

A Species on the Brink: Whooping Crane Recovery

by Joe Duff and Elaine Secord

Photos: © Operation Migration

Cranes have existed for 60 million years. However, by the winter of 1945, the total Whooping Crane population had dwindled to just 21 birds. Whooping Cranes were on the verge of extinction. Sixty years later they remain an endangered species, but thanks to years of innovative and collaborative efforts, they could be poised for a dramatic and surprising comeback. The inspiring return of Whooping Cranes is due in large part to the tireless efforts, investments, and resourcefulness of countless individuals and organizations. Today, a reintroduction program is bringing these birds back to the eastern part of their historic range for the first time in over a century.

Whooping Cranes are extraordinary and majestic birds that stand 1.5 metres (five feet) high and have wingspans of 2 metres (six feet). They once nested throughout a large area that extended from Ohio to Great Slave Lake, Northwest Territories. From an estimated historical level of over 10,000 birds, global Whooping Crane numbers dwindled to approximately 1500 birds by the late 1800s as a result of hunting, egg collection, and habitat loss to agriculture. By 1941 there were only 21 Whooping Cranes left in the world – 6 of them in a non-migratory population in Louisiana, and the rest in a migratory flock breeding in Canada's Wood Buffalo National Park (in Northwest Territories and northern Alberta) and wintering at the Aransas National Wildlife Refuge on the Gulf Coast of Texas.

Since the late 1940s, when a hurricane wiped out the Louisiana population, the Wood Buffalo-Aransas (WB-A) population has supported the last wild Whooping Cranes. With the sole remaining group limited to one breeding area and one wintering area, a single catastrophic event

could eradicate the entire species from the wild.

Whooping Cranes generally mate for life and are known for their unique courtship dance of leaps, bows, and the ruffling of feathers. They breed in marshes and shallow ponds, constructing nests of bulrush, sedge, or cattail. The risk to the species is exacerbated by their slow rate of reproduction. Whooping Cranes may not begin to breed until they are five years or older; each pair produces two eggs in a clutch, and most often only one chick will fledge. In 1967, the U.S. Fish and Wildlife Service (USFWS) and the Canadian Wildlife Service launched the first Whooping Crane captive breeding program. Eggs from Wood Buffalo National Park were transported to the Patuxent Wildlife Research Center in Laurel, Maryland, with the goal of rearing additional birds for release into the wild.

In the early 1970s, the International Whooping Crane Recovery Team was formed to help safeguard the species from extinction. Part of the recovery plan was to establish two additional flocks that were geographically separate, so that disease or natural disaster would not affect the entire population. Conservationists had long wished to establish a migratory flock separate from the WB-A population, but they faced a daunting challenge. Like many migratory birds, Whooping Cranes discover their flyways by following their parents. Who could teach captive-reared Whooping Cranes their migration route?

Researchers first experimented in the 1980s and 1990s by placing Whooping Crane eggs in Sandhill Crane nests with the hope of starting a new migratory population that would winter in New Mexico and breed in Idaho and Wyoming. Raising captive birds so they maintain their natural instincts



Whooping Cranes breed in shallow marshes where fish, crustaceans, and insects form a large part of their diet. Les Grues blanches nichent dans des marais peu profonds où le poisson, les crustacés et les insectes représentent une large part de leur régime alimentaire.

and learn the skills needed to survive in the wild is a delicate, challenging task. The young Whooping Cranes successfully learned survival skills from their foster parents, but unfortunately they did not ever pair off and breed – likely because their imprinting resulted in a desire to mate only with Sandhill Cranes.

In 1993, the recovery team established a new population that would remain in central Florida year-round using offspring from captive breeding facilities. The new non-migratory flock in the Kissimmee region began with the 1993 release of 14 captive-raised Whooping Cranes. This flock now includes over 50 birds. Although the Florida population has been slow to reproduce on its own, this group has fledged a total of eight chicks in the wild – including a record four chicks in 2006.

In 2001, an attempt to establish a second, but migratory population was



**A crane puppet is used to teach a young chick how to eat.
On utilise une marionnette de Grue blanche pour montrer à un jeune oisillon comment s'alimenter.**



**Workers don cloaks and hoods to ensure that young Whooping Cranes have minimal exposure to humans.
Les travailleurs enfilent cape et capuchon afin de s'assurer que les jeunes Grues blanches sont exposées le moins possible aux humains.**



A flock of ten Whooping Cranes follows the ultralight from Necedah, Wisconsin, on their first journey to their wintering grounds in Florida. Une bande de dix Grues blanches suit l'ultra léger à partir de Necedah, Wisconsin, lors de leur première migration vers leur aire d'hivernage en Floride.

launched. This flock would migrate between central Wisconsin and Florida's Gulf Coast. This time the chicks would be imprinted on captive Whooping Cranes and a unique solution was being explored for teaching the birds their migration route.

