

4. RECOVERY GOAL AND STRATEGY

The AWBP is characterized by low numbers, slow reproductive potential, and limited genetic diversity. A stochastic, catastrophic event could eliminate or greatly reduce this population, especially due to its limited summer and winter habitat distribution. To safeguard the species from possible extinction, the IWCRT recommended the establishment of multiple self-sustaining wild whooping crane populations in North America. The IWCRT goal involves two stages; initially, reclassification of the species to threatened and, ultimately, removal from the Federal List of Threatened and Endangered Species. The recovery strategy is three-fold and involves the protection and enhancement of the AWBP, reintroduction and establishment of separate self-sustaining wild populations within the species' historic range (but geographically separate from the AWBP), and maintenance of a captive breeding population.

The International Whooping Crane Recovery Plan (CWS & USFWS, 2006) set forth two primary objectives and measurable criteria that will allow the species to be reclassified (downlisted) as a threatened species. The first objective calls for the establishment and maintenance of wild self-sustaining whooping crane populations that are genetically stable and resilient to stochastic environmental events. This objective will be met when 1) the AWBP is maintained at a minimum of 160 individuals encompassing 40 breeding pairs, and 2) two self-sustaining geographically separate populations individually contain 100-120 cranes encompassing 25-30 breeding pairs. The two additional populations may be migratory or non-migratory. However, all populations must be self-sustaining for a decade at the designated levels.

The captive breeding population will continue to supply crane chicks for the reintroduction programs. Eventually, reproduction by reintroduced birds and their offspring will result in self-sustaining wild populations. In the event a second and third wild population cannot become self-sustaining, the AWBP must be self-sustaining and remain above 1,000 individuals encompassing at least 250 breeding pairs before downlisting.

The second objective is to sustain a genetically stable captive population to ensure against the species' extinction. Maintenance of 153 captive whooping cranes, including a minimum of 21 breeding pairs, will meet this objective. Genetic analysis suggests these population numbers can maintain 90 percent of the genetic material for 100 years (Jones & Lacy, 2006).

Due to the status and biology of the species, an estimated 30 years or more will be needed to reach population goals. Current reproduction rates suggest it will take at least 10 years to build a population of more than 100 individuals. These individuals must reach breeding age (three through five years) and produce enough young to become self-sustaining for a decade to meet downlisting criteria.

During this interim, new challenges may arise. In assessing population goals, consideration will be given to 1) the conservation biology of very small populations, including a determination of effective population size to maintain long-term genetic viability, and 2) the consequences of stochastic and catastrophic events on population survival. Information gathered through recovery actions will be incorporated into future population viability analyses as the population approaches its downlisting goals. Criteria for delisting (removal from the Federal List of Endangered and Threatened Species) will be established, and the recovery strategy will be revised as needed.

4.1 LEGAL ASPECTS OF RECOVERY

On June 26, 2001, the USFWS published a final rule in the *Federal Register* (FR66:123: 33903-33917) designating a nonessential experimental population (NEP) of whooping cranes in the eastern U.S. This action finalized the proposed rule first published on March 9, 2001 and cleared the way for the release of whooping cranes in the eastern U.S (the future EMP). The designation of this reintroduced population as a NEP was according to section 10(j) of the Endangered Species Act of 1973 (the act), as amended. The geographic boundary of the NEP includes the states of Alabama, Arkansas, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, North Carolina, Ohio, South Carolina, Tennessee, Virginia, West Virginia, and Wisconsin (Fig. 4).

Section 10(j) is designed to increase flexibility in managing an experimental population by treating the population as threatened, regardless of the species' designation elsewhere in its range. Threatened designation gives more discretion in developing and implementing management programs and special regulations. Where experimental populations occur, certain endangered species protections may no longer apply. This can help reduce local opposition to reintroductions based on concerns about restrictions and prohibitions on federal and private activities.

4.1.1 Protections

Under the act, species listed as endangered or threatened are afforded protection primarily through the prohibitions of section 9 and the requirements of section 7. Section 9 of the act prohibits the take of a listed species. "Take" is defined by the act as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Section 7 of the act outlines the procedures for federal interagency cooperation to conserve federally listed species and protect designated critical habitats. It mandates all federal agencies to determine how to use their authorities to further the purposes of the act to aid in recovering listed species. It also states that federal agencies will, in consultation with the USFWS, insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of designated critical habitat. Section 7 of the act does not affect activities undertaken on private lands unless they are authorized, funded, or carried out by a federal agency.

