



**Whooping Crane Eastern Partnership  
2012 Condensed Annual Report**

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## PREFACE

The Whooping Crane Eastern Partnership (WCEP) reached its 12<sup>th</sup> season in 2012. Since the inception, our goal has been to establish a self-sustaining migratory population of whooping cranes to eastern North America – that is 120 adult whooping cranes with at least 30 breeding pairs, whereby the population is sustainable through reproduction and survivorship to maintain or grow that population from there. In the 12 years, WCEP has released 207 cranes into the wild; a little more than half are still out on the landscape. There were two whooping crane pairs that nested in Wisconsin in 2005. Although neither pair was successful in fledging a chick, it marked the first time in over 100 years that a whooping crane nested in eastern North America. The next year, a chick was fledged from a nest! We appeared to be on the road to success. In the years to follow, whooping cranes nested, a few were successful in hatching chicks, and fewer yet raised chicks to fledging. In fact, since the first chick was fledged in 2006, there have been only four more whooping cranes naturally fledged back into eastern North America – two of which fledged in 2012!

The following 2012 WCEP Annual Report describes how the Partnership has responded to poor whooping crane production. The Research and Science Team reports on, among other things, the final experimental year of control of black flies--a possible link to lowered whooping crane nesting success. The team has also gained additional insight on crane energetics and habitat use. The Monitoring and Management Team summarizes who, how, where, and why whooping cranes are monitored and the value to WCEP in acquiring that information. The Rearing and Release Team reports on egg numbers, chick allocations, the decisions as to how many chicks are released to the wild, and any new release techniques on the horizon. Getting information out to the WCEP membership, reporting our progress to our enthusiastic friends and supporters, as well as public alerts is handled by our Communications and Outreach Team.

As I contemplate my first full year as a WCEP member, I am struck with the amount of hard work and collaborative science occurring within the membership. As a Guidance Team Co-Chair, I sit and live vicariously through the hard work, dedication, and success I see from my fellow Guidance Team members, the leadership in our Operations Team, and the rest of the working parts of this great Partnership. I read a book in 1970 that described the precarious nature of the species. I believe it was at this time when the fire was ignited inside me to work with wildlife. I do not think when I read that book over 40 years ago, that I would be here today living the dream. I feel extremely fortunate to be surrounded by the bright and dedicated folks that feel as passionate about whooping crane recovery as I do.

The Partnership celebrates the successes together, and we also feel the disappointment when things just don't work out the way we think they should. There are a number of us in WCEP who participated in the 2012 Structured Decision Making Workshop and I am hopeful we can soon refine a strategic planning document to help us deliver sound whooping crane conservation in the next several years.

Finally, I would be remiss if I did not acknowledge the departure of a few key WCEP members. Rebecca Schroeder (Wisconsin Department of Natural Resources, Guidance Team) and Joel Trick (U.S. Fish & Wildlife Service, Monitoring and Management Team) retired during 2012. Both were long-term members of the Partnership who were instrumental in paving the pathway

for where we are today. Mike Engels (International Crane Foundation, database genius) found another opportunity to the great state just west of Wisconsin (Minnesota). The Partnership thanks all three for their years of dedication to the recovery of whooping cranes to Eastern North America.

Peter Fasbender, Guidance Team Co-chair, U.S. Fish & Wildlife Service

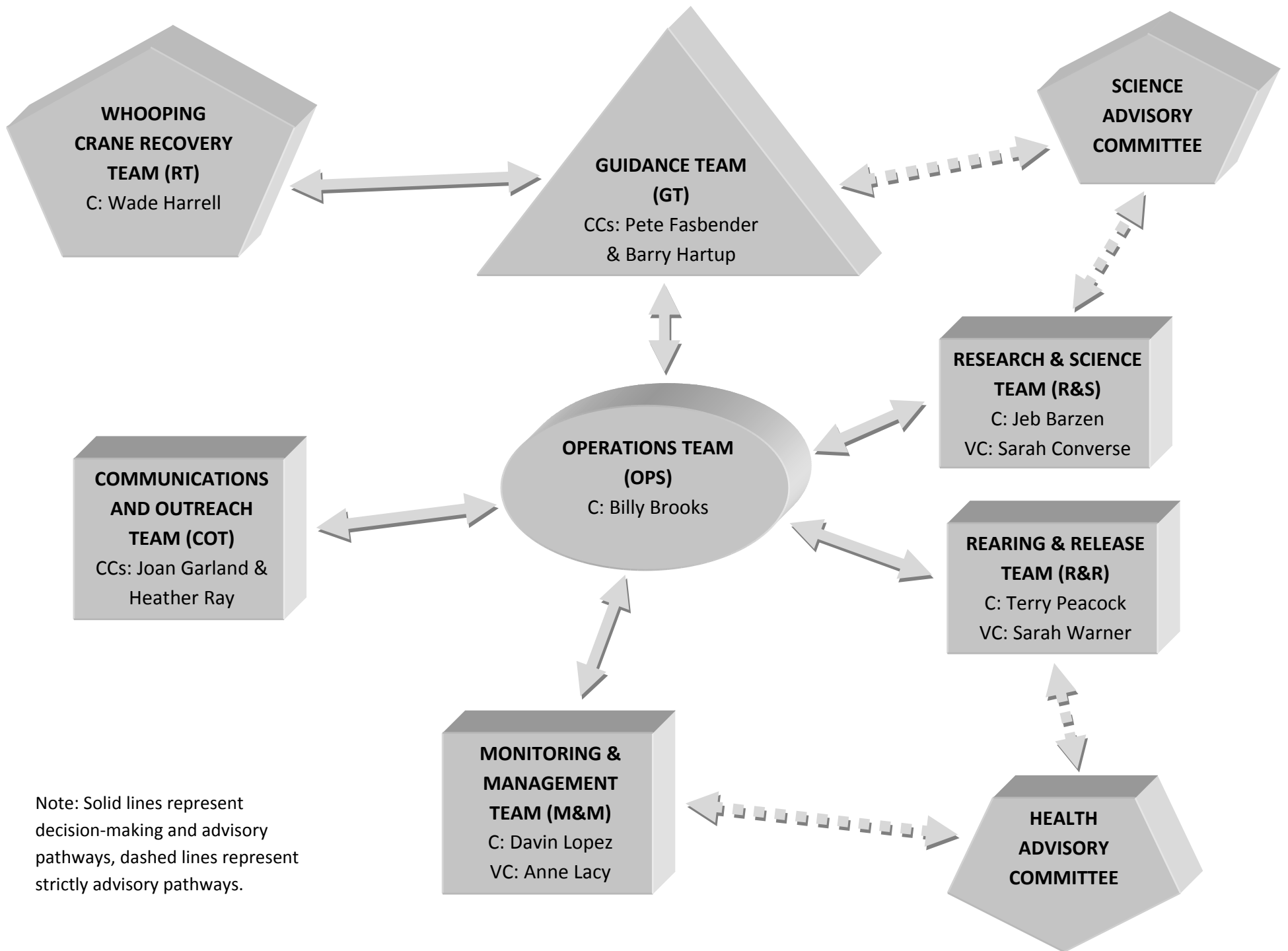
Whooping Crane Eastern Partnership founding members are the International Crane Foundation, Operation Migration, Inc., Wisconsin Department of Natural Resources, U.S. Fish and Wildlife Service, the U.S. Geological Survey's Patuxent Wildlife Research Center and National Wildlife Health Center, the National Fish and Wildlife Foundation, the Natural Resources Foundation of Wisconsin, and the International Whooping Crane Recovery Team.

