



THE UNISON CALL

A Newsletter of the North American
Crane Working Group

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NEWS & ANNOUNCEMENTS

Workshop Proceedings Are Progressing

The Proceedings of the 8th North American Crane Workshop is "slightly behind schedule." With an employment change, Gary Lingle passed the torch as chief editor to David Ellis. Dr. Ellis reports that nearly all manuscripts are now in good shape and many are being finalized. Release of the Proceedings is anticipated this fall or winter. Several papers turned into abstracts, so several new manuscripts were solicited. As a result, the volume will still be book length. If you have questions about the status of your manuscript, call David or Cathy Ellis at 520-896-3226 or better yet, e-mail at dckellis@theriver.com. A decision was made by the President and Board to upgrade the proceedings by adding lots of illustrations. If you have excellent photos for your article or ones to be used somewhere in the text, please forward them to David Ellis.

New Book Available

Wings Across the Desert by David H. Ellis provides a true life account of the recent motorized crane migrations in Arizona. The 184 page book will appear this spring from Hancock House (<http://www.hancockwildlife.org/test/wings.htm>), \$17.95. Although the book provides a brief overview of whooping crane conservation, its real focus is on the excitement and mishaps that spontaneously arise daily as the cranes ran the gauntlet of powerlines and eagles from the mountains of Arizona to the Mexican border. If you have ever wondered what it is really like producing a scientific study, this book opens the door. It details the irony and humor of each moment. All royalties from sale of the book go into Patuxent's research/propagation program.

IN BOLD EXPERIMENT, ULTRALIGHT TO LEAD WHOOPING CRANES FROM WISCONSIN TO FLORIDA

Whooping cranes will migrate across the skies of eastern North America this fall for the first time in more than a century as part of a bold experiment conducted by a partnership of Federal and state wildlife agencies, conservation groups and other private organizations led by the U.S. Fish and Wildlife Service.

Biologists will train a flock of about 10 young whooping cranes, which are listed as endangered under the Endangered Species Act, to follow an ultralight aircraft across seven states from Necedah National Wildlife Refuge (NWR) in Wisconsin to Chassahowitzka NWR in Florida.

If all goes as planned, the birds will learn the migration route during the trip and return from Florida to Wisconsin on their own next spring, thereby establishing a second migratory whooping crane flock in North America.

The experiment will be conducted by the Whooping Crane Eastern Partnership, a consortium that includes the Service, the U.S. Geological Survey, state agencies, conservation organizations and private citizens. Private donors are contributing more than half of the \$1.3 million needed to complete the project. More than 40 private landowners have offered their property to be used as overnight sites for the migrating birds.

"This bold experiment is a model of how to recover an endangered species," said Interior Secretary Gale Norton. "It combines innovative science, partnerships with local landowners and States, public and private funding, and reduced Federal regulation. It could provide a blueprint for future recovery efforts for other threatened and endangered species."

Biologists will commence the experiment in early July when approximately 10 whooping crane chicks raised at the U.S. Geological Survey's Patuxent Wildlife Research Center will be transferred to Necedah NWR. The birds will undergo three months of specialized training with ultralights, using the same techniques used successfully last year with a flock of sandhill cranes that were taught to fly the same migration route.

The experimental flock of whooping cranes should depart in mid-October and fly over Illinois, Indiana, Kentucky, Tennessee and Georgia on their way to Chassahowitzka NWR. Approximately 25 private, State and Federal properties will be used as stopover points for the birds, aircraft and personnel. Daily updates, photographs and other information on the project will be available at www.bringbackthecranes.org.

This is an abbreviated version of a FWS news release, June 20, 2001.

Contact: Joan Guilfoyle: 612/713-5311 Chuck Underwood 904/232-2580 x109

REGIONAL REPORTS

MISSISSIPPI

The population at the winter census was estimated at 103 cranes, of which 19 (18 %) were unbanded and 84 (82 %) were marked. There were 44 males, 51 females, and eight of unknown sex. Almost 74% were three years or older (adult).

