gone. On an aerial survey conducted after the pickup, 327 abandoned traps were still noted in whooping crane marshes.

RESOURCE ISSUES - FRESHWATER INFLOWS / GLOBAL WARMING

At present, the issue of greatest concern for the cranes while at Aransas is the flow of the freshwater inflows into whooping crane critical habitat. Data shows that the health and survival of the endangered whooping crane flock is directly related with freshwater inflows and blue crab populations. Inflows are needed to produce blue crabs that are the primary food for whooping cranes. Inflows also maintain salinity levels below 23 parts per thousand needed for drinking water by the cranes. The Texas Water Development Board (TWDB) projects an 8 % reduction in blue crab population in 40 years due to reduced inflows as the human population grows and takes more water from the Guadalupe River that flows into critical habitat. Inflows are already insufficient and reduced over historic levels. Taking water from the lower reaches of the Guadalupe River and pumping them back to San Antonio as is proposed in the new state water plan has the potential to adversely impact the Guadalupe-San Antonio Bay Estuary and is a definite threat to the continued survival of the wintering population of the endangered whooping crane and its critical habitat. Whooping Crane Coordinator Tom Stehn worked to spread the word about this issue to USFWS-Ecological Services personnel and other conservation organizations and wrote a white paper on the relationship of inflows / blue

crabs / and whooping cranes. Carlos Mendoza, Supervisor of Ecological Services in Clear Lake, Texas submitted a letter in November to the TWDB about the draft state water plan expressing concern about the impacts of the plan on inflows needed for endangered species and other wildlife. Texas Parks and Wildlife (TPWD) was asked to model inflows of the Guadalupe River using existing data on bay salinities and crab catch data so that the Service can have specific information needed to comment on water development proposals. Support was also provided to the San Marcos River Foundation that has applied for a 1.3 million acre-feet water right that would remain in the river for wildlife and to maintain bay productivity.

Dr. Felipe Chavez spent the week of February 11 at Aransas to plan future research projects on the issue of inflows / blue crabs / and whooping cranes. On loan for a part of the winter from the Platte River Habitat Trust, and hopefully supported by a grant from a private endowment, Dr. Chavez will continue work along the lines of his PhD thesis that studied the foraging of whooping cranes at Aransas and documented the importance of blue crabs to the health of whooping cranes. Felipe will also work on sandhill crane issues in West Texas.

Cedar Bayou, the opening between the barrier islands of Matagorda and San Jose closed shut with sand during summer and remained closed. This pass is very important for organisms including shrimp and crabs that move between the bays and Gulf to complete their life cycle. To maximize blue crab numbers in whooping crane critical habitat, Cedar Bayou must be open so that spawning females can more easily travel out into the Gulf to complete their life cycle. Crab eggs hatch in the Gulf and go through many larval stages as they move back into the bays. Cedar Bayou has a long history of becoming closed periodically starting in 1915. It was most recently dredged in 1985 and 1994. Guadalupe River inflows are important to keeping Cedar Bayou open. The bayou silts up during periods of drought. Human consumption of river water that has reduced historic flows has worsened the problem. A private organization called Friends of Cedar Bayou is trying to provide support to get the bayou dredged. A meeting was held Feb. 28th to organize the group and continue fund-raising efforts. This dredging is a priority of TPWD, but funding is currently not available. A total of \$800,000 is needed. If Friends of Cedar Bayou can raise 200 K, Wallop-Breaux funds from boat excise taxes can be used to provide 75 % of project costs. This funding mechanism has been used the last two times the bayou has been dredged. Texas Senator Armbrister at the February 28th meeting spoke about creative ways of providing funding which could require additional legislation.

Another long-range issue of concern is global warming. A rise of 3 degrees average temperature since 1948 has been documented in Wood Buffalo National Park, but no increase in precipitation was found (Brian Johns, unpublished data). With similar precipitation and warmer temperatures, there will be more transpiration and therefore less surface water. This is not a good situation, especially in drier than normal years for the nesting cranes that do better when water levels are high.