*2012 Condensed Annual Report compiled by Joan Garland, International Crane Foundation*

## **OPERATIONS TEAM**

Each WCEP project team has a team chair or co-chairs. These team leaders make up the Operations Team. Project decisions that cannot be made within a team or between teams are made by the Operations Team. The Operations Team Chair keeps the Guidance Team up to date on the project needs, operations and decisions. If the Operations Team is unable to come to agreement on a decision, they seek the support of the Guidance Team. In 2012, the Operations Team accomplishments include:

- Monthly conference calls to discuss project operations were held on the third Tuesday of each month and summary notes of the call are posted to the WCEP Wiki.
- Concurrence and decision to implement the Research and Science Team 2012 Nest/Egg Management recommendation as it relates to the Nesting Success Study provided to the Guidance Team for concurrence, February 10, 2012 and posted on the WCEP Wiki.
- Planned, hosted and facilitated the WCEP Annual Meeting to report on 2011 accomplishments, February 1-2, 2012 at the International Crane Foundation, Baraboo, Wisconsin.
- Developed and began implementation of a decision making protocol and “decision document” format.
- Concurrence/decision to change from a bi-weekly to a monthly update on the status of the Eastern Migratory Population. The updates now include a location map with no location specific references that are at the county level or finer. Monthly updates are posted on the [bringbackthecranes.org](http://bringbackthecranes.org) website and on the WCEP Wiki.
- Concurrence with the Monitoring and Management Team Co-Chair, Davin Lopez, and made recommendation to the Guidance Team for Anne Lacy (International Crane Foundation) to replace Joel Trick (who retired from the U.S. Fish & Wildlife Service in September 2012) as Co-Chair of the Monitoring and Management Team.
- Drafted 2013 workplans and budgets for Guidance Team review, November/December.
- Development and planning to implement a new format for the Annual Meeting (February 13, 2013) as a “webinar.” This was done to help minimize travel costs for all partners and the project.
- Implementation of an “executive summary” format of the 2012 and future WCEP Annual Reports. The 2012 WCEP Annual Report and other detailed reports for research projects, studies, project updates, and published manuscripts can be found on the WCEP Wiki and on the [bringbackthecranes.org](http://bringbackthecranes.org) website.



Note: Solid lines represent decision-making and advisory pathways, dashed lines represent strictly advisory pathways.

## **REARING AND RELEASE TEAM**

Releases continued in the Wisconsin Rectangle in 2012. WCEP had a greatly reduced number of eggs (chicks) allocated to the project for release. Therefore, the Rearing and Release Team decided not to conduct the parent rearing experiment until a future year. The team decided instead to continue with both the Ultralight-led and Modified Direct Autumn Releases in order to meet WCEP's strategic objective for releases in the Wisconsin Rectangle. As a result of the reduced production, each release method only received six birds.

### **Ultralight-led Migration**

The first chick assigned to the aircraft-led migration in 2012 was hatched at the USGS Patuxent Wildlife Research Center on April 30. Only nine days later the youngest chick in the cohort was hatched, providing the narrowest age range that WCEP has worked with thus far. All six chicks were imprinted and conditioned to follow one of the Operation Migration aircraft while at Patuxent.

On June 22, the birds were transported to Wisconsin in custom-designed containers by private aircraft courtesy of Windway Capital. Because of the narrow age range, all six birds were transported in one shipment and were trained as one cohort. They were housed in the facilities created in 2011 at the White River Marsh State Wildlife Area.

The 2012 migration began on Sept 28. As a result of healthy and well-conditioned birds, and because the weather conditions continued to be good for migration, the migration to St Marks National Wildlife Refuge (NWR) was completed in 57 days. Due to the small cohort size this year, it was agreed the birds would all overwinter at St. Marks NWR.

At the end of a flight from LaSalle County, Illinois to Piatt County, Illinois, bird number 10-12 was injured during a rough landing in high winds. It is not known if the bird hit the aircraft or simply hit the ground hard, but the result was a broken leg. The leg was stabilized and the bird was transported to the University Of Illinois College Of Veterinary Medicine. A team of veterinarians and veterinary students led by Dr. Julia Whittington attempted to repair the leg using new technology, however, the bird died in surgery.

On November 23, the ultralights and young whooping cranes flew over the town of St. Marks, where over 1000 people had gathered to watch the flight. The birds were kept in a top-netted portion of the pen until the veterinary check and banding could be completed on December 7. After an adjustment period while the birds acclimated to the new bands, the cranes were finally released on December 12.

A team from Operation Migration, with assistance from Disney's Animal Kingdom and St Marks NWR monitored the birds over the winter.

### **Direct Autumn Release**

Direct Autumn Release is the method of releasing chicks near other cranes in the fall. 2012 is the second year for the Modified Direct Autumn Release (MDAR) project where birds begin at ICF, move to Necedah NWR and then to Horicon NWR, where the chicks are released in late October.

The six young whooping cranes were moved to Necedah NWR in July. While at Necedah NWR, costumed caretakers worked with the whooping crane chicks in the natural environment, encouraged foraging, and monitored interactions with the territorial pair and other whooping cranes which would visit Site 3. Similar to 2011, once the chicks fledged, they were kept in the covered pen until transferred to Horicon NWR.

This year's chicks were moved to Horicon NWR in early September. Costumed caretakers encouraged flight and slowly decreased their time spent with the birds. Dry weather continued throughout the time the chicks were at Horicon NWR. This created challenges to training chicks to roost in water. Fortunately, no mortalities occurred during this time, even though predators were heard nearby, and there was physical evidence of their presence.