A new release pen and observation blind at the Duck Pond site on the east Ocean Springs Unit were built. Eight HY00 cranes captive-reared at Audubon ACRES were examined, banded, radio-tagged, brailed, and released at the new Duck Pond site. It is hoped releases here over next 4-5 years will accelerate crane use in this area and Eglin. After release, they stayed in the area for three weeks, then dispersed in different directions, some several miles away, before six returned. One was hit by a vehicle and died during surgery. The radio signal from another has disappeared from the area.

There were 20 known crane nests. There were at least two more new territories, one in the newly created Duck Pond, another in Little Bluff Creek. Two Audubon-reared birds nested, one for the first time. In an interesting subplot, the Little German chick was found suddenly to be associating with the North Valentine family. Six chicks remained alive at June 11, a record number and attributed greatly to contracted predator control.

Nine chicks were radio-tagged with assistance from Dr. Glenn Olsen of Patuxent as part of a chick mortality study. Causes of death of radio-tagged chicks include hawk predation, yolk sac infection, and one unknown (radio failure). Another chick not part of the study may have died from hawk predation as well.

#957, a HY99 captive-reared female, died of lead poisoning on the Ocean Springs Unit. This is only the second reported case in this subspecies. The material nor source has not been identified, but could be from a county dump near Seaman Road wastewater area. This was the first mortality from last year's releases (two weeks from end of year one post-release). A greater sandhill crane was found very ill, euthanized, and sent to Madison where cause of death was attributed to lead poisoning. It is believed the greater and the Mississippi both consumed the lead at the same area, probably one of several dove shoot sites north of Ocean Springs Unit. A breeding male died from a vehicle collision in Fontainebleau area.

Biotech Tracy Grazia began a 5-month leave of absence in April to study white-naped cranes in Mongolia. Leading the group was German biologist Ute Bradter, an intern at the refuge in 1997. Temporary biotech Elena Goldberg began a 5-month stint assisting the biological program during Tracy Grazia's absence. Denise Ecker began a 3-month

summer internship assisting the chick mortality study and release monitoring. Biologist Hereford was invited to serve and accepted another triennium as a member of the IUCN/SSC Re-introduction Specialist Group.

At least eight cranes were captured and marked/radio-tagged, including one that hadn't been handled since release ten years earlier.

Scott Hereford, Gautier, MS (scott_hereford@fws.gov)

FLORIDA

In June 2001 the population of Florida whooping cranes was 85. Ten birds from 2 release seasons ago are still unaccounted for. The female that summered in Michigan last year did not return to Michigan this year. However, we did document another extra-Florida dispersal. An unpaired 4-year-old male moved from central Florida to Virginia in early May. Summer rains have begun in central Florida but evapotranspiration still exceeds rainfall and water levels in most marshes and lakes continue to decline. Despite the drought, 2 pair of whooping cranes nested. One nest was abandoned about half way through incubation and no eggs could be found at the platform. The other nest was tended beyond a normal hatch period and at day 35 we collected the eggs and determined that they were likely not viable. Survival of last winter's release birds has been great; 19 of 21 birds still survive. There are 14 pairs in the population now. We've seen no indication that the drought has affected long-term pair bonds. The cranes patiently wait for water to return to Central Florida marshes.

Marty Folk, Kissimmee, Florida

CANADA

Habitat conditions are excellent this year and the cranes have responded with a record 52 nests (previous record 51 in 2000). Five pairs that bred during the 2000 nesting season are not nesting this year. Hatching success surveys were conducted between June 5 and 11. As of June 8, 27 young had hatched and another 11 nests were still being incubated.

Brian Johns, Saskatoon, Saskatchewan

ARANSAS

The peak Aransas - Wood Buffalo population of whooping cranes during the 2000-2001 winter equaled 180 cranes. This was a decline from the record total of 188 last winter. Mortality between spring and fall, 2000 totaled 16 cranes (8.6% of the population). The flock consisted of 117 adults, 54 subadults, and 9 juveniles. Three subadults possibly wintered in West Texas and may never have made it to Aransas. Thirty-two cranes were color-marked representing 17.8% of the population.