For the purposes of section 7, if any NEP-designated cranes are located outside of a National Wildlife Refuge or National Park, they are treated as a species proposed for listing, and the agency is not required to consult with the USFWS. For actions on National Wildlife Refuges or National Parks, NEP-designated cranes are treated as threatened and the consultation requirements of section 7(a) (2) of the act apply.

Due to the lack of the section 7 requirement, fewer conflicts with activities on non-federal lands are likely to occur. In addition, the special rule associated with the NEP of eastern whooping cranes specifically allows for the take of the species, provided such take is accidental and incidental to an otherwise lawful activity. Some typical activities that would be exempted under the special rule include agricultural practices, pesticide application, water management, construction, recreation, trapping, or hunting, provided such activities are in full compliance with all applicable laws and regulations (see Legal Enforcement, Section 9).

4.1.2 Geographic Scope

One unique aspect of section 10(j) experimental populations is that they are defined solely by geographic boundaries (Fig. 4). Experimental populations are established only where the

natural wild populations will not interact with members of the experimental population. In the case of whooping cranes, the likelihood of an AWBP whooping crane entering the migratory eastern population NEP area is very low. However, if a whooping crane enters or leaves the NEP area, the individual acquires the listed status prevailing in that geographic area.

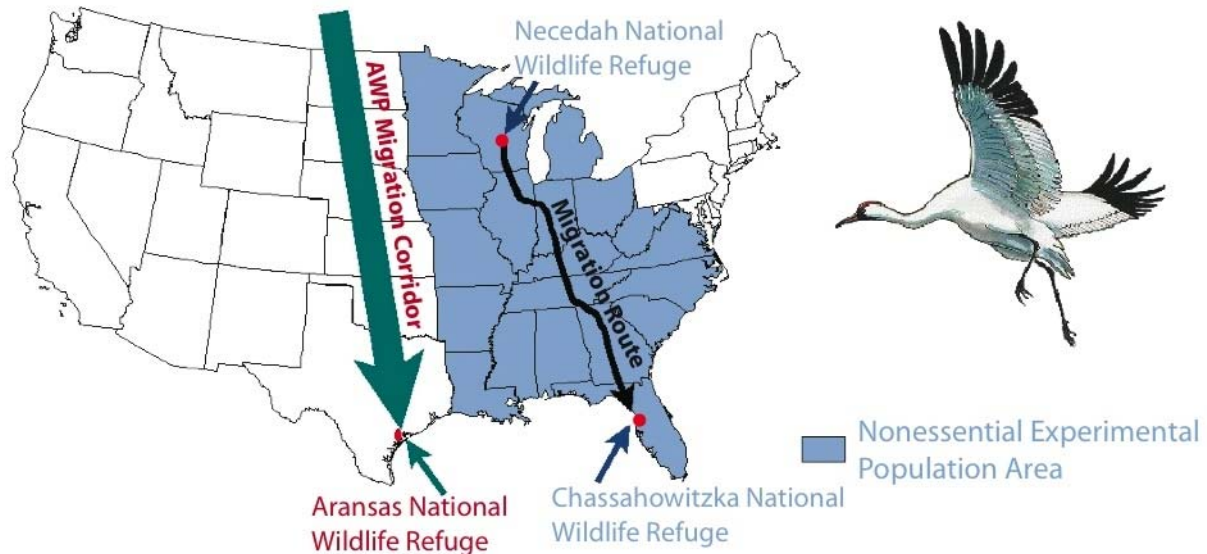


Figure 4. Eastern U.S. nonessential experimental population (NEP) area, showing reintroduction site, migration route and wintering site. Also shown are approximate migration and wintering locations of wild Aransas-Wood Buffalo population (AWBP) of whooping cranes.

For example, if an AWBP whooping crane strays into Wisconsin it takes on the NEP status, and no longer is endangered (its status in North Dakota). Conversely, if an EMP crane flies to North Dakota, it acquires the status of whooping cranes in that geographic area, or endangered. The potential for this scenario was recognized during the development of the NEP rule. In the rule, the USFWS committed to removing any NEP-designated migratory eastern birds that stray into central flyway states, at the request of the respective state. This alleviated concerns that the presence of introduced whooping cranes could affect hunting or other public activities. In June 2003, three NEP cranes did wander into South Dakota, remaining until mid-August. At the request of the USFWS State Central Flyway Council they were captured and returned to Wisconsin. As a result of this intensive management activity, one bird died from capture myopathy.