In a recent study entitled "Confronting Climate change in the Gulf Coast Region: Prospects for Sustaining our Ecological Heritage" by Ecological Society of America and

the Union of Concerned Scientists, many of the predictions are not good for the whooping crane population. There is a strong consensus among leading climate scientists that the burning of fossil fuels and other human activities are changing the Earth's climate. For the Gulf Coast region, climate models predict warmer temperatures and an increase in the rate of sea-level rise over the next 100 years. Global climate change will interact with, magnify and exacerbate already existing stresses on Gulf Coast ecosystems caused by extensive development and rapid population growth. These stresses include dam building, river diversions, urban and shoreline development, and other human activities.

The study predicts:

- Conflicts over fresh water for States bordering the Gulf of Mexico.
- Climate change will magnify the harmful side effects of human activity on the region's environment.
- Summer high temperature rise of 3 - 7 degrees and winter low temperatures to warm by as much as 5 - 10 degrees during the 21st century.
- With warmer temperatures, many invasive tropical species are likely to extend their ranges northward.
- Reduced rainfall in coastal areas.
- Warming will lead to more extreme rainfall events and longer dry periods, accelerating sea level rise, coastal flooding, and northward extension of range of many plants and animals.
- Problems for freshwater supplies for agriculture, industry, and urban areas are likely to get worse.
- Undermine efforts to restore wetlands and beaches.
- Accelerated sea level rise brought about by melting of polar ice caps and local land subsidence could lead to higher ocean levels by the end of the 21st century. In Texas, a mid-range sea-level rise would result in ocean levels 17 inches higher by 2100. Sea-level rise will have a disproportionate effect along the Gulf Coast because of its flat topography, regional land subsidence, extensive shoreline developments, and vulnerability to major storms. Sea level rise will cause increased coastal erosion, flooding during storms, and undermine efforts to restore coastal wetlands.
- Salt-water intrusion in coastal ground water sources, a problem already occurring during droughts, is likely to increase as sea level rises. Rationing of groundwater withdrawal may become more common.

- Higher water temperatures and increased salinity in estuarine waters could increase viral and bacterial contamination of shellfish along the Gulf Coast, negatively impacting the recreational and commercial fishing industries.

- The solution is reducing omissions of carbon dioxide and other greenhouse gas emissions by reducing dependence on fossil fuels would reduce global-warming gas emissions. Need to develop clean energy sources.

WHOOPING CRANE EASTERN PARTNERSHIP (WCEP)

(web site: www.bringbackthecranes.org)

After an absence of over 100 years, migratory whooping cranes were reintroduced into the eastern flyway. In the fall, whooping cranes were led by ultralight aircraft between Wisconsin and Florida and released at Chassahowitzka NWR.

Field work started with the production of 11 chicks in captivity at the USGS Patuxent Wildlife Research Center. One was lost to a bacterial infection. Ten were shipped on July 10th to Necedah NWR in central Wisconsin on a Windway Capital aircraft. One died from capture myopathy during handling after fledging. One bird was removed from the ultralight program due to a wing abnormality and shipped to the Audubon Zoo in New Orleans, leaving eight at Necedah in the fall.

A concern at Necedah was the high level of coliform bacteria found in the pens with standing water. Although associated health problems were not detected, the cranes were constantly probing in the water and drinking. Flow-through water systems may need to be improved to improve water quality. This issue could have huge implications for cranes in captivity. Although it is important for reintroduced cranes to have prior experience roosting in water, the cranes must remain healthy. Similarly, ponds used in captive pens to stimulate breeding must not add to disease risks.

Much effort went in to planning, publicity, and fund raising for WCEP. On September 26th, a donor/media event was held at Necedah NWR. A similar public event September 29th was attended by 585 people. Both days, the weather cooperated and people got to see cranes in flight behind the ultralight. On September 27-28, WCEP meetings were held at the International Crane Foundation (ICF) in Baraboo, Wisconsin. Much planning took place, mostly on specific needs for the fall migration.