This was a bad winter for the whooping cranes. An estimated 4 adults and 2 juveniles died during the winter, leaving 174 cranes present in spring, 2001. No specific causes of mortality for the six whooping cranes are known. However, winter food resources were generally in short supply and the cranes are believed to have used up energy reserves through parts of the winter. Blue crabs were never abundant and made up only a small part of the whooping crane diet. The lack of crabs resulted in whooping cranes spending lots of time off their traditional salt marsh territories foraging in uplands or open bays for alternate food sources. Few acorns were available on upland prescribed burns due to a poor mast crop. Refuge burns received heavy use initially, but crane visits tapered off. Wolfberries were available for the cranes in November and December. Foraging on clams and/or invertebrates in open bay habitat was observed January -March. Although the whooping cranes didn't go hungry, these alternate foods are not as nutritious as blue crab (Nelson 1995).

Since research on crabs and whooping cranes started at Aransas in the 1992-93 winter (Chavez-Ramirez 1996), data shows that when blue crab populations are low, the cranes do not do well. The highest whooping crane mortality has occurred in the two winters when the least number of crabs were present. Seven whooping cranes died in 1993-94 and six died in 2000-01. In all other winters since 1992-93, with more blue crabs available, whooping crane mortality was either 0 or 1. Thus, there is a strong correlation between low blue crab populations and high whooping crane mortality. The health and survival of the wintering population is directly related to blue crab abundance. This only makes sense since blue crabs are known to make up as much as 90% of the whooping crane's diet.

In talking with blue crab biologists, there is a strong correlation between fresh water inflows from the rivers into the Texas bays and blue crab populations. Blue crab reproduction is low whenever fresh water inflows are low, and Texas experienced drought in 2000. Without sufficient inflows, blue crab populations decline. As water development pressures mount, fresh water inflows into the Texas bay system are being reduced, and blue crab populations are being adversely affected. Human consumption of river water in Texas is a growing resource issue as the state's population continues to expand. This is a very worrisome trend since Texas water law reserves water for people but has few provisions for wildlife.

National media attention was received this spring when the Rio Grande River dried up and flows no longer reached the Gulf. This is not the only river in trouble in Texas. The projected future decreases in fresh water inflows from the San Antonio and Guadalupe Rivers are a definite threat to the continued survival of the whooping crane. The death of six whooping cranes during the 2000-01 winter emphasized how serious a situation this is. The U.S. Fish and Wildlife Service and many others need to weigh in strongly on this issue to save the species.

Tom Stehn, Whooping Crane Coordinator

CAPTIVE FLOCKS

For the captive flocks of endangered North American cranes this has been a good year but not an exceptional year. There were a large number of eggs laid by the captive whooping cranes. The production of the Mississippi sandhill cranes had to be curtailed because of the problems last winter with finding a positive culture for avian tuberculosis in one crane scheduled for release. Here is a summary of crane production by facility:

At the Calgary Zoo's breeding facility in Alberta, six pairs had eggs, including four new pairs. A total of 28 eggs were laid. Five of these were fertile and hatched. All five hatched, but unfortunately, one chick broke its leg. Surgery was performed to repair the fracture, but the chick died in post operative recovery. Of the current four whooping cranes, three are being costume reared and one is being parent reared. In addition, two Florida sandhill crane chicks are being costume reared, and two more will be hatched and raised by whooping crane pairs to give them chick rearing experience.

At the San Antonio Zoo in Texas one whooping crane chick is being costume reared. They had eight eggs laid from two pairs, but only one egg was fertile. In addition to the two pairs, they have two juvenile whooping cranes that hatched last year.

