



Grus Americana

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Brian Johns Wins WCCA's Highest Honor



WCCA Trustee Lorne Scott (left) presents the Pratt Award to Brian Johns. See article inside. ****Photo by Lea Craig-Moore, Canadian Wildlife Service****

Wood Buffalo/Aransas Flock

WCCA JOINS THE ARANSAS PROJECT IN A FEDERAL LAWSUIT AGAINST TEXAS COMMISSION ON ENVIRONMENTAL QUALITY OFFICIALS

In March, WCCA joined The Aransas Project (TAP) in filing a federal lawsuit against officials of the Texas Commission on Environmental Quality (TCEQ) for their actions in violation of the Endangered Species Act. The Aransas Project (TAP) [<http://thearansasproject.org>] is an alliance of citizens, organizations, businesses, and municipalities, including the County of Aransas (TX), International Crane Foundation, American Bird Conservancy, Environment Texas, Texas Chapters of the Audubon Society, and others who want responsible water management of the Guadalupe River Basin. The purpose of the lawsuit is to ensure freshwater flows from the Hill Country all the way to the bays—ecosystems that support area fishing, tourism, and winter habitat of the endangered Whooping Cranes. Defendants named in the suit are three TCEQ Commissioners, the agency's Executive Director, and the South Texas Watermaster for illegal harm of Whooping Cranes at and adjacent to Aransas National Wildlife Refuge.

The Aransas-Wood Buffalo flock of Whooping Cranes increased to a high of 270 birds in the spring of 2008. But the 2008-2009 year was the worst in recent history for the Whooping Crane, with a death toll of 57 birds, a staggering loss of 21.4% of the flock. Twenty three deaths, or 8.5% of the flock, occurred in Texas during their winter at Aransas. Lower freshwater inflows, from the Guadalupe and San Antonio Rivers, have a direct effect upon natural productivity of bays and estuaries. Blue crabs move about seeking preferred salinity level of less than 15 parts per thousand (ppt). Late in the winter, salinity levels in the Crane habitat were 29 to 39 ppt. and blue crabs, which normally provide 80 to 90 % of the winter food of cranes, had left the area. Food shortages affect the Cranes due to death by starvation, reduced resistance to disease, and lowered productivity of those who survive to return north to their nesting grounds. Dr. Felipe Chavez-Ramirez in 1994 verified that 37 % of whooping cranes failed to nest in 1994 after experiencing food shortages at Aransas the previous winter.

TAP attorney Jim Blackburn explains, “The harm that the Whooping Cranes have experienced is a direct result of TCEQ's failed oversight of its water rights permit programs in the Guadalupe River Basin. Too much water is being taken out of the Guadalupe and San Antonio Rivers, especially during low flow conditions. The scientific evidence strongly indicates that, during lower flow conditions, the full use of existing water rights in this basin—granted and overseen by TCEQ—will worsen the condition of the Whooping Cranes. The environmental flows process established by the Texas Legislature under Senate Bill 3, and the Edwards Aquifer Recovery Implementation Program, lack the authority to protect the Cranes from over-allocation of water resources that already exists in the basin.

Causing harm, harassment, or actual death of the protected Cranes is illegal under the federal Endangered Species Act. To remedy the violations of the federal law TAP seeks an injunction to prohibit TCEQ from approving or processing new or pending water rights permits in this basin until the court can oversee the development of a Habitat Conservation Plan for the Whooping Cranes. TAP is seeking a water management plan for the Guadalupe and San Antonio Rivers that ensures freshwater inflows to the San Antonio Bay system, especially during low flow conditions.

Grus Americana is a biannual newsletter for members of the Whooping Crane Conservation Association, a nonprofit tax exempt organization dedicated to the conservation of whooping cranes.

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Dr. Ron Outen, Regional Director of TAP who lives in Rockport, Texas explains, “In Aransas County, our economies depend on freshwater for survival. We are frustrated that the state has not provided a process to address our concerns about the lack of freshwater reaching the bays. This is about more than one bad year; the long term survival of the bays and the Cranes is at stake. To those officials who continue to pass off the threat to the Cranes as being limited to the drought, the drought is in fact the window to the future, and we cannot afford to risk perpetuating low flow conditions.” *****Jim Lewis, WCCA Treasurer*****



Tom Stehn of U.S. Fish and Wildlife Service transports one of the 23 Cranes that died in Texas during the winter of 2008-2009, leading to TAP’s lawsuit filing. USFWS photo.

Aransas-Wood Buffalo Population GPS Telemetry Project Update

In the winter of 2009-2010, we captured 2 Whooping Cranes in Texas, beginning our 3-year telemetry study of the Aransas-Wood Buffalo population of Whooping Cranes. The overall objective of this project is to gain a better understanding of Whooping Crane migratory ecology and behavior during migration with the use of Global Positioning System (GPS) technology. Specifically, we want to a) gain a better understanding of stopover areas, habitat use patterns, and factors influencing habitat use at different spatial and temporal scales, b) define a current migratory route to compare to previous route models and determine environmental and anthropogenic factors that influence migratory behavior, c) identify causes, locations, and conditions of actual or potential mortality, and d) expand current knowledge of winter and breeding ground use through high resolution GPS technology.