Prior to release, the six cranes were banded with U.S. Fish and Wildlife Service bands, auxiliary colored markers and VHF transmitters. The two females were also outfitted with GPS-enabled satellite transmitters. The birds were released on October 29 near a large crane roost. Five MDAR juveniles began migration in one group two days after release. Within two weeks, they had reached their wintering area in south-central Florida. The sixth chick stayed near Horicon NWR for another three weeks before migrating south. This chick also migrated to central Florida for the winter.



## **MONITORING AND MANAGEMENT TEAM**

This report documents the biology of the whooping cranes in the reintroduced eastern migratory population during the calendar year of 2012. The distribution of cranes during this report period is shown in Figure 1 (this figure includes most PTT points, including points in flight).

### **Winter 2011/2012**

The wintering population as typified by status on January 21, 2012 included 99 birds (49 males and 50 females). Estimated distribution was 38 in Indiana, four in Illinois, six in Georgia, seven in Alabama, two in North Carolina, two in South Carolina, six in Tennessee, 11 in Florida, 21 undetermined, and two long-term missing.

### **Spring Migration 2012**

The majority of birds initiated spring migration during late February – late March. Nos. 17-03, 7-09, 4-08, 26-07 and 11-02 were the first whooping cranes to be confirmed back at the Necedah NWR (by March 7). Of documented cranes 2-years-of age or older returning to central Wisconsin, 72% did so by March 16, an additional 26% arrived on or before March 27 and the remaining 2% by April 2. Eighteen juveniles completed migration to Wisconsin from March 13 – April 22.

### **Spring, Summer, and Autumn 2012**

A majority of the 2011 juveniles did not exhibit as extensive spring wandering movements as in previous years and only one (no. 9-11) was documented traveling into another state (Washington County, Minnesota). Other more remote locations used by juveniles included areas in Polk, Outagamie, Shawano, and Iowa Counties in Wisconsin.

As of June 30, maximum size of the eastern migratory population was 104 birds (52 males and 52 females). Estimated distribution at the end of the report period or last record included 97 whooping cranes in Wisconsin, two in Michigan, three not recently reported, and two long term missing. This total does not include three wild-hatched chicks. An additional six juveniles were added to the population by the DAR method on October 29 when they were released at the Horicon NWR, Dodge County, Wisconsin. This year was the second year that birds were released at this location. All juveniles began migration from the Horicon NWR; five on October 31 and one on November 23. More detailed information about the DAR juveniles can be found in the Rearing and Release report.

Most of the older cranes (Hatch Year [HY] 2001-10) summered as usual on or near the Necedah NWR. Autumn distribution was similar to summer distribution for most cranes in the population; however, some birds left their summering territories to use staging areas at remote locations (*e.g.* sites in Rock, Dane, La Crosse and Walworth Counties, Wisconsin).

### **Autumn Migration 2012**

Unlike previous years, migration initiation was much more spread out, beginning in late October and ending in early December. Of known migration dates or ranges, 40% (35 birds) of the cranes had left on migration by or on November 1. An additional 51% (45 birds) left between November 6-26 with the highest known concentration leaving on November 21-23 (20 birds; 12 confirmed on November 23).

## **Winter 2012**

Maximum size of the eastern migratory population through the end of December 2012 was 114 birds (58 males and 56 females). Estimated distribution included 42 whooping cranes in Indiana, 16 in Florida, 16 in Alabama, 11 in Tennessee, eight in Illinois, three in Kentucky, three in Georgia, nine at unknown locations, two not recently reported, and four long term missing. The total in Florida included five recently-released ultralight-led juveniles. This total does not include a suspected, but unconfirmed, mortality.