At the International Crane Foundation in Baraboo, Wisconsin, five whooping crane females produced 21 eggs, of which six were fertile. Four eggs hatched with one chick being parent reared and three costume reared. One chick had to be euthanized at 18 days due to developmental problems.

Patuxent Wildlife Research Center, Laurel, Maryland, had ten pairs laying a total of 52 eggs. Of these, 31 were fertile and 29 hatched. Of the ten females that laid eggs, two laid for the first time. From the 29 chicks that hatched, 11 were assigned to the Whooping Crane Eastern Partnership project, 17 to the Florida non-migratory release effort and 1 to captivity for genetic reasons. Patuxent has had three chicks die, one from peritonitis, one from drowning, and one currently listed as unknown but awaiting test results. This leaves 10 for the Whooping Crane Eastern Partnership, 15 for the Florida release and 1 for captivity.

For the Mississippi sandhill cranes, the majority of the production has been at White Oak Plantation in Yulee, Florida. Of the first clutches laid, there were ten eggs, seven of which were fertile. All these eggs were sent to ACRES/Audubon Zoo in New Orleans, Louisiana where all seven hatched. Five are being costume reared and two are being parent reared. On the second clutches, again ten eggs were laid. Four were infertile, two died in the shell before hatching and four hatched. Of these four, two died within two days of hatching, and the other two are doing well.

At the ACRES/Audubon Zoo, in addition to the seven chicks from White Oak, they had two naturally fertile pairs that laid three eggs total. All three eggs hatched, with two being costume reared and one parent reared. Audubon was holding 15 Mississippi sandhill cranes from hatch year 2000 due to the positive test for avian tuberculosis that occurred last winter. Subsequent testing has all been negative, so this spring eight of the cranes were release on the Refuge in Ocean Springs, Mississippi, while seven more cranes are

awaiting release in the Fall of 2001. But because of these additional cranes, the decision was made not to use artificial insemination on the pairs of Mississippi sandhill cranes at Audubon to increase the number of chicks being raised this year. Audubon also has four whooping cranes and the one pair there did show signs of nest building this spring, but laid no eggs.

I wish to thank Mary Ann Wellington at the International Crane Foundation, Mike Taylor at White Oak Plantation, Allan Shoults at the Calgary Zoo, Megan Lauber at the Audubon Zoo, Josef San Miguel at the San Antonio Zoo, and Jane Nicolich at Patuxent Wildlife Research Center for the information used to compile this report.

Glenn Olsen, Laurel, MD

RESEARCH

The Measure Of Success

In 2000, a diverse group of folks teamed together to conduct an experiment leading sandhill cranes along a migration route with ultralight aircraft. The goal of the project was to refine a technique that could be used in the future for reintroducing a migratory flock of whooping cranes to eastern North America. Biologists reared and trained birds at Patuxent Wildlife Research Center in Laurel, Maryland, then transferred them to Necedah NWR, Wisconsin at about 5 weeks of age. In the fall, after flight training at Necedah, the ultralights led the cranes on migration to Chassahowitzka NWR in Florida. The birds overwintered at the refuge in Florida and in the spring migrated back to Wisconsin on their own.

Many measures can be used to quantify the successes of last year's study. We were able to identify a route through the heart of America that kept us clear of restricted airspace and yet closely aligned with the traditional migratory flyway. We found 35 stopovers that allowed us to lead birds from Wisconsin to Florida without exposure to people. We streamlined our training procedures and reduced human contact to the lowest level yet and provided the birds with a natural experience. We set the protocol for future studies while leading eleven birds over 1200 miles and into the imaginations of adventurers and naturalists around the world.

The Bird Team that was set up to carry out the reintroduction approved two studies last year. Both were designed to produce birds that would follow our aircraft but used different methods.

The primary study used an established technique originally developed by Operation Migration over many years with several species. It involved rearing the birds under the

expert tutelage of the staff at Patuxent Wildlife Research Center in Maryland and conditioning them to the aircraft starting even before they hatched. We believe that by beginning early the birds can be encouraged to follow the ultralight with only minimal human contact. This reduced exposure to people allows them a more natural experience, free from human interaction. There is less chance that the birds will become overly attracted to handlers and they are more likely to correctly imprint on the adult cranes that were penned next them.