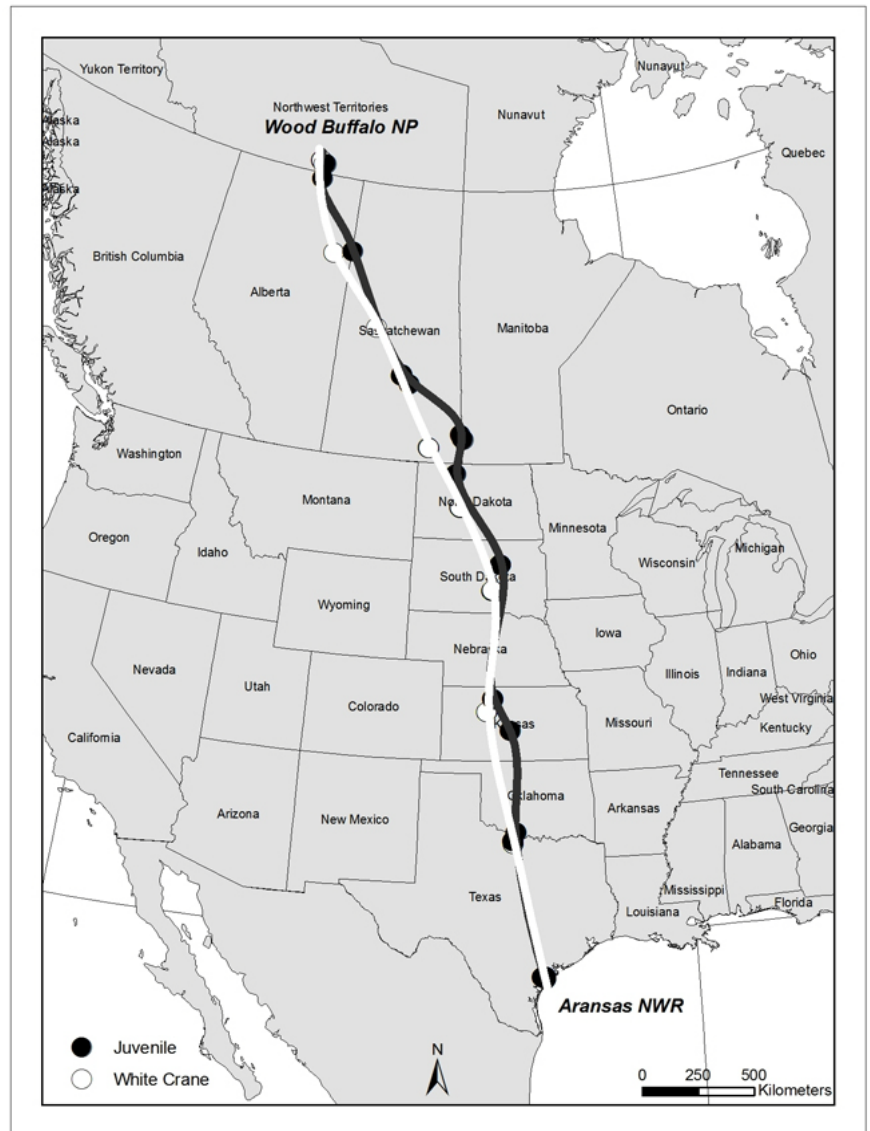
Better information on the migration behavior of Whooping Cranes in relation to power lines and other threats will allow us to better protect important stopover areas along the migration corridor in order to enhance the possibility that cranes survive the migration between breeding and wintering grounds. Understanding migration ecology and threats to Whooping Cranes during migration has been considered a priority of the Whooping Crane Recovery Team for several years.



Biologist Marty Folk gets ready to release a whooper banded in Texas.

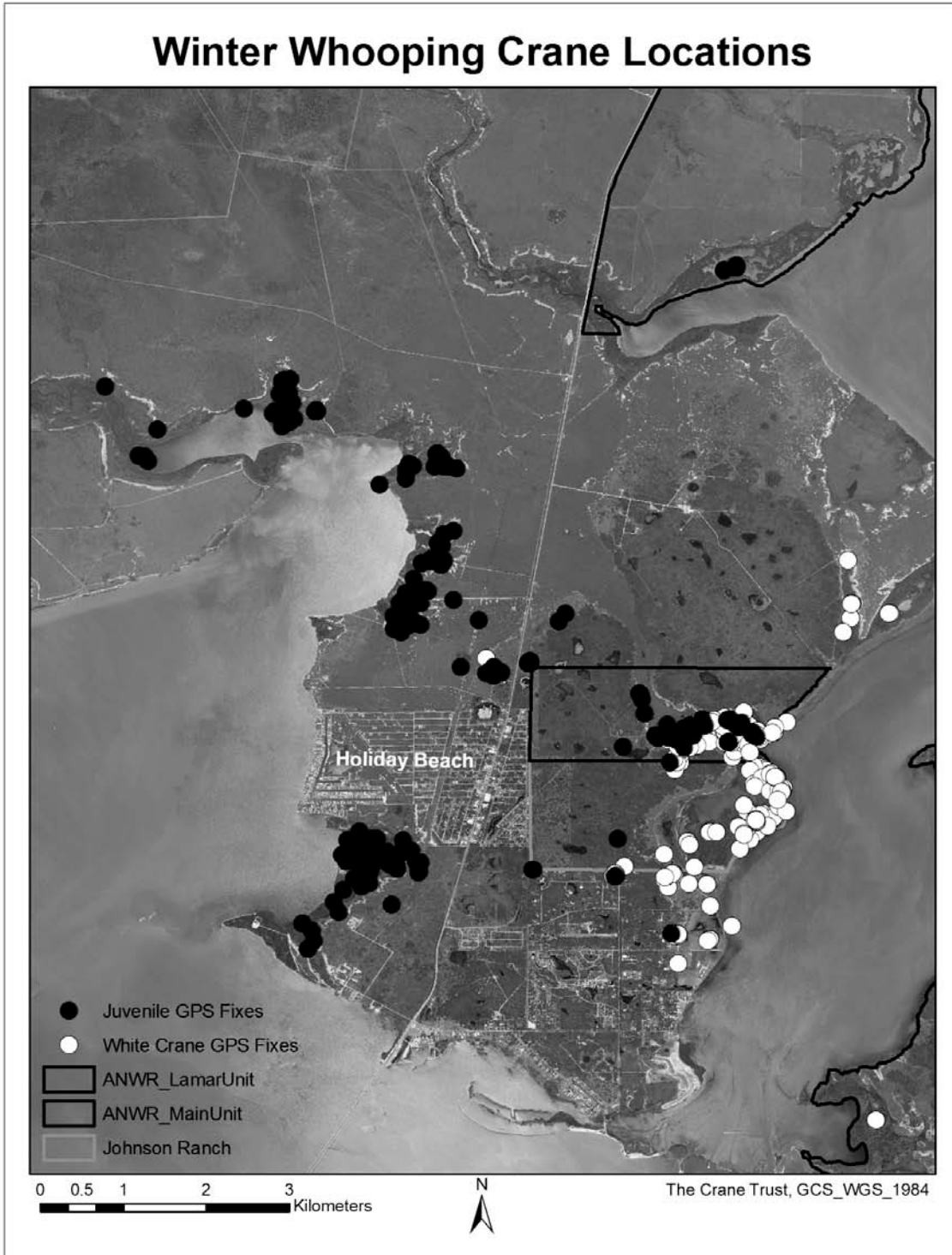
The cranes were fitted with a solar Argos GPS Platform Transmitter Terminal (PTT) attached to half of a two-piece leg band. Argos GPS PTTs provide remote information to within tens of meters of the actual location of the transmitter, and are therefore the most accurate and non-invasive tracking method available to use on these wide-ranging cranes. The GPS PTTs have solar panels integrated on all three exposed surfaces to keep the units charged, have an expected life of 3-5 years, and are programmed to collect 4 GPS fixes at regular intervals per 24 hour period, providing us with detailed information on daytime use sites, flight paths, and roosting sites. The GPS PTTs will be recording locations year-round, allowing us to monitor Whooping Crane movements and space use throughout both spring and fall migrations, on the breeding

