

## TEMPORAL COMPARISONS OF GREAT BLUE HERON ROOKERY DISTRIBUTION, ABUNDANCE AND REPRODUCTIVE SUCCESS IN THE LOWER YELLOWSTONE RIVER BASIN

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In response to declining trend information from Montana Audubon Society, Breeding Bird Surveys, and as part of an ongoing effort to assess the status of eastern Montana's non-game wildlife and identify critical habitats, we assessed the distribution and abundance, occupancy and reproductive success of great blue heron (*Ardea herodias*) rookeries within the lower Yellowstone River Basin. We conducted an aerial census of the lower Yellowstone, Tongue and Powder river corridors to document existing rookeries. Rookeries were revisited prior to fledgling abandonment to assess reproductive success. We compared the distribution, abundance and reproductive success of rookeries along the lower Yellowstone River to data from similar surveys conducted in 1976 and 1988. Great blue heron rookery abundance and reproductive success were also compared to river flows during corresponding time periods. Between 1976 and 1988, active rookery abundance increased from nine to 18 but declined back to nine by 2008. The average number of occupied nests per active rookery for each time period was 14 in 1976, 16.8 in 1988 and 12.1 in 2008. Rookery distribution showed temporal variance, however, some areas supported rookeries during all survey periods. Reproductive success data were not available for 1976. Comparisons between 1988 and 2008 showed that the percentage of reproductively successful rookeries in 1988, when river flows remain primarily below average, was 61 percent. During 2008, when river flows were consistently above average, the percentage of successful rookeries decreased to 44 percent. Combined data suggested that great blue heron rookery abundance and reproductive success along the lower Yellowstone River fluctuates temporally in response to various ecological factors, yet to be fully understood.