In 2000, the USFWS approached the Canadian team of Joe Duff and Bill Lishman, who had successfully led a flock of Canada Geese from Ontario to Virginia in 1993 using ultralight aircraft (as recounted in the 1996 movie *Fly Away Home*). Lishman and Duff founded the non-profit organization Operation Migration in 1994 and had spent almost a decade researching and developing a "mechanical parenting technique" for endangered migratory species, including captive-bred Whooping Cranes.

Conducting a successful reintroduction of an endangered species is a monumental undertaking and beyond the scope of one organization, so the Whooping Crane Eastern Partnership

(WCEP) evolved. It is an ad hoc association of nine agencies each providing a necessary element to accomplish a common goal. From an outreach standpoint, it is also a shining example of international cooperation between multi-level government agencies, non-profit organizations, and private individuals.

Within the partnership there are six sub-teams that deal with issues as diverse as veterinary care and wildlife regulations. The first step was to find a site suitable for the reintroduction of the breeding population, and to identify a suitable wintering area. The new route had to be in the east to avoid any possibility of mixing with the Wood Buffalo/Aransas flock. Reintroducing birds in eastern Canada to winter in the U.S. added many layers to an already complex project. In the end, the extensive wetlands of Necedah National Wildlife Refuge in Wisconsin were chosen as the reintroduction site, while Chassahowitzka National Wildlife Refuge

in Florida was selected as a good potential wintering area. There are seven states and 1250 miles between these two locations.

Reintroducing an endangered species requires a number of permits from many jurisdictions, particularly if its range includes half the country. In the U.S., the Lacey Act prohibits the transport of protected fauna across state lines, the Canada/U.S. Migratory Bird Act adds another element of restriction, and the Endangered Species Act protects the birds as well as their habitat. It was unlikely that all the birds would confine themselves entirely to the wildlife refuges on both ends of their migration route, and some landowners along the way were justifiably concerned that they would lose control of their property if it became the new home for a reintroduced, endangered species.

Several years were spent conducting migration studies and trial runs with Sandhill Cranes before the first release of Whooping Cranes in 2001. Each year, chicks were hatched and reared at the Patuxent Wildlife Research Center where they were imprinted on adult Whooping Cranes. Because an instinct to avoid humans would be essential for survival in the wild, every effort was made to retain their natural fear of people by minimizing human contact. At Patuxent, the handlers follow a strict isolation-rearing protocol involving the use of puppets and crane costumes. No talking is permitted near the birds, and as much as possible, the birds are shielded from caretaking activities, human structures, and equipment.

Familiarization with their ultralight aircraft 'parents' begins early, with newly hatched chicks and even pre-hatching eggs exposed to recordings of aircraft engine sounds. Before they fledge, the Whooping Crane "colts" are shipped via private aircraft to the Necedah National Wildlife Refuge, Wisconsin, for further conditioning and flight training.

On 17 October 2001, an ultralight and eight Whooping Cranes set out from Necedah for their first journey south to Florida's Chassahowitzka National Wildlife Refuge. One of the chicks died that month when it hit a power line during the trip, and two others were killed by a bobcat in December, shortly after arriving in Florida. The remaining five birds survived the winter and returned on their own to central Wisconsin the following spring.

Each fall since 2001, project biologists and pilots have trained and led additional groups from Necedah to Chassahowitzka. Each spring in increasing numbers, these new migratory Whooping Cranes find their own way back north to Wisconsin. In 2005, the project added a "direct autumn release," whereby juveniles learn the fall migration route by following older members of the flock. Both of these release techniques will continue for the foreseeable future.

May 2006 marked the first time chicks hatched from eggs produced by the Wisconsin/Florida flock. In all, five Whooping Crane pairs nested in Wisconsin in 2006, but due to inexperience, the first-time parents abandoned the nests before their eggs hatched. Two of the abandoned eggs were recovered and taken to the Patuxent Wildlife Research Center, where they hatched. Subsequently, one of the Necedah pairs renested and successfully hatched two chicks – the first wild hatchlings in the United States in over 100 years.

The causes of nest abandonment in Wisconsin will be studied in 2007 using video equipment. Scientists are also scrutinizing the genetic diversity of the migratory flock. If the Whooping Crane Eastern Partnership is to reach its goal of a self-sustaining population of 125 birds with 25 breeding pairs in eastern North America, the reintroduced cranes will need to increase their reproductive success in the years to come.