We captured the 2 cranes in Texas using snare leg traps. Both cranes were trapped on a private ranch adjacent to Aransas National Wildlife Refuge. We set the snares close to a pond and automated corn feeder we observed cranes frequenting. The first crane, the single juvenile of a family group, was captured on December 10, 2009, and the second crane, the female (unknown age) of a pair, was captured on December 11, 2009. (See photo). Total capture and handling times were 16 and 15 minutes, respectively.



Spring migration path taken by 2 radio-transmitted whooping cranes.

grounds, and on the wintering grounds. The combined weight for the transmitter and leg bands was about 90 grams, well under the 3% of body weight guidelines even for a small hatch year crane. The cranes were also marked with unique combinations of colored leg bands and a federal aluminum leg band. Following transmitter attachment, cranes were monitored via GPS data download and direct observations to ensure cranes were alive and moving and to explore wintering space use patterns.



Plots of locations of 2 whooping cranes, Coastal Texas, winter 2010.

All trapping activities followed established Whooping Crane safe-handling guidelines. In addition to attaching marking devices, a general health assessment was performed on each captured crane, including collecting a blood sample. The findings from these health assessments will have significant implications for the AWBP and for potential future reintroduction efforts.

Both cranes initiated migration on March 19, 2010. Their paths and durations were similar, but their stopovers did not overlap (See map on page 4). Both cranes arrived at Wood Buffalo National Park on April 18, 2010. We visited stopovers after the cranes migrated to characterize these locations.

We will continue to monitor these 2 cranes via their GPS data on the breeding grounds. We expect the juvenile to wander as it is not a breeder and we expect our GPS data will help us determine whether the other crane is a breeder or not. Our next trapping attempt will be in Wood Buffalo National Park later this summer when we hope to deploy GPS PTTs on 10 more cranes! *****Felipe Chavez-Ramirez, PhD. and Jessica Rempel, The Crane Trust, Nebraska*****

Today's Trivia Question: What, and where is, the largest center for the propagation of whooping cranes? See Page 17 for the answer.

Update from Aransas National Wildlife Refuge

An aerial census flight was conducted May 19, 2010 in a Cessna 210 piloted by Gary Ritchey of Air Transit Solutions of Castroville, Texas with USFWS observer Tom Stehn. This is the first flight since the airplane was damaged by a bird strike on the March 23rd census. The plane's windshield, several instruments, and interior were replaced.

A single white-plumaged whooping crane was sighted on the refuge's Dunham Point Marsh. I could not tell if the crane is the one we refer to as Scarbaby that has failed to migrate several years. Dunham Point is adjacent to the Lobstick territory, the parents of Scarbaby, so that is why I think the crane could be him.

The spring migration proceeded ahead of schedule this year. The highlight of the migration was the presence of 76 whooping cranes in 5 separate groups on the Quivira NWR on April 1st. Another interesting report was the presence of 5 whooping cranes 2 miles from the Titan I wind project in South Dakota April 3-5. The turbines were shut down during critical times, and were actually ordered shut down by a biological monitor as the birds began their migration flight. The two cranes radioed at Aransas were tracked successfully and both completed the migration. One is sitting on a nest, and the radioed juvenile was recently located north of Wood Buffalo National Park and across Great Slave Lake.

From the Gulf oil spill, models predict < 1 percent chance of oily waters reaching the central Texas coast. However, tar balls are expected to be hitting the Texas beaches. The refuge has videotaped the beach and marsh edges. Additional biological monitoring will be done in the near future to assess potential future damage from oil impacts. *****Tom Stehn, US Fish and Wildlife Service*****

Update from Wood Buffalo National Park

Breeding surveys in and around Wood Buffalo National Park were completed last week by Kathy St. Laurent and myself. Last year 62 nests were found and in 2008 a record number of 66 were found. This year I am pleased to report 74 nests were found. Only four 2009 territories did not have a nest this year. A third nest as been found in the Lobstick creek area on Salt River First Nation Land, just a few kilometers northeast of the Lobstick male's northern territory. Water conditions are fantastic and all marshes appear to be full. Fledging surveys and banding of juveniles will begin the first week of August. *****Lea Craig-Moore, Canadian Wildlife Service*****

Updates from Reintroductions

Eastern Migratory Population: Solving the Current Challenge of Successful Whooping Crane Nesting in Wisconsin

History of Nesting Efforts

- 2005 – First year that pairs in the eastern migratory population nested. Two nests were built and two eggs laid, but both eggs were lost.
- 2006 – First successfully fledged chick in the eastern migratory population. Five nests built, all five nests were unsuccessful. One pair re-nested (#11-02 and #17-02) and hatched two chicks. One of the chicks (#W1-06) survived to fledging.
- 2007 – Four unsuccessful nests. One pair re-nested, but this nest was also unsuccessful.
- 2008 – 11 unsuccessful nests.
- 2009 – 12 unsuccessful nests. Five or six pairs re-nested (it is unknown if there was a sixth re-nest). Two chicks hatched, but both chicks died within a month. One of the chicks that hatched was from a captive-produced egg from the International Crane Foundation.

