

LINKING WATERFOWL DISTRIBUTION AND ABUNDANCE TO SPATIAL AND TEMPORAL DISTRIBUTION AND ABUNDANCE OF WETLAND HABITAT

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ABSTRACT

Wetlands at the confluence of the Missouri and Grand Rivers in central Missouri can provide nutrients and refuge required by waterfowl during autumn migration and wintering. Despite the importance of inundated wetlands in providing energy for migrating waterfowl, knowledge of spatial and temporal wetland availability and factors influencing wetland inundation is limited in Missouri. Further, little is known about waterfowl abundance and distribution on private lands in the region and how wetland availability influences waterfowl distribution. I assessed inundation frequency of National Wetland Inventory (NWI) and Wetland Reserve Program (WRP) wetlands and modeled factors influencing NWI wetland inundation in November. I estimated waterfowl abundance and distribution on private lands in autumn and winter using an aerial strip-transect survey. Finally, I assessed influence of wetland availability on waterfowl distribution and abundance in Missouri in autumn and winter. Inundation frequency was lower for NWI wetlands than WRP wetlands among all years (\bar{x} = 0.21 and 0.61 respectively), and factors influencing NWI inundation included precipitation, watershed land use, presence of hydric soils, and wetland area. Aerial survey estimates reveal that >50% of waterfowl in the region may use private lands and 98% of waterfowl occurred within the Grand and Missouri floodplain. Finally, number of available NWI and WRP wetlands positively influenced waterfowl abundance on public wetland areas in the region. My results highlight the importance of wetland conservation on public and private lands in Missouri. Further, my results indicate that autumn migrating and wintering waterfowl may benefit from restoration efforts that complement public wetland areas as well as existing wetlands on private lands.