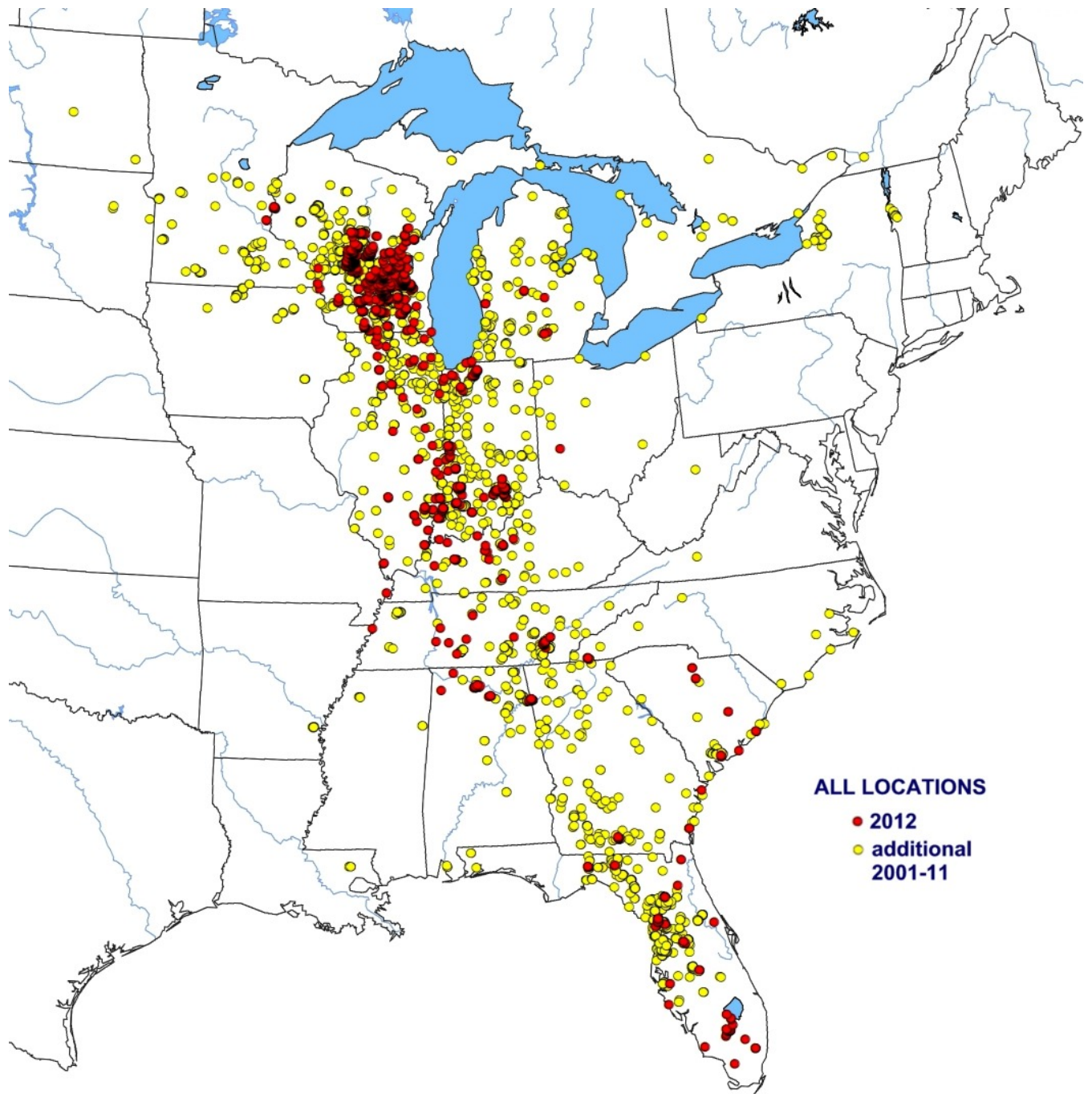
## **Survival**

As of December 31, 2012, 207 whooping cranes have been released as juveniles since the reintroduction began in 2001. This value excludes 17 HY2006 ultralight-led juveniles that died during confinement in a storm and one HY2007 ultralight-led juvenile that was removed from the project after being unable to fly after handling at the winter release site. An addition of five naturally produced juveniles (one in 2006, two in 2010, two in 2012) resulted in a grand total of 212 reintroduced individuals, of which 114 (53.8%) may currently survive. Additionally, four long-term missing birds have been removed from the population totals.

As of December 31, 2012, there have been 98 recorded mortalities. Of those, 42% have had the cause of death determined, 33% have not, and 25% have never been recovered. The primary known cause of mortality was predation (49%), followed by impact trauma (22%), gunshot (15%), and disease (7%). Birds less than one year since release comprised only 14% (1/7) of the mortalities in 2012. The majority of mortalities in 2012 were of birds two years of age or older (86%).

## **Reproduction**

Twenty-nine nests by twenty-two pairs were initiated in 2012; twenty-two first nests and seven renests. Spring of 2012 marked the first year that nests were documented initiating in March, with the first nest found on March 26. One additional nest initiated on or by March 30. The majority of first nest initiations were spread out relatively evenly through the month of April and into early May with 27% beginning between April 4-8 and 32% beginning between April 14-19. The latest initiation of a first nesting attempt occurred on May 2. Of the first nesting attempts, five nests hatched out one chick each while one nest hatched out two chicks and three others were incubated past full term. Renesting attempts by seven pairs were initiated from April 18 – May 21. Of the renests, two nests hatched out one chick each, two others were incubated past full term and the fate of one was undetermined and a chick may or may not have hatched. Eggs were pulled from two of the five nests that were incubated past full term. Examination of the two eggs determined that they were infertile. Eggs from the remaining nests that were incubated past full term were not pulled before the pairs stopped incubation and the eggs were lost; however, two of the nests reportedly had fertile eggs based on fertility checks at 20-25 days of incubation. This is the second year in a row that a two-year-old female (no. 5-10) has laid an egg.



**Figure 1:** Distribution of whooping cranes in the eastern migratory population, 2012.

## RESEARCH AND SCIENCE TEAM

### Reproductive Success Experiment in 2012

The Research and Science Team of WCEP coordinated a third year of a four-year study aimed at understanding the causes of reproductive failure in the Eastern Migratory Population (EMP). The specific goal was to temporarily remove target species of black flies from the environment and examine whooping crane nest success as a result. The strategy the Research and Science Team employed to accomplish this goal is also designed to allow an examination of other factors that may relate to reproductive success such as predation, energetics, and maturation/experience of the birds in the population. To evaluate overall reproductive performance, the team compared data from the EMP with other release studies as well as with the Wood Buffalo/Aransas Population (WBA). A summary of the third year in the experiment is provided below.

#### 1. *Bti* Treatment

The team of Drs. Peter Adler, Elmer Gray and John Smink were responsible for implementing the *Bti* treatment according to permit specifications provided by the Wisconsin Department of Natural Resources. Sections of the Yellow River, South Branch of the Yellow River, Lemonweir River, and Cranberry Creek were treated March 19–22, 2012. Unlike 2011, all targeted black fly populations were treated thoroughly.

Weather conditions in 2012 differed substantially from previous years. Temperatures were warmer than normal and these warmer temperatures occurred earlier than normal. A larval sample taken in mid-February indicated that the development of *Simulium annulus* was similar to that of previous years. The warming trend in March, however, particularly on days without significant cooling at night, caused rapid acceleration of development and advanced the pupation season by two to four weeks. Although the 2010 season was warmer than normal as well, with some of the lowest flow rates in the past 60 years, it was not nearly as advanced as the 2012 season. Consequently, pupation in 2012 began early and treatment of a significant portion of the population of *S. annulus* was missed by the *Bti* treatment because pupation occurred before the treatment was completed. Pupae are unaffected by *Bti*.

Larval mortality of *Simulium* species ranged from 94% to 100% at 15 of the 17 treated sites. Larvae were absent at two of 17 sites so no *Bti* was deployed. Product carry was excellent, with 94% mortality achieved at distances up to 9.2 km (5.7 miles) downstream from an application. As a result of seasonal timing and the locations where *Bti* was applied, only the two target species of black flies (*S. annulus* and *S. johannseni*) were affected by the *Bti* treatments. *S. johannseni* larvae were effectively killed and this species was removed from the landscape while *S. annulus* larvae were reduced but not killed to the same degree as *S. johannseni*.

#### 2. Adult Black Fly Monitoring

To measure the abundance of adult black flies in the landscape where whooping cranes nest, seven CO<sub>2</sub> traps were placed at Necedah NWR in the same locations used in 2011 (first year of *Bti* treatment) and 2009 (control year when no *Bti* was used). Four traps were located in the north half of the refuge and three traps were located in the south. Samples were collected on 23 days during 24-hour periods for each sample, from March

25 to June 24, 2012. Dr. Adler identified 204,793 individual bloodsucking flies (including mosquitos) collected from these traps.

In addition to CO<sub>2</sub> traps, four dummy eggs were placed in nests at CO<sub>2</sub> trap locations, two in the south and two in the north half of the refuge. Each artificial nest was constructed with emergent wetland vegetation that was placed on a floating platform and contained both a plastic whooping crane and a real whooping crane egg filled with plaster. The egg was rubbed on the uropygial gland of a live whooping crane at the beginning of the study. The purpose of the artificial nests was to test for a relationship between frequency of adult black flies measured at both CO<sub>2</sub> traps and nests.