The eastern migratory whooping crane population entered the 2009 nesting season with a total of 12 potential breeding pairs. Upon returning to Wisconsin from their respective wintering areas, all pairs established nesting territories. By April 21, all 12 pairs were incubating: 11 on Necedah National Wildlife Refuge (NWR) and 1 on a private cranberry farm in adjacent Wood County. In a repeat of the pattern observed over the past two years, all first nests were abandoned. In 2009, all pairs abandoned their nests between April 18 and May 3, with the largest number of nests abandoned on April 23 and 24. Five or six pairs re-nested (it is unknown if there was a sixth re-nest). Out of those re-nests, two pairs each hatched a chick. Unfortunately, neither of the chicks survived to fledging. One of the chicks that hatched was from a captive-produced egg from the International Crane Foundation (ICF). The pair's own eggs were both infertile. When it was discovered that neither egg would hatch, researchers switched the pair's two eggs for an egg from ICF.

Our Expectations:

Only one, naturally occurring, wild flock of whooping cranes exists. It breeds at Wood Buffalo National Park (Wood Buffalo NP) in Canada then migrates to Aransas National Wildlife Refuge (Aransas) on the Texas Gulf Coast, where it spends the winter. Our knowledge of whooping crane ecology is based on studies of this flock. Our expectations for breeding behavior and productivity in the eastern migratory whooping crane population also come from observations of this flock.

Wild Whooping Crane Breeding Ecology

Whooping cranes tend to form pairs when two to three years old. They mate for life but will take a new mate if the original mate dies. Paired cranes arrive at Wood Buffalo NP in late April and begin nest construction. They show considerable fidelity to their breeding territories, and normally nest in the same general vicinity each year. Several pairs have nested in the same areas for 22 consecutive years. Wild whooping cranes may start laying eggs as early as three years of age although the average age of first egg production is usually five years old. Whooping cranes generally nest annually, but may skip a year when nesting habitat conditions are unsuitable, or if they are nutritionally stressed, or for other reasons. For example, in 2005, 12 out of 70 known adult pairs failed to nest in Wood Buffalo NP. Eggs are normally laid in late April to mid-May, and hatching occurs about one month later. The incubation period is from 29 to 31 days. Around 90 percent of the clutches contain two eggs. Whooping cranes may re-nest if their first clutch is destroyed or lost before mid-incubation. Egg predation is uncommon at Wood Buffalo NP, and re-nesting has only been documented a few times.

Whooping crane parents share incubation and brood-rearing duties. Except for brief intervals, one member of the pair remains on the nest at all times. Females tend to incubate at night and take the primary role in feeding and caring for the young. Although they may lay two eggs, most pairs are not able to successfully rear both chicks. Only about 10 percent of whooping crane families arriving on their winter territories at Aransas have two chicks. The second egg in a clutch may provide insurance that at least one chick survives. In nests with two eggs, the first chick hatched has the greater chance of survival. Habitat conditions, including food availability and predator abundance, affect survival. In years when habitat conditions are good, crane pairs may raise two young.



Pair of whooping cranes at their nest in central Wisconsin. Photo courtesy Eva Szyszkoski, International Crane Foundation

Hypothesis Development and Testing:

We have proposed a number of hypotheses to explain the high rate of nest abandonment in the eastern migratory population. **It is quite likely that more than one factor is causing the nest abandonment and that those factors may be interacting.** Additionally, there are always random events that can disrupt nesting during any given year. The Whooping Crane Eastern Partnership has the complicated task of tweezing out the interacting factors at the heart of the problem as distinct from random events that may also have disrupted nesting. The Partnership remains cautious and will not jump to conclusions about connections between observations of the birds and other factors like weather and black flies. Some relationships may appear to be cause and effect but may be unrelated or coincidental. The Partnership does not want to make important decisions based on relationships that turn out to be a coincidence. Another constraint the Partnership faces is the small number of breeding pairs, which makes valid research conclusions difficult to reach.

Hypothesis Development

In 2009 seven of 12 first nests failed within a 36 hour period. This suggests that an environmental factor contributed to the abandonments (e.g., limited food resources, biting insect harassment, disturbance). Some aspect of diet (i.e., quality, quantity, timing of availability), environmental temperatures, and the nesting inexperience of these relatively young birds may be contributing factors.

Biologists monitoring nesting whooping cranes observed large numbers of black flies on some of the incubating cranes during the time that the nests were abandoned, which lead to a cause and effect hypothesis. Black fly harassment as the cause of nest abandonment can be scientifically tested, by removing or reducing the number of black flies present and observing the outcome. As part of a two-year experiment, the Partnership will suppress black flies while monitoring nesting pairs. This experiment does not call for long-term suppression of black flies in the area. If the experiment indicates that black flies may be the reason that cranes abandon their nests, then black fly control may be a management option.

Hypothesis Testing

The nest abandonment pattern in 2009 was similar to what has been observed in previous years. The Whooping Crane Eastern Partnership (WCEP) began research in 2009 that investigated the cause of the abandonments by collecting data throughout the nesting period on crane behavior, temperature, food availability, and black fly abundance and distribution. Results from the 2009 nesting studies did not provide sufficient data to indicate whether black flies were causing the cranes to abandon incubation before eggs hatched. Observers did note that, in some cases, the abundance of black flies near crane nests appeared to be much higher than would be expected compared to levels monitored elsewhere in the refuge during the same time period.

The results of the 2009 nesting studies are presented below, with the following cautions:

- Studies are unlikely to result in conclusive evidence of causes of nest failure after only one study season.
- Scientific experiments have greater power to reveal the causes of observed results when the size of the sample is large. Due to the small number of nesting pairs, it is difficult to draw valid conclusions about cause and effect relationships affecting nesting success of the whooping cranes.
- Incubating cranes are exposed to a large number of stresses, and it is likely that several factors may affect the cranes, quite possibly in combination.

2009 Nest Monitoring Studies

Going into the 2009 nesting season, several theories were developed to explain the nest abandonment observed in previous years. Seven factors potentially contributing to limited whooping crane reproduction were tested. Those factors included: **limited food resources, nest disturbance, inexperience among nesting pairs, captive breeding effects, incubation delays, nest habitat characteristics, and harassment by biting insects, including black flies.** The following are explanations of some of the theories and the studies that were conducted during the 2009 nesting season to test those theories.

Limited food resources

This study examined the theory that incubating birds were nutritionally stressed, so much so that the appearance of numerous prey items triggered by rising temperatures (e.g. the sudden appearance of large numbers of frogs) caused them to leave their nests to seek food.