One whooping crane reported at the Sandhill WMA in central Wisconsin on November 7th could not be confirmed. This was a most intriguing sighting, but we could not totally rule out the presence of a leucistic sandhill.

Eight whooping cranes left Necedah NWR on October 17th behind the ultralight. The team proceeded south through Illinois, Indiana, Kentucky, Tennessee, Georgia and Florida. During the migration, a severe storm with winds in excess of 50 mph blew down the portable pen during the night of October 24th. The birds escaped, and one was killed

hitting a power line. The remaining 7 cranes were recovered that same night. One crane did not follow the plane well and was trucked daily in a crate, rejoining its cohort every night. The migration team faced a rash of bad weather and headwinds, necessitating 22 days on the ground with no flight possible. Warm weather in Florida really slowed things down with days when only 20 miles were covered. The migration included 26 stops, covered 1,227 miles, and took 50 days. The longest flight day covered 95 miles, and the longest flight lasted 2.15 hours. The shortest migration leg only lasted 38 minutes. Total flight time of the birds between Wisconsin and Florida was 35.8 hours.

One of the highlights for the migration team was a visit by former President Jimmy Carter and Mrs. Carter on November 17. The migration effort received tremendous media attention, including coverage on CNN on November 23rd. The Operation Migration website received 106,600 unique hits to check on the progress of the migration. The Outreach Team accommodated over 120 individual media representatives, developed a CD-ROM migration press kit with photos and sound clips, and distributed landowner appreciation materials. A film crew from British Broadcasting Corporation filmed portions of the WCEP project for a crane documentary scheduled to be aired in February, 2003. Jeff Huxmann of Sunshine Productions was contracted to make a video for WCEP to meet public relations and fund raising needs.

The cranes and field team arrived in Crystal River, Florida on December 3rd to a very successful arrival ceremony and media event. Two days later, the cranes were flown to their winter pen in the salt marsh at Chassahowitzka NWR. Health checks were done December 7th, and satellite transmitters were placed on three of the birds. A rigid costume rearing protocol was strictly followed throughout the training, migration, and soft release with no notable violations so that the cranes would show wild behavior. It is interesting to note that the arrival of the cranes at Chassahowitzka NWR occurred exactly five years and one week after Doctors John Cannon and Felipe Chavez first toured the refuge by airboat in their search for whooping crane reintroduction sites in the southern U.S.

A tremendous amount of work was done at Chassahowitzka NWR in preparation for the arrival of the cranes. The entire staffs at Chassahowitzka and Necedah NWRs are to be congratulated for all their magnificent support and hard work. Pen and observation blind construction started the 2nd week in October. Video equipment in the blind was installed by ICF personnel. The first week in October, Chassahowitzka burned 2,372 acres of needlerush saltmarsh to enhance feeding opportunities for the whoopers. The re-growth of the burn was such that it was once again unsuitably tall for cranes to use by the end of February.

The WCEP Team learned that Chassahowitzka is not ideal for whooping cranes. Problems included large tidal fluctuations that made roosting impossible for the cranes in the release pen. Some nights the water was too deep, and on others no water at all was present. Changes including a larger pen and modifications to the substrate to make roosting habitat more suitable will need to be made before next winter. Salinities increased later in the winter and marsh waters became too salty for the whoopers to drink. Fresh water and pelleted food were provided in the pen throughout the winter. Early on,

crabs were trapped and fed to the whooping cranes. They did better eating small crabs, and foraging on wild crabs was occasionally observed throughout the winter. The cranes in general showed little movement and remained attached to the pen and costumed handler throughout the winter, similar to behavior of the ultralight sandhills last year.

Two cranes were taken by bobcats soon after their arrival in Florida. The first bird killed December 17th outside the pen on burned needlerush marsh was the crane that had been trucked daily throughout the migration. The second loss occurred January 9th when the group of cranes apparently roosted in a narrow bayou too close to a vegetated bank. Two bobcats were trapped and removed from the area, with no other sign of bobcats detected until March. Next year, bobcat trapping will need to be initiated just prior to the arrival of the cranes. After these losses, great care was taken to try to ensure the cranes roosted nightly in the release pen.

