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DEMOGRAPHY OF WHOOPING CRANES IN THE EASTERN MIGRATORY POPULATION

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Abstract: The ultimate success of the whooping crane (*Grus americana*) reintroduction to eastern North America rests on adequate demographic performance of the population. We are undertaking a population viability analysis (PVA) of the eastern migratory population in order to evaluate progress toward the fundamental population objective, to better understand the critical demographic thresholds that must be met to fulfill this objective, and, most importantly, to support management decision-making. The initial phase in the PVA development process involves estimation of demographic parameters to be used in later population modeling phases. Multi-state models provide an appropriate analytic framework for estimation, wherein individuals move amongst breeding states across years, conditional on survival. We describe estimated survival and breeding state transition probabilities in this population as a function of age, sex, and rearing and release method. We also consider demographic parameters as a function of genetic indicators, which should inform future decisions about breeding and release in the captive flock. The ability to conduct critical demographic analyses in this flock is dependent on ongoing collection of monitoring data. Periodic re-evaluation of both monitoring and modeling methods in the context of management decision-making will be necessary to ensure that management decisions made regarding this flock are informed by the most reliable available information.

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Key words: demography, *Grus americana*, population viability analysis, reintroduction, whooping crane.