From CO<sub>2</sub> traps, *S. johannseni* adults were nearly absent from the Necedah NWR landscape. A total of 196 individuals were trapped in all of 2012. Numbers of *S. annulus* adults, however, were similar to 2009 when no treatment was implemented. Numbers of *S. meridionale*, which was not targeted with *Bti*, were also similar to 2009 levels. In addition, after both variables were transformed to the natural log, the relationship between *S. annulus* numbers captured at CO<sub>2</sub> traps was correlated with numbers of the same species captured at artificial nests. There was no relationship when all black fly individuals were combined, likely because *S. meridionale* was abundant in early June but not captured at artificial nests. The CO<sub>2</sub> traps did describe black fly abundance at whooping crane nests for the black fly species that were present during the whooping crane nesting season.

### **3. Nest Monitoring**

Whooping crane nests were monitored up to twice a day by ground and aerial survey. As a result of this intensive nest monitoring, most nests were found very early in incubation if not during the laying of the first egg. Twenty-two pairs of whooping cranes nested in 2012 and seven of these pairs renested. Of 22 nesting attempts, nine chicks hatched from eight nests with two chicks hatching from renests and seven chicks hatching from six initial nesting attempts. Nest success was 27.5% overall (eight nests that hatched at least one chick out of 29 attempts), 27.3% (six of 22) for initial nest attempts and 28.6% (two of seven) for renests.

In addition to nests containing eggs that hatched, eggs at five other nests were incubated for 30 days (considered full incubation) but did not hatch. The fate of a sixth nest was unknown. This nest either failed at the end of incubation or hatched young that were quickly lost. Of the nests with eggs that did not hatch even though they were incubated full term, two contained eggs that were infertile or that had died early in incubation. Eggs from the other three nests were floated during incubation and determined to be fertile, but they did not hatch. Unfortunately, these eggs were not recovered when the nest was terminated. If the five nests that were incubated full term were defined as successful nests then overall nest success was 44.8% (13 of 29).

Of the nests that were incubated for less than 30 days, eggs were found missing at the same time that the nest was found unattended, a pattern which is consistent with eggs taken by predators, not nest abandonment. Nest cameras were not able to detect cause of nest failure because they were located too far from the nest.

#### 4. Black Fly Hypothesis

Results from three years of experimentation have been varied but are interesting to consider. In the control year where no *Bti* was applied (2009), the relationship between black fly abundance and nest success was difficult to assess. Nest abandonment occurred somewhat synchronously, which would imply an effect of black flies, but abandonment occurred early in the emergence of black flies (particularly *Simulium annulus*) before peak numbers of black flies were on the landscape. Relatively low densities of black flies overall would, therefore, seem to have a large, detrimental impact on nest success.

In 2011, the first year where *Bti* was applied, nest success improved, as predicted, but not greatly so. Even though nest success only improved a little, black flies, especially *S. annulus*, were virtually absent from the landscape. In this case, perhaps low numbers of *S. johannseni* or undetected *S. annulus* were still important in causing nest abandonment by concentrating at nests. Observation of large clouds of black flies and blood on neck feathers of one incubating whooping crane (April 29, 2011) suggests that black flies may still concentrate at nests even when overall numbers of trapped black flies are low.

Finally, in 2012 (the second treatment year), nest success improved dramatically even though our suppression of black flies was not successful for *S. annulus*. *S. johannseni*, however, was removed from the landscape. Specifically, high densities of *S. annulus* were present during nest initiation in 2012 but were not present during nest abandonment for many, if not most, of the nests. Given the results from all three years combined, the Research and Science Team's current hypothesis that black fly abundance negatively affects whooping crane nest success is difficult to assess. Interactions between a whooping crane's ability to tolerate black fly parasitism and other variables, such as nesting experience or weather, may reflect a more complicated way that whooping cranes respond to their environment over time.

#### 5. Other Hypotheses

Regardless of the outcome for our black fly hypothesis, the record high nest success (44.8%) observed with the EMP in 2012 was still low compared to what we think occurs in the WBA (i.e. >70%). Why does EMP nest success remain so low? Though we measured no direct evidence of it, nest predation may be another factor suppressing nest success that we were unaware of before the reproductive success experiment began. In 2012, most eggs were missing as soon as the adults were discovered to be no longer attending the nest. In previous years, as well as in 2012, when abandonment of the nest occurred, eggs remained in the nest bowl for at least a half day after the attending pair was found away from the nest. Predators taking eggs would cause nest abandonment and rapid disappearance of eggs. Predators may also be responsible for the poor fledging rate of chicks (two of nine hatched chicks fledged). Though inconclusive, the predation hypothesis of chicks and eggs needs further exploration. Once birds in the Wisconsin Rectangle begin to breed, we will have the opportunity to evaluate both habitat use in these different wetlands as well as any difference in predator abundance or diversity that might exist at Necedah NWR versus nesting areas in the Wisconsin Rectangle.

To some extent, the increasing experience of nesting birds in the EMP coincides with the reduction of black flies up to 2012. The purpose of the final year of the reproductive success experiment is to differentiate between the maturation of birds in the population and the effect of black flies. Given that no *Bti* treatment will occur in 2013, black fly numbers should rebound on the landscape. If this occurs, reproductive success should decline again if black flies are the primary factor suppressing nest success. If experience of the birds, on the other hand, is more important than is overall black fly numbers, then nest success should remain high or increase (if predators are not so important).

To evaluate how well birds have done in the EMP we have compared this population to the reintroduced population in Florida and to the WBA population.

	Fertility (%)	Age of First Nest	Age of First Egg	N (Number of Years Observed)
WBA	93	5	5.4	12
EMP	68	3.6	4.2	8
Florida	46	5.7	7.1	9

Specifically, our intensive nest surveys and nest visitation effort this year allowed a better assessment of egg viability in the EMP. Besides nest success rates, whooping cranes in the EMP have reproductive behavior that is similar to WBA population.

Finally, work on the hypothesis that insufficient energy reserves or low wetland productivity reduces nest success will be further advanced in 2013.

Figure 2. All nesting attempts in the Eastern Migratory Population and their fate, 2005-2012. The x-axis is absolute calendar date (day 1-365) while the y-axis represents the pair of Whooping Cranes involved in the nest attempt. Underlined birds originate from the DAR program, birds with a 'W' fledged from wild parents in the EMP and all other birds are from the Ultra-light program. In 2012 only, birds nesting for the first time have an \* by their identification number. Finally, horizontal lines represent the dates over which the nest was known such that blue = a nest that failed to hatch and was incubated less than 30 days, green = a nest that was incubated 30 days but did not hatch, grey = a nest that was incubated almost 30 days but the outcome (failed nest or young killed just after hatch) was unknown, and yellow = a hatched nest. Red horizontal lines separated years of each nesting season.