A difficult blow for all involved on the WCEP team was the serious stroke that volunteer pilot Deke Clark suffered in January. Deke remains hospitalized and immobile, but is undergoing rehabilitation. Our prayers are with Deke, and his kind and generous spirit and twinkle in his eye remain with the project. A plaque was presented to Deke in March for all his contributions to the project.

The Finance and Budget Team chaired by Peter Murray of ICF met all obligations with a direct costs budget of \$806,000 of which \$507,400 came from private organizations. Two grants from the National Fish and Wildlife Foundation contributed 175 K to the project. In-kind contributions included airplane transport for the chicks from Windway Capital Corporation, the loan of three vehicles for four months by DaimlerChrysler Corporation, optical equipment donated by Svarvoski Corporation, and much donated labor from Necedah and Chassahowitzka NWRs volunteers and staff, Wisconsin Conservation Corps, and many others.

The following information on the results from the sandhill crane experiment conducted in 2000 comes from the January 2002 Whooping Crane Eastern Partnership Team Report.

Projects done in 2000 with sandhills to develop reintroduction techniques had great results. Of the 14 sandhills flown behind the ultralight in Wisconsin, 12 survived to winter in Florida. Eleven were led to St. Martin's Marsh Aquatic Preserve located next to Chassahowitzka NWR. One male disassociated from the flock on the first day of the migration, joined wild sandhill cranes, and wintered in northeastern Florida. On February 25, 2001 ten of the ultralight sandhills departed on spring migration. The one crane remaining at St. Martins departed on March 17. This crane was picked up on June 21 in western North Carolina and removed from the study with signs of chronic illness and no fear of humans.

Nine of the 10 ultralight cranes returned as a group to central Wisconsin, including time spent on the rearing area at Necedah NWR where they were first sighted April 27. The one male that had disassociated from the flock the first day of the ultralight migration also returned to central Wisconsin. Eight ultralight sandhills started the fall migration

from Necedah on November 19 and were tracked that day to Jasper-Pulaski State Fish and Wildlife Area in northwestern Indiana. The group then disbanded among the 20,000 wild migrating cranes present. Some of the birds were later located at known sandhill stopover sites in Tennessee, and some wintered in Florida. Some spent a considerable portion of the winter at Jasper-Pulaski due to the unusually mild winter conditions, moving on to Hiwassee Refuge in Tennessee in late January.

Eight sandhills were costume-reared and released one by one into flocks of wild sandhills in central Wisconsin in the fall of 2000. All migrated with wild flocks of sandhills in mid-November. Six of the eight were confirmed wintering in Tennessee, Georgia, and Florida. Two cranes with malfunctional transmitters were not located during the winter. All eight returned to central Wisconsin in spring, 2001 as integral members of the wild population. The six birds still being monitored in late fall, 2001 migrated from Wisconsin in mid-November, with three later found at Jasper-Pulaski and one at Hiwassee State Wildlife Refuge in eastern Tennessee.

The high survival, high return rates, and appropriate human avoidance behavior demonstrated by both the ultralight and one by one releases indicated that both techniques may be useful in reintroducing whooping cranes to Central Wisconsin.

A draft whooping crane contingency plan was submitted to the Central Flyway in October for review. This plan outlines actions to be taken if an eastern whooping crane strays into the Central Flyway. The Central Flyway is concerned about this situation since all cranes in the Central Flyway are considered endangered even if the crane came from the eastern population which is designated as experimental nonessential under Section 10 (j) of the Endangered Species Act. Work will continue on this contingency plan until agreed upon by involved parties.

WCEP meetings with over 30 folks attending were held in Crystal River, Florida on February 4-8 to plan for all aspects of the reintroduction in 2002. There is not much time until field work begins with the first eggs laid in mid-March at Patuxent.