The alternate training method was tested to see if birds could be introduced to the aircraft after they were 30 to 40 days old to allow more flexibility in where the training could take place. These birds, known as cohort 3, were reared at Necedah NWR in Wisconsin, which avoided the necessity of shipping them to and from a captive breeding center. Although they were not introduced to adult birds of the same species, handlers led them through wetlands for several hours each day. At night they were housed in individual pens and they were allowed to socialize while supervised by handlers. This additional conditioning to the costumed parent resulted in a reluctance to follow the aircraft even after receiving more conditioning time than the primary study birds. They were so attracted to the handler that they would only respond if the one they were most familiar with operated the aircraft, despite all the crew being identically costumed. Damage to one of the aircraft curtailed the training schedule and when it was resumed several attempts were made to lead the birds in flight. Unfortunately they showed little interest and would not follow the aircraft on the ground or in the air. The two comparison studies proved that over conditioning birds to handlers is not conducive to encouraging them to follow aircraft. Eventually the training was discontinued and the birds were used to re-test a one by one release technique developed by Dr David Ellis of Patuxent WRC.

Early training of the primary study birds at Patuxent WRC involved the use of a circle pen, which was an enclosure 30 feet in diameter and 2 feet high. Mealworms were used as a treat to entice the chicks to follow from the inside while the aircraft taxied around the perimeter. This protected the birds from the propeller and reduced the number of people required to conduct the training. The birds were led by the aircraft most of the time to minimize their exposure to walking handlers. The training scheduled was dictated by performance; if the birds followed perfectly, further training sessions were postponed. We reasoned that reinforcing a lesson already learned was not worth the additional contact time. We also used adult cranes as role models and digitally recorded calls to ensure that the chicks were sexually imprinted on the correct species. All of these improvements on our earlier techniques allowed us to reduce the conditioning time so the birds were following us with much less human interaction. Before they were moved to Necedah NWR in Wisconsin they received only 7 hours of exposure to the aircraft.

Once at the introduction site in Wisconsin they were penned in enclosures that were disguised to look more natural. Earth tones were used and trees were planted to help mask the human appearance. After early morning training sessions the birds were allowed their freedom, giving them the opportunity to socialize and establish their natural dominance structure unsupervised. Prior to departure on migration, the birds worked with the aircraft for an additional 22 hours. By comparison, in 1997 it took us 287.5 hours to

encourage the birds to follow us in flight. That time was reduced to 63 hours the next year and we now have it down to less than 30 hours giving the birds every opportunity to maintain their wildness.

During the 40-day migration we made 33 stops and covered 1227.5 miles. The birds flew a total of 29 hours and 51 minutes on the 31 days when the weather cooperated. Once in Florida the flock became sedentary, leaving the pen to forage in a pasture close by. On February 25 of this year they took off and circled the pen as they often did, only this time they disappeared over the northern horizon. On April 27th, 10 birds were confirmed back at Necedah National Wildlife Refuge in Wisconsin. The return of the Sandhill cranes from last year's study is very encouraging. The accuracy of the return, the fact that they landed right at the training area, adds credibility to our technique, but what excites us most is their wildness. Managing their experiences and providing a natural environment for the seven months that they were in our care took its toll on the team. For 62 days these immature birds meandered north, covering 1250 miles without one report of human interaction. They avoided people and behaved like wild birds should, proving the worth of our efforts. Our hope was to have as little impact on them as possible, to avoid familiarity with humans, yet instill in them the memory of a summer home and the knowledge of how to return there. Their behaviour validates our methods and opens the door to Phase II of the program. A criterion for success was established by the Bird Team to judge the behaviour and survival rate of the birds once they were released. The goals were set high to justify using the technique with an endangered species but the primary study exceeded the parameters and prompted the Recovery Team to support the reintroduction pending Federal and State approval.