Researchers observed what the birds were eating and the habitat they occupied while foraging. Additional sampling was conducted to determine what food items were available to the cranes at Necedah NWR, whether they ate them, or not. At least seven whooping crane nests were monitored with either cameras or observers in blinds, collecting information on nesting and non-breeding cranes at timed-intervals to determine the role of energy balance on nest abandonment. Supplemental food was provided to at least four of the seven nesting pairs, to see if providing additional food prevented nest abandonment.

Captive breeding effects

One theory suggests that captive-reared birds will not survive and reproduce as well as wild-hatched individuals. Such effects have been noted in a number of bird reintroductions. The cause of captive-reared effects is not known. One belief is that wild-reared individuals, raised by parents who have learned to successfully survive and reproduce naturally have a benefit over individuals of captive-reared parents. Given the high level of parental investment exhibited by whooping cranes (as opposed to many bird species that spend little time with their young), this is a plausible hypothesis. While sample sizes are extremely limited, there is an indication that wild-hatched whooping cranes in the Florida non-migratory population survived better than their captive-reared parents.

Harassment by biting insects

Another theory of the cause of nest abandonment is that incubating birds were unable to tolerate the abundant blood-feeding black flies that emerged in large numbers with the first significant warm weather. Researchers observing nesting pairs in 2008 noted a correlation between the emerging black fly adults and the period of nest abandonment.

Incubation Delays

Another explanation for the nest abandonments is that they were not abandonments, but incubation delays. When both parents are absent from the nest, other than for nest exchanges, it is considered delayed incubation. Pairs on Necedah have left nests for as long as three days, then returned to again incubate. It is possible that pairs may be delaying incubation rather than abandoning nests. During the 2009 nest season, eggs were left in nests when both parents were missing to test whether they would return to incubate.

2009 Nest Monitoring Results

Results from 2009 Nest Monitoring indicate that limited food resources and nest disturbance are unlikely causes of wide-scale nest failures. The study found that neither supplemental food nor allowing whooping cranes to return to temporarily abandoned eggs increased production.

Whooping crane nesting and comfort behaviors were affected by several species of biting insects, but no single species of biting insect caused all the nest abandonments.

By incorporating data that identified captive-reared versus wild-reared birds and age of pairs it became apparent that biting insect activity appeared to be working with both effects of captive breeding and inexperience among the whooping crane pairs to affect incubation length and nest failure date.

The study also showed shifts in whooping crane biting insect tolerance, with older pairs more tolerant than younger pairs. Although the maturing population will gain experience that hopefully results in increased production, our analysis indicates that this shift will not result in sustainable reproduction rates until approximately 2013. In the meantime, several management options to affect captive breeding effects and biting

insect numbers can be explored. If any of these management options or combination of options work, whooping crane reproduction could be increased in the short-term.

Black fly studies

WCEP enlisted the aid of Dr. Peter Adler of Clemson University, a nationally recognized expert on black flies. A student of Dr. Adler located and mapped black fly breeding areas on Necedah NWR and vicinity to identify how they relate to whooping crane nesting areas.

Adult black flies were captured in carbon dioxide (CO₂) traps distributed throughout whooping crane nesting areas. These traps were operated through the nesting period to characterize abundance, locations, and species of black flies. Data on abundance of black flies collected in the CO₂ traps did not correlate well with the pattern of whooping crane nest abandonment. Observations of black fly numbers made directly at whooping crane nests, however, showed high numbers of black flies present at nests on days when very few black flies were collected in the CO₂ traps. This indicates that numbers of black flies at nests are higher than what would be expected from general abundance on the refuge, and may indicate that black flies are attracted to something at the nests. It also tells us that the CO₂ traps did not provide us with information that we could use to test whether or not black flies were the cause of nest abandonment.

Biting flies in relation to whooping cranes

A number of whooping crane decoys, some outfitted with real whooping crane wings, were used to test black fly attraction to whooping cranes. Despite the lack of statistical significance, we did observe some trends. Decoys with real wings consistently produced more biting insects than decoys without whooping crane wings, and decoys on nests produced more biting insects than decoys off nests.

Of all biting flies in the Necedah NWR area, the following five were captured on glue boards around nests of both whooping cranes and sandhill cranes and reflect a succession of species: the black flies *Simulium annulus*, *Simulium johannseni*, and *Simulium meridionale*, and the horse flies *Hybomitra* and *Tabanus*.

Breeding habitats of black flies

The highest densities of *Simulium annulus* and *Simulium johannseni* pupae were found in the Yellow River. These were the two species of bird-feeding black flies that were present in the highest numbers at the crane nests (the immature stages of *Simulium meridionale* were not located in the refuge area, so we do not know where they are breeding). This is significant because it indicates that effective suppression of black flies at the crane nests on the refuge will require treatment of black fly larva at locations outside the refuge, including the Yellow River.

2010 Research Plans

WCEP plans to continue intensive nest monitoring in 2010. Additional techniques are being explored to monitor crane behavior and to remove black flies from the nest areas so that we can use those techniques in 2011 to conduct a management experiment that correlates black fly abundance and nest failures.

In order to conduct a management experiment that involves removing black flies from the nesting areas and recording whooping crane nest and incubation behaviors to detect a response, the black fly population would need to be effectively suppressed in the flies' "commuting area". Black flies can travel distances of 6-18 miles, so a suppression treatment would need to cover a large area. Development of an effective treatment program that can be used in 2011 will require surveys and experimental treatments in 2010 that test the efficacy of Bti in the flowing water and temperature conditions found around Necedah NWR. Additional surveys to locate larval populations within flying distance of the Necedah NWR will also be conducted. WCEP plans to apply to the Wisconsin Department of Natural Resources for permits to use Bti (a non-chemical insecticide to control black flies) in the Necedah area in Spring 2011.

Bti experiment

In a proposed two-year experiment, the Partnership will suppress black flies in order to learn what affect it has on the nesting pairs. This experiment is not a long-term suppression of black flies in the area. The flies are a native species, and could be an important part of the local aquatic ecosystem.

The two-year treatment and close observations of the whooping cranes will help WCEP determine to what extent black fly harassment contributes to nest desertion. There will also be a broader age range within the crane population, which will help determine what effect the age of the cranes has on reproductive rates. It is important to learn if black flies are a major factor in the nest abandonments because 1) it will help WCEP consider management options to control black flies at crane nests, at least in the short term, and 2) knowing black flies are a limiting factor would help WCEP evaluate additional release locations.