FLORIDA RESIDENT FLOCK

The number of whooping cranes in Florida reached 103 as more birds were released in the past six months.

<u>Date</u>	<u># shipped to FL</u>	<u>Place of Origin</u>
September 26	8	Patuxent, HY 2000 birds held back last winter
January 16	5	ICF (birds from Calgary, ICF, and San Antonio)
February 7	7	Patuxent
February 26	7	Patuxent

The cohort sent to Florida in September consisted of cranes hatched in 2000 that were 16 months old. This was only the second time that whooping cranes were released as

subadults. Two of these subadults were taken by an alligator. The other six are doing well. They were held back from release last winter due to the continuing drought and the unprecedented disappearance of so many birds released in the 1999-2000 winter.

Nine birds are still unaccounted for from the 1999-2000 releases. However, two birds that had been missing showed back up in the fall, 2001 providing hope that some of the nine are still alive. Survival of birds released in the 2000-2001 winter was 18 of 21.

Rains in the fall greatly helped restore water levels in central Florida. But it turned dry again over the winter. Some rainfall early in the nesting season may help a poor nesting year and keep it from being disastrous. At the end of February 2002, two pairs were sitting on eggs. A total of 13 pairs are present in Florida.

In late November, one whooping crane entered thicket habitat and acted strangely. The crane was captured, but no health problems were uncovered, so the bird was released back into the wild and after a period of time returned to its normal habits.

On 8 September, the Florida Wildlife Federation awarded the members of the Florida whooper team "Wildlife Conservationists of the Year". This is a very noteworthy accomplishment from a team that has done an excellent job with all aspects of the whooping crane reintroduction program. Congratulations to all.

ROCKY MOUNTAINS

There is apparently only one whooping crane left in the Rocky Mountains. This is the cross-fostered bird from 1983 that summers at Red Rocks Lake NWR in Montana and winters near Belen in the Rio Grande Valley, New Mexico. The ultralight whooping crane from 1997 spent the summer in Idaho and apparently started the fall migration sometime around September 6th. It was not seen in the San Luis Valley in Colorado during the fall migration and did not winter at the Bosque del Apache NWR in New Mexico. It presumably died during the fall migration.

ADMINISTRATION

In October, the International Crane Foundation completed draft language for a Crane Conservation Act that would provide congressional funding to aid crane species around the world. The draft is similar to acts for rhinos, tigers, great apes, and neotropical migratory birds. Tom Stehn helped with the draft and coordinated with the USFWS International Affairs office in Washington. This currently is just an idea, but it would be oh so nice if it ever became a reality.

Whooping crane coordinators Brian Johns and Tom Stehn submitted a draft joint whooping crane recovery plan to their respective agencies in October. A re-write will be necessary, but hopefully can be completed by the end of 2002.

Beginning last year, USFWS funding that helps support the Florida nonmigratory flock and captive propagation at ICF is being appropriated from the Washington office rather than from Region 2 Endangered Species funds. In the current fiscal year, monies will be disbursed from Washington through Regions 3 and 4. Region 2 remains as the lead region for whooping crane recovery and funds the coordinator's position.

The USFWS e:mail system was shut down by court order during a trial over Bureau of Indian Affairs trust fund accounts. My e:mail address Tom_Stehn@fws.gov can only be used by other USFWS personnel. Non-government people can reach me at tstehn@interconnect.net which I check in the evenings. This shut-down is expected to last several more months.

HEALTH ISSUES

West Nile Virus (WNV), an exotic disease introduced in the New York City area in 1999, has now spread into all states east of the Mississippi River. It is likely to be found in Texas in 2002. Sampling was done of wild bird populations and mosquitos at Aransas in the fall looking for the disease.

The impact of this disease on cranes is unknown, but may have caused death or illness of two sandhill cranes in captivity. USGS at the Patuxent Wildlife Research Center and the National Wildlife Health Center has started research on the effects of WNV on sandhills including the effectiveness of a vaccine. Results obtained by April should help us decide if captive whooping cranes should be vaccinated. Preliminary results indicate sandhills show resistance to the disease. The disease seems to effect crows the most.