As of 30 September 2006, there were 86 individuals in the Wisconsin/Florida migratory population. On 5 October, an additional 18 captive-reared young set out from Necedah, following four ultralights for their first journey south.

Whooping Cranes face a variety of natural and human hazards. Predation, bad

Late Breaking News



Eighteen juvenile Whooping Cranes successfully completed their first migration from Wisconsin to Florida in late 2006. Tragically, 17 of them perished in the violent storms that hit central Florida on February 2, 2007. A single severe weather event can still have a devastating impact on the Whooping Cranes. To ensure the ultimate survival of this endangered species, the establishment of geographically separate breeding populations is essential.

weather, disease, habitat loss, and fluctuations in water levels and food availability are ever-present threats. Unlawful hunting and accidental shooting incidents (where Whooping Cranes were mistaken for Sandhill Cranes) have occurred in recent years and perpetrators are subject to heavy fines and even jail time.

Each migration is fraught with obstacles and perils. Collisions with power lines are the leading cause of death of fledged Whooping Cranes. As well, suitable resting sites are being lost to development, making migration stopovers more difficult.

In his "Whooping Crane Recovery Activities" report for April-September 2006, Whooping Crane Coordinator Tom Stehn of the USFWS outlines several land development threats to the species. Construction is imminent near the Florida wintering grounds for a new 776-house subdivision. A growing demand for water is threatening food supplies and freshwater inflows at Aransas, and construction of power lines continues in the migration corridors.

The Whooping Crane Eastern Partnership faces its own challenges, especially in the form of budget shortfalls. The annual project budget must cover a number of ambitious activities such as census and monitoring flights, shipping of eggs between captive facilities, genetic testing, and the ultralight aircraft migration flights. Finding adequate funding has been an ongoing difficulty for project partners, who must be increasingly creative to ensure their work will continue.

The remarkable comeback of the Whooping Crane is viewed by many as a symbol of hope for other endangered species. Canadian and U.S. agencies have been collaborating for 60 years to prevent Whooping Crane extinction. The global Whooping Crane population has rebounded from a one-time low of less than 20 birds, and now numbers close to 500 birds –

including 145 in captivity, well over 200 in the WB-A population, over 50 in the central Florida non-migratory group, and 90 or more in the Wisconsin/Florida migratory flock at the time of writing. Conservation efforts appear to be succeeding, but only time will tell. If the reintroduced eastern migratory flock can become fully self-sustaining, the sky is the limit for the Whooping Crane. To follow Operation Migration's progress and to support this important work, please visit www.operationmigration.org.

Joe Duff is the co-founder and CEO of Operation Migration.



A wild adult Whooping Crane can grow to 1.5 metres tall, have a wing span of 2 metres, weigh up to 7 kilograms, and can live 25 years. Un Grue blanche sauvage adulte peut atteindre une taille de 1,5 mètres, avec une envergure d'ailes de 2 mètres, peser jusqu'à 7 kilogrammes et vivre 25 ans.

Une espèce sur la bonne voie : rétablissement de la Grue blanche

Les grues existent depuis 60 millions d'années. Cependant, à l'hiver de 1945, la population totale de Grues blanches avait chuté à 21 oiseaux seulement et l'espèce était au seuil de l'extinction. Soixante ans plus tard, la Grue blanche demeure une espèce en voie de disparition, mais, grâce à des années d'efforts novateurs et de collaboration, sa population montre des signes de rétablissement. Aujourd'hui, un programme de réintroduction ramène ces oiseaux dans la partie orientale de leur aire de répartition historique pour la première fois depuis plus d'un siècle.

Depuis la fin des années 1940, quand un ouragan a balayé toute la population de la Louisiane, le parc national Wood Buffalo dans le nord de l'Alberta et l'Aransas National Wildlife Refuge sur la côte du Texas ont accueilli les dernières Grues blanches sauvages. L'unique population restante se trouvant restreinte à une aire de reproduction et une aire d'hivernage, une seule catastrophe naturelle pouvait entraîner une éradication de l'espèce à l'état sauvage.

Au début des années 1970, on a créé l'Équipe internationale de rétablissement de la Grue blanche afin d'aider à sauver cette espèce de l'extinction. Le plan de rétablissement visait en partie à établir deux autres populations géographiquement distinctes, de sorte que la maladie ou une catastrophe naturelle ne puissent pas toucher l'ensemble de la population. Les spécialistes en conservation ont longtemps souhaité établir une population migratrice distincte de la population de l'ouest, mais ils se sont heurtés à un défi de taille. À l'instar de nombreux oiseaux migrateurs, la Grue blanche découvre sa route de migration en suivant ses parents. Qui pouvait montrer aux Grues blanches élevées en captivité leur route migratoire?