Figure 3. Figure 2 with data from adult black flies captured using CO2 traps superimposed on nesting phenology. In 2009 *Simulium johannseni* adults are depicted by red lines and *S. annulus* by blue lines. Horizontal blue lines are in increments of 10,000 adult black flies captured. In 2011, *Simulium johannseni* adults are depicted by dark blue lines and *S. annulus* by light blue lines. Horizontal blue lines are in increments of 2,000 adult black flies captured. Finally, in 2012, *Simulium johannseni* adults were almost absent and *S. annulus* adults were depicted by black lines. Horizontal blue lines are in increments of 2,000 adult black flies captured.

### Nesting phenology of EMP WHCR

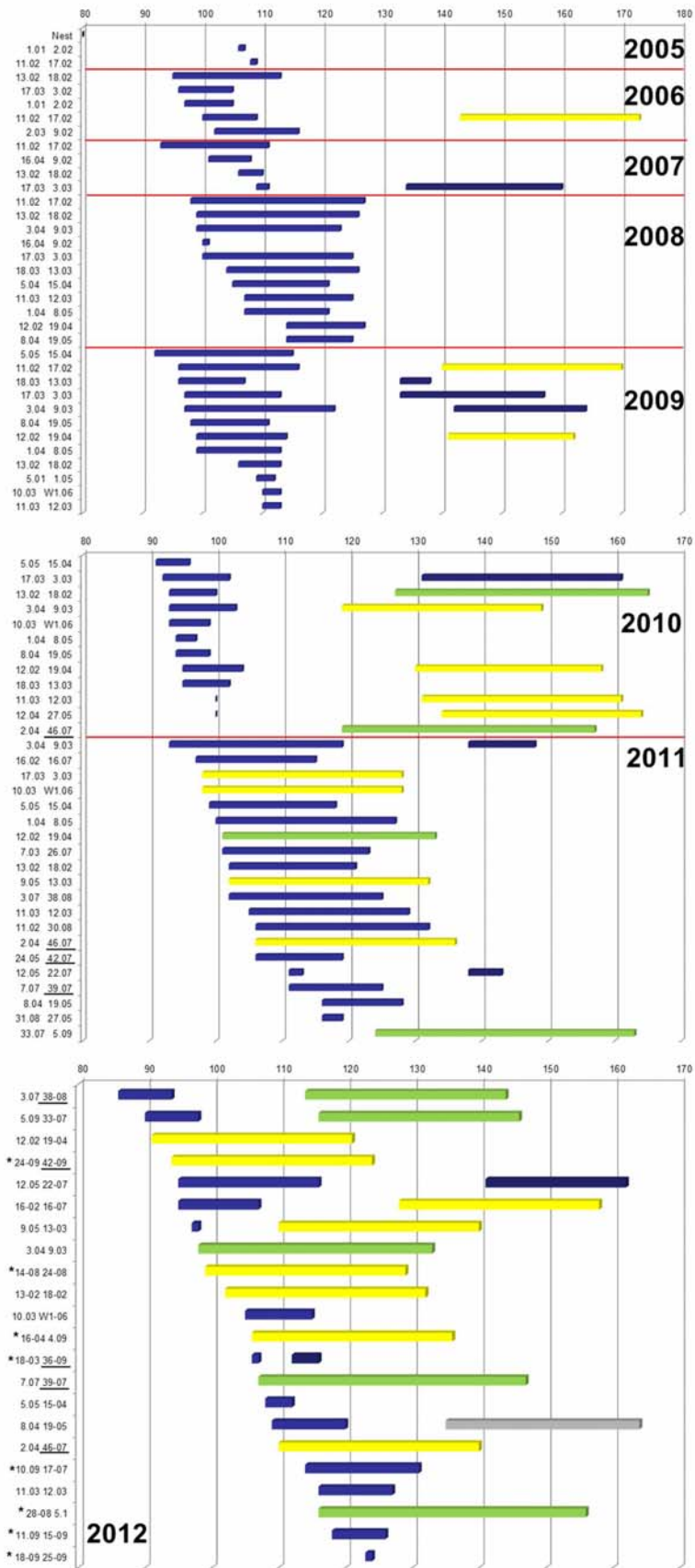


Figure 2



### Nesting phenology of EMP WHCR

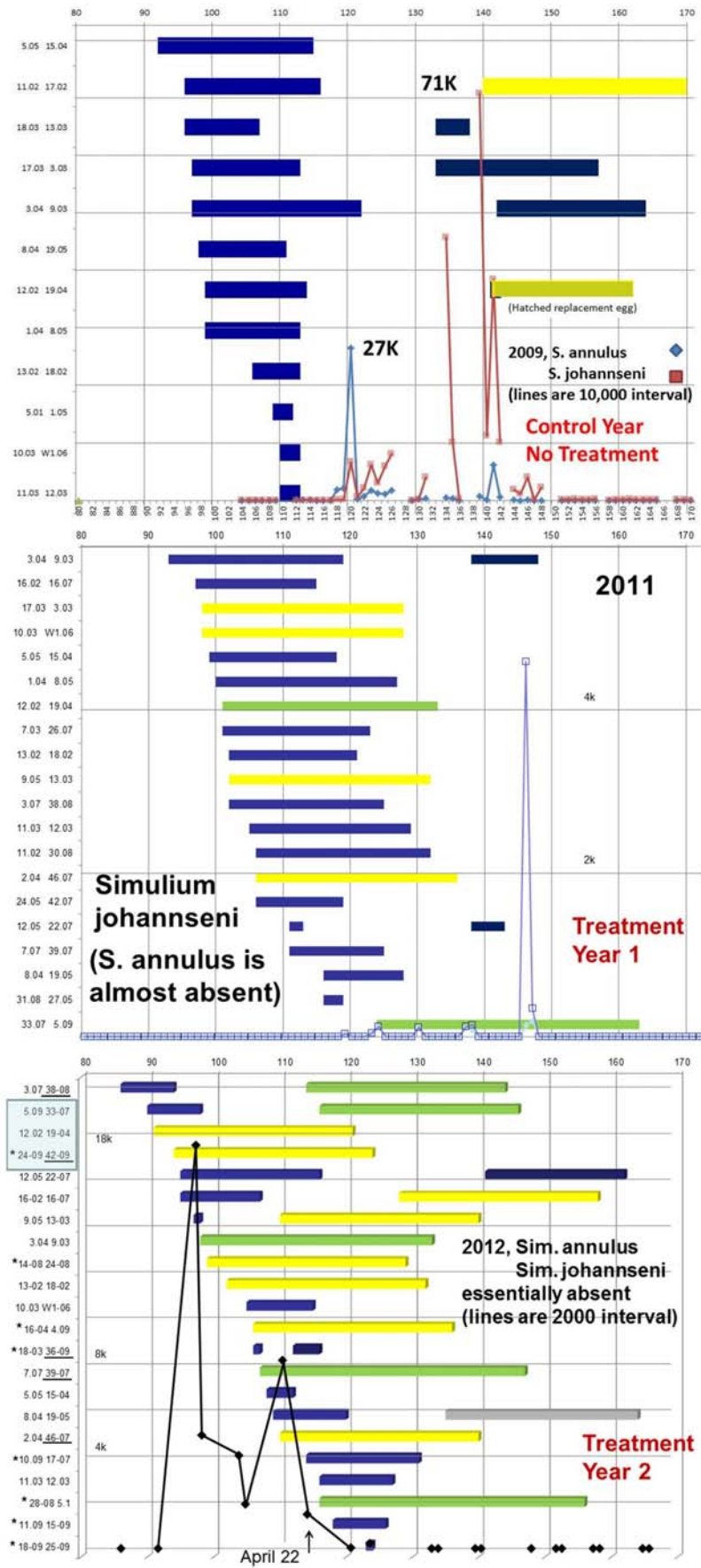


Figure 3

## **COMMUNICATIONS AND OUTREACH TEAM**

The 12<sup>th</sup> year of whooping crane reintroductions by WCEP saw a continued effort by the Communications and Outreach Team to provide internal communications support for WCEP teams and to lead external communications including outreach, education, and media relations.

The team is responsible for and directs all aspects of external communications and public contact on behalf of WCEP. Comprising communications and education specialists and other key partner staff representing WCEP founding members, the Communications and Outreach Team remains essential to building support for the project through education, media relations, and coordinated public outreach efforts. The team is also responsible for maintaining communications within WCEP including facilitation of inter-team communication and dissemination of information within the partnership.

### **WCEP Media Releases/Press Statements**

The Communications and Outreach Team issued press releases and statements during project milestones, including:

- Arrival of 2011 ultralight-led birds at Wheeler NWR
- Spring and fall migrations of WCEP birds
- Departure of the 2012 ultralight-led and DAR fall migrations
- Arrival of the 2012 ultralight-led migration at St. Marks NWR
- Hatching and survival of chicks at Necedah NWR
- Continued releases at Horicon NWR and White River Marsh State Wildlife Area
- Updates on cases involving illegal shootings of whooping cranes

### **Media Coverage**

Spikes in media coverage occurred at several points in 2012: During the delay of the ultralight-led migration in late 2011 and early 2012, during the crane's spring migration, when the ultralight-led and DAR cranes departed on migration, the arrival of birds at wintering locations, and the hatching and survival of chicks at Necedah NWR.

In an effort to bolster media outreach, WCEP, in conjunction with the Wisconsin Department of Natural Resources, developed a list of over 900 media contacts in Wisconsin. These contacts were verified, corrected as needed, and then posted on the WCEP Wiki for partner use.

### **Increasing Outreach Opportunities**

Horicon NWR, White River Marsh State Wildlife Area and Wheeler National Wildlife Refuge, serve as newer geographical areas for news dissemination and they provide WCEP with expanded audiences for outreach and education.

WCEP also focused on expanding outreach to out-of-state partners and audiences via:

- Updating the list of state and federal contacts in states along the flyway and disseminating updates and information to these contacts periodically
- Putting news releases and updates on Facebook and Twitter