CAPTIVE FLOCKS

CALGARY

Three juveniles produced in Calgary were shipped to ICF in August for socialization into a cohort destined for the nonmigratory flock in Florida. They were released into the wild on February 21 with one ICF bird and one San Antonio bird, along with another cohort of seven Patuxent birds. The captive adult female "Buffy" was shipped from Calgary to the San Antonio Zoo on November 29 where she will be paired. This move was part of the genetic re-shuffling that was recommended by the Captive Management Team in January, 2001.

INTERNATIONAL CRANE FOUNDATION (ICF)

(web site: www.savingcranes.org)

The International Crane Foundation was heavily involved on the WCEP team at the Necedah NWR. Support included veterinary care, rearing, participation on the migration team, and monitoring of the cranes after release at Chassahowitzka NWR in Florida.

Captive whooping crane juveniles were shipped to ICF in late summer to form a cohort for release in the nonmigratory flock in Florida. The cohort of five cranes came from ICF (1), Calgary (3), and San Antonio (1). One of the Calgary birds suffered a cervical injury while at ICF, but recovered sufficiently to be released in Florida. Because of the small cohort size, their shipment to Florida was delayed until mid-January so that they could be released at the same time with a cohort from Patuxent.

A review of the husbandry program at ICF aimed to improve breeding success was held September 24-26. Participants from other institutions included Dr. George Gee and Jane Nicolich from Patuxent, and Tom Stehn. Subjects covered included the role of ponds in pens, bird movements, diet, disturbance, and photoperiod. Many recommendations were made which mostly have already been implemented. This was an excellent example of the close cooperation amongst captive facilities that hold whooping cranes.

USGS PATUXENT WILDLIFE RESEARCH CENTER

(web site: www.pwrc.usgs.gov/cranes.htm)

Patuxent remains a key player in all aspects of whooping crane recovery. They conduct multiple research projects which are vital to recovery. In 2001, Patuxent raised birds for both the ultralight and Florida reintroductions, were part of the ultralight field team, and participated in both the Recovery Team, Captive Management and WCEP meetings. They also served on the captive site selection task force. Jane Nicolich, Patuxent's crane flock manager, was selected to lead the whooping crane captive management team this year.

Patuxent shipped 11 whooping cranes to Wisconsin in July, a cohort of eight to Florida in September, and two cohorts of seven to Florida February 7 and February 26. One young crane was retained at Patuxent to bolster captive flock genetics.

Dr. Judd Howell is the new Director at Patuxent. Dr. Suzette Kimball, Chief Biologist in the Regional Office has been very supportive of the whooping crane program and expedited getting the MOU signed. Dr. Jeff Key of USGS has been assigned from the Eastern Regional office to strengthen the research effort. He has been meeting with the crane program team and has been moving the research program forwards. Jeff visited Tom Stehn at Aransas December 4-5 to coordinate the Patuxent research program with Recovery Team needs.

The Recovery Team in January discussed recovery research needs. The top research projects in priority order are:

- Investigate fresh water ecology at Aransas NWR, including inflows of fresh water, blue crab ecology, and sociological studies.
- Investigate issues concerning the age at first breeding in the captive population.

- Conduct a PHVA using adaptive management techniques with the Florida non-migratory whooping crane population.
- Investigate leg and wing abnormalities in captive whooping cranes.
- Investigate further the technique of one-by-one releases or other techniques.
- Investigate avian tuberculosis.
- Investigate nutrition in whooping cranes.

In addition, the following research topics should continue to be investigated (not in priority order):

- Investigate the crepuscular behavior of whooping cranes in Florida and captivity
- Continue to do research on cryopreservation
- Continue to investigate genetic diversity
- Continue to investigate West Nile Virus

Patuxent has purchased equipment and are in the process of building an anonymous fragment length polymorphism DNA lab to increase the genetics effort. They hope to begin processing samples late in 2002.