Joe Duff, Operation Migration, Blackstock, Ontario

Reintroduction Techniques: The One-by-One Method of Releasing Sandhill Cranes in Central Wisconsin and Results After One Complete Migration

R. P. Urbanek, K. Brunette, M. Knoch, S. Swengel, M. Wellington, K. Maguire, S. Zimorski, T. Kaldenberg, L. Moore, M. McDaniel, and W. Hall

As part of an effort to develop reintroduction techniques for the endangered whooping crane, 8 sandhill cranes were costume isolation-reared from hatching (3-7 May 2000) at the rearing facility on Necedah National Wildlife Refuge. Chicks were usually led behind a costumed parent in natural habitats for at least an hour twice daily until after fledging. After fledging, cranes were allowed to roam freely in habitats in the rearing area during the day and were penned in a 650-m² top netted pen at night. Releases occurred each day from 15 to 23 October at four major sandhill crane staging areas in Central Wisconsin. Three of these sites, on Necedah National Wildlife Refuge (NWR) and Sandhill State Wildlife Management Area, were in the target reintroduction area for a planned whooping crane reintroduction. All birds were released into wild sandhill crane flocks one at a time at roost sites near dusk except for one released at a feeding site in mid-

afternoon. The one-by-one method was similar to that developed in Arizona by D. H. Ellis, Patuxent Wildlife Research Center.

All experimental cranes integrated completely into wild flocks within a few days, and all survived to migrate from Central Wisconsin with wild flocks approximately 13-18 November. Four males were recorded during fall migration at Jasper-Pulaski Fish and Wildlife Area, Indiana. Monitoring effort there was minimal, and no checks were made during the initial migration period. Six of the 8 cranes were confirmed wintering within large wild flocks on the following major sandhill crane wintering areas:

Grand Prairie, Okefenokee Swamp, Georgia (1 male)
Hixtown Swamp, Madison Co., Florida (1 female)
Ashley Prairie and Smith Lake, Putnam Co., Florida (1 male)
Fish Prairie, Marion Co.; and Paynes Prairie and Lake Kanapaha, Alachua Co.; Florida (1 male)
Hiwassee Refuge, Meigs Co., Tennessee (2 males)

One female and one male with malfunctioning transmitters were not found during the winter.

All 8 of the costume isolation-reared cranes returned to Central Wisconsin in spring 2001. Seven of them returned to and have remained in the primary study area (proposed whooping crane reintroduction area). Three of these birds were males who have settled in the immediate rearing area near Rynearson Pools on Necedah NWR even though two of these were released elsewhere. The remaining bird of the 8, the female with the nonfunctional transmitter, was observed several times earlier this spring at a large crane area 34 miles southeast of the rearing site.

These results are consistent with those of three cohorts of sandhill cranes reared and released at Seney NWR, Upper Michigan, in 1988, 1989, and 1990. In those releases, the majority of males returned and established residence on the immediate rearing/release area and then went on to successfully pair, establish territories, nest, and produce young. All of these birds were costume isolation-reared from hatching on the experimental reintroduction area and then released locally within wild sandhill flocks. This rearing and release procedure resulted in excellent release candidates who developed a strong philopatric association with their natal area. For a reintroduction of whooping cranes to be successful, it is critical that the initial core group of captive-reared birds return to and remain in the target reintroduction area the following spring/summer and subsequent breeding seasons. The research at Seney and Necedah indicates that this objective may be readily accomplished by proper rearing and release methods.

Richard P. Urbanek, Necedah, Wisconsin

The Unison Call is published twice a year, winter/spring and summer/fall. Membership is based on a calendar year. All contributions, suggestions, opinions, drawings, cartoons are very welcome! Send newsletter items to:

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Deadlines are June 10 and December 10. Please send information as a Microsoft Word attachment (e-mail) whenever possible.