

Sandhill Crane colt survival in northeastern Illinois

By Jeffrey Fox

Birders in northeastern Illinois may have noticed more breeding Sandhill Cranes (*Grus canadensis tabida*) in the past two decades. In fact, from 1980 to 2005, the population of Sandhill Cranes in Illinois rose 33.3 percent annually (Ward, unpub. data). Before 1979, the number of breeding Sandhill Cranes in Illinois was nil. The species had been extirpated circa 1890 (Meine & Archibald 1996). In the 1930s the nearest remnant population consisted of 25 breeding pairs in Wisconsin (Henika 1936).

What explains the extirpation of this wetland- and grassland-dependent species from Illinois?

Overhunting and lax game laws combined with extensive losses of wetland and grassland habitats were likely the dominant factors contributing to the extirpation of breeding Sandhill Cranes in Illinois. Breeding numbers for this species in nearby Wisconsin and Minnesota were likely at least as high as in Illinois in the 19th century, and both of these states lost nearly all their breeding cranes (Roberts 1932, Robbins 1991), though they did not lose as much breeding and wetland habitat compared with Illinois—99.9 percent of the state's 21,992,379 acres of tallgrass prairie and 85 percent of its 8,212,000 acres of wetlands have been lost since 1800 (Dahl 1990; Sampson and Knopf 1994). These habitats were supplanted by aggressive agricultural expansion throughout the 19th and 20th centuries. In light of this trend and concurrent hunting pressures of the late 19th century, it is no mystery why a wetland- and grassland-dependent species such as the Sandhill Crane was extirpated from the state.

How can the cranes' return to Illinois and rapid population increase be explained?

Habitat conversion has typically progressed unabated. Agricultural ambitions have been surpassed by urban/suburban sprawl, facilitating both the conversion of established agricultural lands and the natural habitats that have, thus far, escaped direct agricultural development. For decades this trend has characterized northeastern Illinois, where 22 percent (283,500 acres) of the state's extant wetlands occur (IDNR 2009). Subsequently, native wetland bird populations are in near-universal decline (Table 1). It is ironic that this is also where the largest concentration and focal point of population expansion for the cranes in Illinois occur. How a species that preferentially nests in wetlands appears to be thriving where sympatric avian species are generally declining is unclear.

The study's goal was to explore potential mechanisms behind the apparent success of Sandhill Cranes in northeastern Illinois. The current population of cranes in Wisconsin is 15,000-20,000 (Su et al 2004) – which is both astounding in terms of population recovery from the historic low of the 1930s and the probable source of cranes returning to Illinois in 1979. But are dispersing juveniles from the fringes of an increasing (6.8 percent per year) Wisconsin population (BBS 2007) the primary source of Illinois' increase? Or, in light of observed philopatric behaviors (Tacha et al. 1992), are colts hatched, fledged, and recruited from within northeastern Illinois responsible for the observed population increase?

The inherent difficulty and cost of coordinating captures of adult cranes led us to pursue the latter. Moreover, addressing this question

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All crane photos by Jeffrey Fox.

