



Patuxent Wildlife Research Center
Science Brief for Resource Managers

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Science Brief PWRC 2003-34

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Length of Stay, Survival, Habitat Use and Migration Characteristics of Fall-Migrant Soras (*Porzana carolina*) on the Patuxent River Marsh as Determined by Radio Telemetry

Description:

The objectives of the study are to investigate aspects of the migrational stopover ecology of fall migrant soras in the freshwater tidal marshes of the Patuxent River, a former famous rail hunting marsh.

Progress to Date:

Fall captures in 1998 were exceptional: 1,118 soras and 90 Virginia rails were captured on 11 trap lines in a 10 week period. Captures in 1999 dropped sharply to about 300, likely the result of severe drought in the eastern U.S. and Canada in fall 1998 and spring 1999. Total rail bandings for the project now approach 4,500. Fifty soras were equipped with 1.8g radio transmitters in 1998 and 54 in 1999. These rails were monitored daily on the study area from early September until departure in late October and November. All but 3 of our radio-tagged soras migrated from the study area in 1998, while 10 soras remained in the marsh in the protracted warm fall of 1999. As recorded throughout the study, most soras initiated nocturnal migration in a 2-hour window beginning 1 hour after sunset. Rails departed on clear star-lit nights, especially those with temperatures dropping into the 30s or lower and accompanied by northerly tail winds; excessive cloud cover precluded migration. Rails did not use land marks in migration but rather took a flight bearing due south. Rails tracked 150 to 200 miles down range exhibited flight speeds of 38 to 58 mph depending on tail wind. Results suggest that once soras leave the Patuxent River study site, they continue to destinations likely in the deep south or the Caribbean Basin. In fall 2000, funding was secured from the Patuxent River Park and NERR to investigate a precipitous decline of wild rice along the Patuxent. Results of an exclosure study revealed the catastrophic loss of rice was due to invasive herbivory by an overpopulation

of resident Canada geese. Dramatic restoration of rice followed two management actions: the implementation of a cooperative management plan that effectively reduced the number of geese through a September resident goose season, and second, the proactive reestablishment of rice through planting and use of protective fencing.

Management Implications:

The major management implication of our findings is the strong ecological tie of migrant soras to the freshwater emergent marsh type as represented by wild rice and associated seed-bearing annual plants, especially smartweeds. Nowhere in the estuarine system of the coastal plain are soras so aggregated during migration. This relationship is underscored further by the paucity of acreage represented by the wild rice marsh type. Clearly a very small percentage of tidal wetlands overall are supporting a majority of the continent's migrant soras. The rich food sources of these marshes insure that soras can fatten and continue migration to the deep South and the Caribbean Basin.

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