
DISTRIBUTION OF BREEDING DUCKS RELATIVE TO HABITAT CHARACTERISTICS IN THE PRAIRIE POTHOLE REGION OF NORTH CENTRAL MONTANA

Sean P Fields*, USFWS, Region 6 Division of Migratory Birds, Great Falls, MT

Jay J. Rotella, Department of Ecology, Montana State University, Bozeman, MT

Terry L. Shaffer, Northern Prairie Wildlife Research Center, USGS, Jamestown, ND

Continental waterfowl population declines in the early 1980s led to the development and implementation of the North American Waterfowl Management Plan. The plan identified wetland and grassland losses in the Prairie Pothole Region (PPR) of Canada and the United States as the major causes of low continental duck populations. Until 2008, north central Montana was the only remaining PPR area in the United States without a ground-based annual survey to monitor breeding duck populations and quantify breeding duck habitat. The purpose of this study was to establish an annual breeding duck survey in north central Montana to 1) develop species-specific breeding pair predictive models, and 2) apply the models to estimate the distribution of breeding ducks and identify priority areas for conservation. We observed 10539 indicated breeding duck pairs on approximately 675 wetland basins surveyed annually from 2008-2014. A competing models analysis was used to identify local- and landscape-scale habitat characteristics to predict breeding duck pair abundance on wetland basins. The five most commonly observed species were modeled separately; those species were mallard (*Anas platyrhynchos*), northern pintail (*A. acuta*), gadwall (*A. strepera*), northern shoveler (*A. clypeata*) and blue-winged teal (*A. discors*). At the local scale, wetland basin area, the square root transformation of wetland basin area, and wetland basin class were important predictors for all species. Important model predictors varied by species at the landscape scale. We applied the models in a GIS to develop a decision support tool for conservation actions funded by the Migratory Bird Conservation Fund.