En 1993, l'équipe de rétablissement a établi deux nouvelles populations en utilisant la progéniture de Grues blanches élevées en captivité. Le premier troupeau devait demeurer dans le centre de la Floride à l'année longue, alors que le deuxième migrerait entre le centre du Wisconsin et la côte du golfe du Mexique, en Floride.

Le nouveau troupeau de grues non migratrices de la région de Kissimmee dans le centre de la Floride a pris naissance en 1993, année où l'on a relâché 14 Grues blanches élevées en captivité. Ce troupeau compte maintenant plus de 50 oiseaux. Bien que la population de la Floride ait pris beaucoup de temps à se reproduire de façon autonome, ce troupeau a produit au total huit oisillons en milieu sauvage, y compris un nombre record de quatre oisillons en 2006.



Grues blanches volant vers leur aire de reproduction au Canada. Whooping Cranes winging their way to their breeding grounds in Canada.

Les préparatifs visant l'établissement du nouveau troupeau migrateur ont également commencé en 1993. Cette fois les oisillons devaient être imprégnés par des Grues blanches captives et l'on explorait une méthode unique pour leur montrer leur route de migration.

Le service de la faune des États-Unis (USFWS) a pris contact avec l'équipe canadienne formée de Joe Duff et Bill Lishman, qui avaient réussi à mener une bande de Bernaches du Canada de l'Ontario à la Virginie en 1993 à l'aide d'un aéronef ultra léger (comme on le raconte dans le film *L'envolée sauvage* produit en 1996). Lishman et Duff ont fondé en 1994 une organisation à but non lucratif appelée Operation Migration afin d'élaborer une « technique mécanique d'élevage des jeunes » pour les Grues blanches élevées en captivité. On a passé plusieurs années à mener des études de migration et des voyages d'essai avec des Grues du Canada avant le premier lâcher de Grues blanches en 2001.

Le 17 octobre 2001, un ultra léger et huit Grues blanches ont quitté Necedah pour leur premier voyage vers le sud de la Floride, dans le Chassahowitzka National Wildlife Refuge. L'un des jeunes est mort le même mois après avoir frappé une ligne d'énergie électrique pendant le voyage et deux autres ont été tués par un lynx roux en décembre, peu après leur arrivée en Floride. Les cinq autres oiseaux ont survécu tout l'hiver et sont retournés par leurs propres moyens dans le centre du Wisconsin le printemps suivant.

Chaque automne depuis 2001, les biologistes chargés du projet et les pilotes ont formé de nouveaux groupes et les ont conduits de Necedah à Chassahowitzka. Tous les printemps, ces nouvelles Grues blanches

migratrices retournent d'elles-mêmes en nombre croissant vers le nord dans le Wisconsin. En 2004, on a tenté de faire un « lâcher direct en automne », alors que les juvéniles relâchés apprenaient leur route de migration en suivant les membres du groupe plus âgés. Dans un avenir prévisible, on continuera de recourir à ces deux techniques de lâcher.

Au 30 septembre 2006, la population migratrice Wisconsin/Floride comptait 86 oiseaux. Le 5 octobre, 18 autres jeunes élevés en captivité ont quitté Necedah en suivant quatre ultra légers pour effectuer leur premier voyage vers le sud.

Le remarquable retour des Grues blanches est perçu par de nombreuses personnes comme un symbole d'espoir pour d'autres espèces en voie de disparition. Des organismes canadiens et américains collaborent depuis 60 ans pour prévenir l'extinction de la Grue blanche. La population mondiale de Grues blanches est passé d'un minimum record de moins de 20 oiseaux à un effectif actuel de près de 500 oiseaux, incluant 145 oiseaux en captivité, bien plus de 200 dans la population de l'ouest, plus de 50 dans le troupeau non migrateur du centre de la Floride et 90 ou plus dans la bande migratrice Wisconsin/Floride. Les efforts de conservation semblent avoir porté fruit, mais seul le temps le confirmera. Si le troupeau migrateur réintroduit dans l'est devient entièrement autosuffisant, il n'y aura plus de limites pour la Grue blanche. Pour suivre les progrès d'Operation Migration et pour soutenir cette initiative importante, veuillez visiter le site www.operationmigration.org.