What is Bti?

Bacillus thuringiensis (Bt) is a naturally occurring soil bacterium used as an alternative to chemical pesticides to control insects. Different strains of Bt can be targeted to specific groups of insects while having little to no effect on other organisms in the ecosystem. B.t. israelensis (Bti), was registered by the Environmental Protection Agency in 1983 for the control of black flies and mosquitoes. Bti is highly toxic to these insects and has been found to have activity against some species of midge. No other insect species, including other dipterans (Order of insects including flies and mosquitoes), have been found to be susceptible to Bti toxicity. No effects to birds, mammals, fish, or other invertebrate species exposed to Bti have been detected. *****Joan Garland, International Crane Foundation*****.

For more information on the project visit the WCEP website at <http://www.bringbackthecranes.org>

Florida Resident Flock

Spring rains added some water to marshes this year, providing some relief from a long-term dry spell. There were 9 whooping crane nests, the most we've seen since 2006. Four chicks hatched from 3 of those nests. We continue to study this flock, with a focus on nesting biology. This year, to enhance our study of behavior at nests, we deployed data-logging eggs into nests to measure the temperature (see photo). A device in the artificial eggs records the temperature every 90 seconds. After nesting we recover the data-logging eggs and load the stored information onto a computer for analysis. This pilot study is designed to help us compare successful vs. unsuccessful nests and provide baseline data for other crane flocks. Data logging eggs have been used to study incubation of captive cranes, but never have been used in a "wild" setting. Therefore, information gained from our work will also allow us to make recommendations to other biologists on how to use this technique with the least disturbance to the birds, while maximizing the collection of useful data.

This spring we deployed artificial eggs into 5 nests of whooping cranes and 1 nest of sandhill cranes. Care was taken to follow strict protocols to minimize threats to the nests. For example, time spent at each nest was kept as short as possible. Based on previous use of artificial eggs in a captive setting, we predicted the birds would "adopt" the artificial egg as their own. As expected, all birds returned to their nests immediately after deployment and resumed normal incubation. After completion of this season's nesting, we will begin analyzing the data collected. *****Marty Folk, Florida Fish and Wildlife Conservation Commission*****

For more information on the Florida non-migratory whooping crane flock, visit: <http://research.myfwc.com/> and click on "Whooping Crane"



Whooping crane nest with artificial data-logging egg (left) next to a natural egg.

WHOOPING CRANE NUMBERS IN NORTH AMERICA

March 21, 2010

Wild Populations

	Adult	Young	Total	Adult Pairs
Aransas/Wood Buffalo	244	19 ^B	263 ^A	72
Rocky Mountains	0	0	0	0
Florida non-migratory	28	1	29 ^C	8
Wisconsin/Florida migratory	75	28	103	10
Subtotal in the Wild	347	48	395	90

^A The Aransas-Wood Buffalo population is currently estimated at 264 birds.

^B Fifty-two chicks hatched in Canada in 2009 but only 22 fledged. Twenty completed the migration, and one died at Aransas in January, 2010.

^C Florida is currently monitoring 26 birds. The other 3 are missing but could show up.

Captive Populations

	Adult	Young ^E	Total	Breeding Pairs
Patuxent WRC, Maryland	64	4	68	15
International Crane Foundation, WI	31	0	31	11
Devonian Wildl. Cons.Cent./Calgary	23	0	23	6
Species Survival Center, Louisiana	11	0	11	1
Calgary Zoo, Alberta	2	0	2	0
New Orleans Zoo, Louisiana	2	0	2	0
San Antonio Zoo, Texas	7	0	7	1
Homosassa Springs Wildl State Park	2	0	2	0
Lowry Park Zoo, Tampa, Florida	2	0	2	0
Jacksonville Zoo, Florida	2	0	2	0
Milwaukee County Zoo, Wisconsin	2	0	2	0
Sylvan Heights Waterfowl Park, NC	0	1	1	0
Subtotal in Captivity	148	5	153	34

^E The captive numbers do not reflect the 34 chicks hatched in 2009 that entered reintroduction programs in Wisconsin.

TOTALS (Wild + Captive) 395 + 153 = 548 (Source: Tom Stehn, USFWS)

Check out the 12-page spread on the Aransas-Wood Buffalo flock in the June *National Geographic* magazine. Photographs were taken at Aransas and at a nest in Canada. Here's a link to the associated article and photos on the Web: <http://ngm.nationalgeographic.com/2010/06/whooping-cranes/holland-text>



Photo by Steve Nesbitt.

Brian Johns wins Pratt Award

On January 9, 2010 close to 100 friends, family and colleagues of Brian Johns gathered in Saskatoon, Saskatchewan to celebrate Brian's distinguished career with the Canadian Wildlife Service. Brian is best known for being the Canadian researcher, guardian and voice for the endangered Whooping Crane. Over the years Brian carried out field work on nesting grounds in Wood Buffalo National Park and along the migration route through Saskatchewan monitoring and caring for North America's tallest birds. According, to Brian I took him to see his first Whooping Crane in the early 1970s, when we both worked at the Royal Saskatchewan Museum in Regina.

Brian capably represented Canada on the Whooping Crane Recovery Team working closely with other crane caretakers, biologists and government representatives. The Whooping Crane Recovery Team made up of representatives from Canada and the United States has done an excellent job with very limited resources in managing and protecting North America's symbol of conservation.

The Whooping Crane Conservation Association was very pleased to present Brian Johns with the Jerome J. Pratt Whooping Crane Award on January 9, 2010 (see photo on front cover). The award is given on an infrequent basis to an individual or organization who through exceptional achievement and dedication, has contributed significantly to the conservation and/or collective knowledge of the Whooping Crane. Friends and colleagues wish Brian well in his retirement. ****Lorne Scott, WCCA Trustee****

Message from a WCCA Grant Recipient

Editor's note: The WCCA provides grants for whooping crane conservation. Through the years, Operation Migration has been the recipient of some of these grants.

