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SURVIVAL, MOVEMENTS, SOCIAL STRUCTURE, AND REPRODUCTIVE BEHAVIOR DURING DEVELOPMENT OF A POPULATION OF REINTRODUCED, MIGRATORY WHOOPING CRANES

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Abstract: An effort to reintroduce a migratory population of whooping cranes (*Grus americana*) into eastern North America began in 2001. During 2001-2004, 53 juveniles were released. All chicks were hatched at Patuxent Wildlife Research Center, Maryland, and transferred to Necedah National Wildlife Refuge (NWR), Wisconsin. Chicks were costume/isolation-reared and, with few exceptions, trained to follow ultralight aircraft, which led them to Chassahowitzka NWR, Central Gulf Coast of Florida. All individuals successfully returned to Central Wisconsin during their first spring migration except for the following: 5 individuals that were unable to navigate around Lake Michigan after taking an easterly migration route that terminated in Lower Michigan, and 1 female that did not return to Central Wisconsin until her second spring migration. A spring wandering period, in which yearlings typically explored and settled for several weeks in areas outside Central Wisconsin, followed spring migration. This temporary dispersal was more pronounced in females. Males summered in the core reintroduction area, while females not associated with males were more dispersed. In addition to the Michigan group noted, distant movements included 3 yearling females that summered in South Dakota, 1 female that summered as a yearling in Minnesota and then as a 2-year-old in Michigan, and 3 yearling males that staged in Minnesota in autumn. Many whooping cranes associated with sandhill cranes (*G. canadensis*).

Many older whooping cranes returned to the Chassahowitzka pensite in subsequent fall migrations and then moved inland to winter in freshwater Florida habitats. The 2004-2005 winter was characterized by much greater dispersal than previous winters, with 14 of 34 returning birds wintering in South Carolina, North Carolina, or Tennessee. There were 12 mortalities during 2001-2005. These were associated with predation (7), gunshot (2), powerline strike (1), trauma of unknown source (1), and capture myopathy (1, euthanized). Mortalities due to predation resulted from bobcats (*Lynx rufus*) in southeastern U.S. (5), an undetermined predator in Wisconsin (1), and predation in Wisconsin of an adult that was roosting on land because of a fractured tarsus. A protective protocol was effective in reducing potential predation by bobcats at the Chassahowitzka release site after the first winter. During spring 2005, 7 breeding pairs were apparent on or near Necedah NWR. At least 5 of these pairs built nests, and 2 pairs each laid 1 egg. The young, inexperienced pairs did not adequately attend their nests, and neither egg survived. Four other potential pairs were also evident by summer 2005, and prospects were good for increased future reproductive activity.

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Key words: *Grus americana*, reintroduction, reproduction, survival, whooping crane.
