AMPHIBIANS AS WETLAND RESTORATION INDICATORS ON WETLANDS RESERVE PROGRAM SITES IN LOWER GRAND RIVER BASIN, MISSOURI

Doreen C. Mengel

Dr. David L. Galat, Thesis Supervisor

ABSTRACT

My research goal was to determine if hydrological and biological wetland characteristics had been restored to Wetlands Reserve Program (WRP) sites in the Lower Grand River basin, north-central Missouri, as indicated by distribution, recruitment success, and relative species richness estimates for members of a regional species pool. I encountered 10 amphibian species representing 59% of the regional species pool. Results indicate seven of the detected species or groups were widely- distributed, two were moderately- distributed, and two were sparsely distributed on WRP sites indicating hydrological wetland characteristics have been restored to sites given the moderate- to wide-distribution of species associated with both seasonal and permanent wetlands. Although species were successfully recruiting young into adult populations, only leopard frogs had high estimates of recruitment success whereas the remaining species had moderately high to moderate to low recruitment estimates indicating biological wetland characteristics are somewhat lacking to lacking for these species. Results from the relative species richness assessment indicate that, whereas 74% of the sites provided some degree of wetland habitat for members of the regional species pool over the course of the field season (7 March – 19 September), 52% of the sites lacked suitable habitat conditions during the peak of amphibian breeding and larval development (May through July). Targeting management actions that result in suitable seasonal wetland habitat conditions (shallow, vegetated wetlands that gradually dry by mid-to late-summer) throughout the time needed for species to complete their life history requirements is one method to increase the biological wetland value of restored WRP sites.