Dr. John French supervises crane core operations at Patuxent and converted four of seven biological technician term positions to permanent biological technician positions. Other term positions will continue as long as there are research studies to support them. Until recently, the crane program had one permanent technician position and seven term appointments.

Dr. Dave Ellis assumed editorial responsibilities for the Eighth North American Crane Workshop for the North American Working Group and published the proceedings in December. Dave did a tremendous job on this. It is very important that researchers document the projects they have done so that recovery can keep moving forward.

AUDUBON CENTER for RESEARCH on ENDANGERED SPECIES (ACRES)

ACRES currently has five whooping cranes. One pair (McFuzz and Susan) exhibits a strong pair bond and hopefully will start producing soon. The male "Fred" remains unpaired after showing aggression on numerous occasions to a potential mate. One female was transferred December 20 from San Antonio. Three additional whooping cranes from Patuxent and one from Lowry Park are scheduled for transfer in 2002 to ACRES. The shipment from Patuxent was delayed because one bird was sick, and

another was needed for use as an imprint model for the ultralight chicks hatched in the spring of 2002.

LOWRY PARK

Lowry Park is an important cooperator for whooping crane recovery. This zoo in Tampa, Florida can hold injured birds for rehabilitation, and also is one of the five places in the world where a whooping crane is on public display. The crane with valuable genetics that Lowry Park has been holding is scheduled to be shipped in the near future to ACRES for pairing. One crane from ICF was shipped to Lowry Park on January 16, 2002 to keep on permanent display.

NEW ORLEANS

In an historic return of whooping cranes to the Audubon Zoo in New Orleans, one of the ultralight cranes with a wing problem was pulled from the reintroduction program in Wisconsin and shipped to New Orleans on November 2. This crane seemed to make the transition to seeing un-costumed crane handlers quite easily. A male crane hatched in 2000 in San Antonio was shipped to the Zoo in early January. This future pair is currently being held in adjacent pens and seem to be adjusting well to their new surroundings. Tom Stehn is working with the Zoo on a letter of understanding about whooping cranes.

SAN ANTONIO

The San Antonio Zoo is an important partner in the captive management of whooping cranes. It keeps one breeding pair of cranes on display and one pair off display. San Antonio received shipment of the female crane "Buffy" from Calgary in November. Plans call for three breeding pairs to be held in San Antonio when one crane currently at Patuxent gets moved to Texas.

In 2002, San Antonio raised one whooping crane juvenile that was appropriately named "Lonestar". In the fall, Lonestar was shipped to ICF where it was socialized into a cohort of five. Upon release in Florida, Lonestar split off from its cohort and was taken the first night apparently by an alligator. The two juveniles raised at San Antonio in 2001 were shipped in January to ACRES and the New Orleans Zoo. They had been pulled from the reintroduction program in Florida because of the deepening drought and fears that birds released in drought conditions would be more vulnerable to predation.

WHOOPING CRANE NUMBERS / March 1, 2002

Wild Populations

Location	Adults	Young	Total
Aransas/Wood Buffalo NP	160	14	*174
Rocky Mountains	1	0	1
Florida non-migratory	85	18	103
Wisconsin/Florida migratory	0	5	5
Subtotal in the Wild	246	37	283

* The peak size of the AWBP for the 2001-2002 winter was 161+15=176. One chick and one adult subsequently died on the wintering grounds.

Captive Populations

Location	Adults	Young	Total	Breeding Pairs
Patuxent WRC, Maryland	53	1	54	10
International Crane Foundation, Wis.	27	0	27	8
Devonian Wildlife Conservation Center, Calgary	18	0	18	3
Calgary Zoo, Alta.	1	0	1	0
ACRES, New Orleans	5	0	5	0
New Orleans Zoo	1	1	2	0
San Antonio Zoo, Texas	5	0	5	2
Lowery Park Zoo, Tampa, Fla.	2	0	2	0
Subtotal in Captivity	112	2	114	23

TOTALS (Wild + Captive) 283 + 114 = 397