The typical crane-like bird first appeared in fossil record some 24 million years ago. The last modern specie separated around 5 million years ago. The decline of Whooping cranes began with the encroachment of man about 200 years ago and reached a critical level 70 years ago when only 21 birds remained. Forty-three years ago the first captive flock was established at the Patuxent Wildlife Research Center in Maryland and the first attempt at reintroduction began 35 year ago. Ten years ago the Whooping Crane Eastern Partnership led the first generation from Wisconsin to Florida.

It took an eternity to create the specie and a couple of centuries to drive it to the edge of extinction yet, in the impatience typical of our modern society, we expect a successful reintroduction in only 10 years.

If you were part of the team that secured the permits or raised the money or if you have nurtured a new generation of chicks each spring and summer for as long as you can remember then ten years seems like forever. But it is really the blink of an eye when measuring wildlife restoration programs.

As the human population grows and has an increasing impact on wildlife, reintroduction programs will become an unavoidable technique for those of us convinced that biodiversity is critical to the healthy environment on which even we depend. But they aren't cheap and they aren't quick. Conservation is far more effective and cost efficient than restoration.

Recently a team of five independent scientists conducted an extensive review of the science and management of WCEP and one of their parting recommendations was to be patient. It will take time to repair the damage done by habitat loss and the overhunting that took place in a time not too long ago when the concept of conservation was not widely understood.

Everyone directly involved with WCEP hoped or maybe even expected that 10 to 12 years might be enough to establish a healthy, self-sustaining population. Most everything in our modern world works on a five year plan. Things change far too fast to see much beyond a half decade, so we can all be excused for our myopia when the concept was new and we were full of enthusiasm.

Thanks to the efforts of WCEP there are now 103 Whooping cranes that summer in Wisconsin. They have successfully learned to migrate to Florida and even teach the same route to their offspring. In most cases they avoid humans and select proper habitat. They are sexually oriented to their own species, form pair bonds, define territories and defend them. They breed, build nests and incubate their eggs – at least for a term.

There have been many great successes and yet we face a daunting challenge. We must determine why the birds are abandoning their nests in mid-incubation and then find the cure, and that will take patience.

It may also take more than one generation. It is well documented that a species brought into captivity begins to adapt almost immediately. Successive generations produce offspring that are less able to cope with the rigors of life in the wild. Many programs like the Condor reintroduction experienced many years of low survivability and poor behavior but things improved once the first wild-hatched generation began to adapt. Certain aspects of evolution may work faster than we think.

The Whooping cranes released by WCEP are likely more managed than most reintroduced animals. They are isolation reared and raised in larger than normal groups without natural parents. Their experiences are

controlled by the human handlers for the first 6 months and they are taught to migrate. Many of us were over protective of these newly released birds, reluctant to interfere in hopes that nature would take its course, but maybe that was shortsighted. If we study other reintroduction programs we learn that it is the first wild-hatched generation that we should pin our hopes to and that justifies aggressive management of the birds we have already manipulated in order to get this population started.

As of this writing the 2010 breeding season is underway. A warm spring meant early nesting and an early Black fly infestation. So far it has been disappointing but researchers at ICF and Necedah Refuge's Biologist, Rich King are gathering information through remote cameras and direct observation. Dr. Peter Adler from Clemson is conducting Black fly treatment tests and George Archibald is helping to test other sites. We at Operation Migration have a team of pilots overflying the nests to provide aerial sightings and pair locations. There are still a number of birds that have yet to nest and we expect some re-nesting so we are still hopeful.

In a couple of weeks we will be in full swing at Patuxent Wildlife Research Center preparing the next generation for their first migration. This is our tenth season and although we have done it before it is hardly old hat for us. Training a flock of Whooping crane to follow our aircraft and leading them 1200 miles from Wisconsin to Florida is not routine no matter how often you do it. Each year there are different challenges. This year it's patience. *****Joe Duff, Operation Migration*****

To learn more about Operation Migration visit: <http://www.operationmigration.org/>.

Message from the WCCA President



RR1 Box 2278
Baileyville, Maine 04694
May 18, 2010

Dear WCCA Members:

The Whooping Crane Conservation Association (WCCA) needs to add two trustees to the WCCA Board of Trustees (Board). According to the WCCA Articles of Incorporation and Bylaws (Article III) the trustees are elected members of the WCCA or in special circumstances, appointed by the Board. The Board consists of five elected members who serve for ten-year terms. In the last two years of the term, the incumbent serves as WCCA President. Incumbents can resign at any time.

The Board manages the general affairs of the WCCA, cares for and controls WCCA property. These affairs include the five primary purposes for the WCCA:

1. Advance conservation, protection, and propagation of the Whooping Crane (WC) population through its communication, publications, meetings, and committees and through the activities of its members, provide its members an opportunity for meeting to discuss related topics.
2. Prevent the extinction of the WC.
3. Establish and maintain a captive management program for the perpetuation of the species.
4. Promote greater harmony and unity among all organizations, institutions, and agencies working toward the protection, conservation, and production of the species.
5. Collect and disseminate knowledge of this species, advocate and encourage public appreciation and understanding of the WC educational, scientific, and economic values.

Trustee nominations should be made in writing to Secretary Jeannette Parker (5840 Forrests Edge Lane, Gloucester, VA 23061) who will forward them to me and I will arrange for an election. The incumbent Trustee automatically becomes a nominee for re-election but one Trustee has declined.

In the election of a trustee, each nominee must be opposed by at least one other nominee. So we need your help in getting members willing to serve. Most WCCA business is conducted by e-mail but an e-mail account is not necessary. It is most appropriate to nominate yourself or to ask another member to serve since our organization is small and spread over such a wide geographical area. A brief description of the nominee and their willingness to serve would help us in the conduct of the election.

The Whooping Crane population is in great jeopardy (as you know from our newsletters) and the Whooping Crane needs our help.

Sincerely yours,
George F. Gee
President, WCCA

Answer to Today's Trivia Question from page 6: The largest center for the propagation of whooping cranes is in Laurel, Maryland (near Washington, DC). The Patuxent Wildlife Research Center houses more than twice as many whooping cranes as any other captive facility. To learn more about Patuxent, visit <http://www.pwrc.usgs.gov/cranes.htm>.



