



# INHS Reports

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## Moist-soil Wetlands as Breeding Habitat for Grassland Birds

With few exceptions, songbird populations are declining across North America. It's an all-too-common occurrence that is even more pronounced in species that rely on grasslands during the breeding season. In particular, row-crop agriculture in the midwestern United States has replaced most of the native prairie used by grassland birds during the breeding season. As a result, grassland bird populations in the Midwest have declined immensely and have nearly disappeared in some places.

Illinois has lost 99.9% of its native prairie since the 1800s, and these breeding habitats have been replaced mostly by agriculture, urban development, and other types of grasslands less suitable for grassland birds to use during the breeding season. Although many populations are declining, grassland birds have adapted to other habitats including pastures, idle crop fields, roadside ditches, and other areas with early successional herbaceous vegetation that may resemble the structure of

native breeding habitats. We wondered if this type of vegetation in moist-soil wetlands during summer drawdown periods could provide breeding habitat for grassland birds.

Contrary to their name, moist-soil wetlands do not always resemble what one would typically imagine a wetland to look like during the breeding season. These wetlands are dewatered in the spring or early summer to allow the growth of early-successional vegetation.



ABOVE: Succession of seed-bearing and herbaceous vegetation following the drawdown of a moist-soil wetland.



They are then reflooded in the fall and winter to provide habitat for migratory waterfowl. Moist-soil wetlands are an extremely important foraging resource for waterfowl, providing a plethora of seeds, tubers, and invertebrates. However, during summer drawdown periods when this vegetation is produced, these wetlands may provide a structure similar to native breeding habitat of grassland birds.

During the summers of 2014 and 2015, master's student Kristen Finch examined avian use of moist-soil wetlands in the Illinois River valley to determine if grassland birds use them for breeding habitat. She found grassland birds using moist-soil wetlands for foraging and breeding, but the high amount of precipitation and elevated river levels during the study period forced water into previously dewatered wetlands, flooding many nests. Although the volume of rain was abnormal during the study period, it highlighted the risk for grassland birds that nest on or near the ground in areas like moist-soil wetlands. Kristen determined that moist-soil wetlands can provide viable breeding habitat for grassland birds. However, moist-soil wetlands that are at a higher risk of flooding (e.g., more susceptible to river fluctuations) may act as ecological traps for grassland birds.



ABOVE: Kristen Finch using a field candler to determine development stage of songbird embryos.

BELOW: Left; a grasshopper sparrow nest in a moist-soil wetland. Right; hatching red-winged blackbirds in a moist-soil wetland.



ABOVE: A study location within a moist-soil wetland. Photo by Kristen Finch.

We recommend that managers of moist-soil wetlands that are at greater risk of flooding should be dewatered later in the season to discourage nesting (e.g., July-August), thus minimizing risk of nest failure due to flooding and creation of an ecological trap for breeding birds. Moist-soil wetlands at a lower risk of flooding (e.g., those outside of floodplains or in areas with flood protection) provide habitat suitable for nesting grassland birds and should be dewatered early in the growing season (May-June) to provide suitable nesting vegetation as nests are being built.

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