- Expanding the WCEP media contact list to include other states along the flyway
- Beginning work on a rapid-feed method of disseminating breaking news releases in states in partnership with Operation Migration during their annual migration.

## **Education and Outreach Programs and Events**

Education continues to be a key component of the Communications and Outreach Team's efforts. The whooping crane reintroduction project has offered a strong opportunity to inform and motivate students along the flyway about cranes and wetland conservation. The migration of these birds highlights the dependence of cranes and other wildlife on wetlands along the migration route, so the decisions and conservation outlook of future generations are critical to the survival of these cranes. Similarly, the Communications and Outreach Team is working to develop habitat management guidelines that benefit crane and wetland conservation for current landowners and managers along the flyway.

The Communications and Outreach Team delivered presentations throughout the year at partner organizations, schools, universities, conservation and birding clubs, professional conferences, birding festivals, civic organizations, and zoos. Outreach representatives distribute education materials, including brochures and curricula, which help interpret crane migration, behavior and ecology. In addition to presentations, the team also participated on other outreach activities such as radio and TV interviews and live chats.

The Wisconsin Department of Natural Resources, as part of the 40<sup>th</sup> anniversary celebration of Wisconsin Endangered Species Law, created a new whooping crane page ([dnr.wi.gov/news/features/feature.asp?id=2&article=11](http://dnr.wi.gov/news/features/feature.asp?id=2&article=11)) that highlights many aspects of the bird's biology and the WCEP program. This page will be used in the future to bolster the current Wisconsin Department of Natural Resources' whooping crane pages.

Operation Migration and the WCEP program was the focus of this year's National Fish and Wildlife Foundation (NFWF)/ Southern Company Power of Flight program. The NFWF Chairman and other staff toured the whooping crane project sites in Wisconsin and developed materials and a video that highlighted the project ([nfwf.org/AM/Template.cfm?Section=Who\\_We\\_Are&CONTENTID=25952&TEMPLATE=/CM/HTMLDisplay.cfm](http://nfwf.org/AM/Template.cfm?Section=Who_We_Are&CONTENTID=25952&TEMPLATE=/CM/HTMLDisplay.cfm)). The focus afforded increased outreach opportunities including meetings with national conservation leaders and U.S. Secretary of the Interior Ken Salazar.

The International Crane Foundation installed cameras at their whooping crane chick-rearing facility. Online viewers and visitors to the International Crane Foundation are able to watch live streaming video of whooping crane chicks being raised for WCEP's Direct Autumn Release project ([www.cranechickcam.org](http://www.cranechickcam.org)).

Environmental education accomplishments in 2012 included the continued partnership with Journey North to extend educational outreach efforts into schools throughout North America. Journey North is an internet-based education project that links students across North America to track wildlife migration and seasonal change, including WCEP cranes' status and general locations during the fall and spring migrations. Journey North reaches more than 997,000 students at 48,000 sites and receives over a million page views a month during migrations.