In Memoriam

Larry Smith was president of the WCCA on 3 occasions. In 1982 he received an Honor Award for his work with cranes. In 1998 he received the Jerome Pratt Whooping Crane Conservation Award. Below is his obituary from the Watertown Daily Times.com 12/29/09. *****Jim Lewis, WCCA Treasurer*****

RODMAN — Memorial services for Lawrence (Larry) Smith 84, of Denver, Colorado, were held on December 16th, 2009. Larry died suddenly Wednesday Dec 9th at his home. He is survived, by his wife of 60 years, Virginia, two sons and daughter-in-laws, Rodney and Nancy Smith, Crawford, CO, and Del and Elizabeth Smith, Lakewood, CO, a daughter and son-in-law Suzanne and Richard Long, Bergen, NY, ten granddaughters, a sister and her husband Jean and Robert

Ertl, Fairfax, VT, sister Joan Loomis, Waddington, NY, and several nieces, nephews and cousins.

Larry was born in Rodman on May 22, 1925, the son of Stanley and Vida Smith. He grew up on a small family dairy farm in Honeyville, NY. Upon graduation from Adams Center High School in 1943, he enlisted in the Army. After aircrew training in Nebraska, Larry participated in 35 missions to Japan as top gunner on a B-29 bomber of the 9th Bomb Group, 313th Bombardment wing, 20th Airforce, based on Tinian Island. After the war, Larry received a BS degree from Cornell University in Biology in 1949 and a MS in Wildlife Management and Fishery Biology in 1951. In 1949 he married his high school sweetheart, Virginia McIntosh. Larry began his career with the US Fish and Wildlife Service (FWS) as Refuge Manager of the Monomoy National Wildlife Refuge on Cape Cod, MA. Subsequent Refuge Manager assignments included five years at Montezuma NWR, Seneca Falls, NY, and 15 years at Iroquois NWR, Alabama, NY. In 1974 he was assigned to the Albuquerque, NM, Regional Office of Refuges and Wildlife where he served as Migratory Bird Coordinator for the southwestern US. As part of his duties he was appointed to the Whooping Crane Recovery Team and served as Team leader from 1980 through 1987. In 1985 Larry received the Department of Interior Meritorious Service Award, the highest award given in the Department Interior for his service to FWS. In retirement he served as Southwest Representative of the National Wildlife Refuge Association, and President of the Whooping Crane Conservation Association. He also helped organize the 9th Bomb Group Association and served as its historian, and was editor in the production of the 9th Bomb Group History book. Larry enjoyed traveling with his wife during retirement. Destinations included Alaska, South Africa, Kenya, China, New Zealand, and South Korea. One of his lifelong passions was photography. Some of his wildlife photography has been seen in national publications and he often entertained family and friends with movies and slide shows. To his family and friends Larry was a kind and gentle person, always quick to help others. His kids remember a dad who thoroughly enjoyed life, and filled their lives with adventures big and small, and a father who loved and cared for his wife.

****Watertown Daily Times.com****

Edmonton Whooping Crane 'Guru' Dies Wildlife Biologist Ernie Kuyt Made Rare Birds His Passion



Biologist Ernie Kuyt examines a delicate cargo of whooping crane eggs.

Photograph by: Chris Schwarz, The Journal, File, Edmonton Journal

Prominent wildlife scientist Ernie Kuyt always put family first, and the whooping crane -- that majestic bird he helped rescue from the brink of extinction -- was part of his family. Mr. Kuyt emerged as one of the top experts in the world on whooping crane biology -- actively studying and caring for the birds for more than 25 years. The Edmonton-based scientist's dedication to wildlife conservation and whooping crane recovery was recognized with several international honours and awards, including the Order of Canada in 1993.

Mr. Kuyt died May 21 from injuries sustained in a fall. He was 81.

A prolific author of scientific articles, Mr. Kuyt contributed to whooping crane studies and monitored the progress of the endangered birds to his last days. "Even after he retired, he didn't really retire from the cranes," said his son, Jonathan. "This was just a labour of love. The most important thing to him was

family, but the cranes were part of that family."

Born in the Netherlands in 1929, Mr. Kuyt immigrated to Canada with his parents and five siblings shortly after the Second World War. Every May 10, he reflected on the experience and gave thanks to Canadians for liberating Holland at the war's end.

"I think the debt is now the other way around," musician and environmentalist Harlan Green wrote in a May 1990 letter to The Journal. "I live on the flight path of the cranes, and my first sighting -- three whoopers trying

to land in a snow squall -- was the biggest thrill of a life. "I thank him for the chance that some day my children may share this breathtaking experience."

Mr. Kuyt was reluctant to leave his studies on wolves and caribou when first assigned to whooping cranes in 1965, but quickly fell in love with the rare birds, which boast a wingspan of almost 2.5 metres and stand 1.5 metres tall. "He was just so devoted to the cranes," Mr. Kuyt's wife of 50 years, Elsie, said from the Duggan home they shared. "When I first saw them, I couldn't believe it -- I knew exactly what he was talking about. "They're a magnificent bird; they take your breath away."

Brian Johns, a recently retired Canadian Wildlife Service scientist who took the reins as a lead figure of the whooping crane recovery program in 1991, described Mr. Kuyt as a mentor and an astute scientist with an inquiring mind. "I learned everything from Ernie," said Johns. "I was just hoping I could do as great a job as he did. "He was the guru of whooping crane knowledge."

In a statement, Dave Duncan, Prairie and northern region director for the Canadian Wildlife Service said: "Ernie Kuyt was the best kind of biologist: passionate and dedicated to wildlife conservation...the successful conservation of whooping cranes in North America is due in large part to Ernie Kuyt. "It is a sad day when we lose a man of this stature and commitment." *****Thandiwe Vela, Edmonton Journal, May 27, 2010*****

Honor Roll of Donors

Thanks to the following individuals who contributed extra money over and above their annual dues; all contributions will be used toward conservation of the whooping crane:

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Membership Information

For Membership information, e-mail jmaeparker@cox.net or call Jeannette at 407-460-2399. Also visit our web site: <http://whoopingcrane.com/> for lots of additional information and articles from past newsletters.

Members—please send your correct address if the one shown below is wrong. Send to the return address below.

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Pair of whooping cranes in a central Florida marsh. The flowers are of pickerelweed (*Pontederia cordata*).
****Photo by Marty Folk, Florida Fish and Wildlife Conservation Commission****