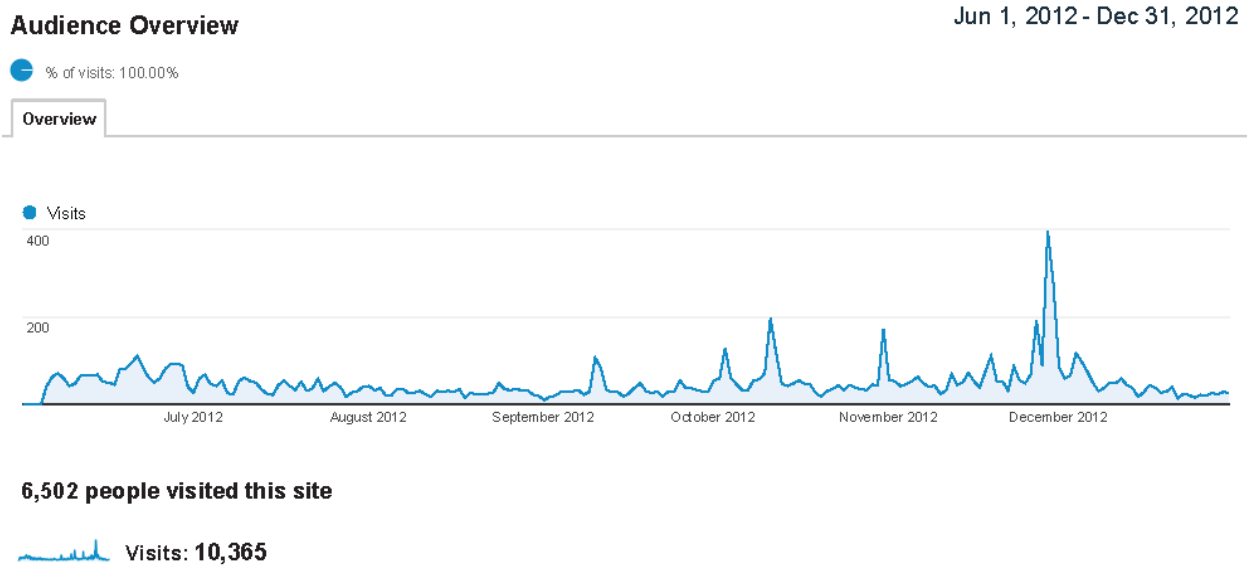
WCEP partners participated in a number of regional and national outreach festivals in 2012, reaching approx. 15,000 people. Events attended included the Port Aransas Whooping Crane Festival, Texas; Wisconsin Whooping Crane Festival; Bald Eagle Days, Wisconsin; Wisconsin Wetlands Association Annual Conference; International Migratory Bird Day, Florida;

Homosassa Seafood Festival, Florida; Sauk County Earth Day Festival, Wisconsin; Rivers and Wildlife Festival, Nebraska; and the St. Marks NWR Wildlife Heritage and Outdoors Festival, Florida.

Other education and outreach activities included interpretive tours and education programs at partner facilities, the International Crane Foundation and Operation Migration crane cams, and ultralight flyover events. The Communications and Outreach Team also continues to maintain the whooping crane trunk and education manual for school and other group use ([dnr.wi.gov/files/PDF/pubs/ER/ER0661.pdf](http://dnr.wi.gov/files/PDF/pubs/ER/ER0661.pdf)).

### WCEP Website

The WCEP website ([www.bringbackthecranes.org](http://www.bringbackthecranes.org)) and related partner websites continue to be effective and efficient means of communicating up-to-date information to large numbers of stakeholders, news media, students, and the general public. One tracking project initiated in May 2012 was installing Google Analytics onto the WCEP website. From June 1 to December 31 the website had 10,365 visits, 6,502 of which were by unique visitors. Figure 1 below depicts site visits by day over that period. Visits appear to peak around migration periods.



**Figure 1:** WCEP website visits June 1-December 31, 2012

### WCEP Social Media Sites

Social media sites provide WCEP with an additional tool to better reach new and existing audiences about the project and its partners. The WCEP Facebook page ([facebook.com/WhoopingCraneEasternPartnership](https://www.facebook.com/WhoopingCraneEasternPartnership)) was launched in 2011. In 2012, the Communications and Outreach Team made a concerted effort to boost WCEP’s Facebook use and presence. The primary materials posted to the WCEP Facebook Page were news releases and WCEP partner items of interest (often cross-posted between partner Facebook pages). Through increased usage and exposure, WCEP was able to increase the number of “likes” the page had received from 123 on 1/1/12 to 395 on 12/31/12. “Likes” are a useful metric to determining the amount of potential overall exposure a page has.

WCEP also began actively using Twitter ([twitter.com/bringbackcranes](https://twitter.com/bringbackcranes)) in 2012. In an effort to continue to expand outreach, WCEP is actively following numerous Twitter feeds that are similar in scope and nature to WCEP's. The Communications and Outreach Team primarily utilized Twitter to disseminate news releases (an ever-expanding use of Twitter) and to send out important updates and breaking news items.

In addition to Facebook and Twitter, the Communications and Outreach team initiated a dedicated WCEP Flickr site ([flickr.com/photos/wcep1](https://www.flickr.com/photos/wcep1)) in order to provide a central location to post and disseminate photos pertaining to the reintroduction project. In previous years, WCEP had relied on utilizing a portion of a U.S. Fish and Wildlife Service Flickr page. The Monitoring and Management Team often receives many high-quality photos from the public that are available for WCEP and others to use as well as the countless photos taken by partners during various activities. While these photos were ostensibly available from different sources, there was not an easy, effective, and central means with which to display them or provide them for use. Now, with Flickr, the Communications and Outreach Team can simply point media and the public to the site, which provides the photos for download and contains crediting information as needed.

2012 also marked the end of the WCEP blog site. The site had not been kept up to date and the Communications and Outreach Team decided that this mechanism of communication was not useful for our purposes. No plans are in place to replace it and we will instead focus on other social media sites for communications and outreach.

### **Hunter Education and State Hunting Seasons**

The Communications and Outreach Team worked on developing education and outreach materials for states that have or are proposing hunts on species that are similar to whooping cranes. These materials are designed to mitigate potential threats via accidental shootings through identifying hunter education needs and management options.

### **Landowner outreach regarding *Bti***

In collaboration with the WCEP Research and Science Team, the Communications and Outreach Team developed and distributed a letter to Wisconsin landowners in the *Bti* treatment areas informing them of the whooping crane nesting studies/monitoring and *Bti* study.

### **WCEP Wiki**

To provide a transparent and effective information sharing structure for the partnership, the Communications and Outreach Team continued to develop the WCEP intranet site (Wiki). The Wiki serves as a repository for WCEP information that is accessible to all WCEP members.