

Restored Wetlands Provide Quality Habitat for Mammalian Communities

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Background & Introduction

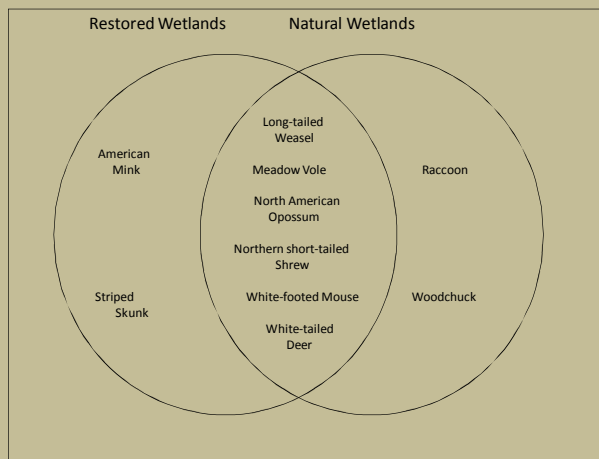
The ecological importance of wetlands for biodiversity has made wetland conservation a priority in recent years. Because wetlands are disappearing in many parts of the United States, many conservation efforts now focus on the restoration of damaged lands as a way to bring back wetland ecosystems. To measure the success of restoration efforts, scientists typically focus on hydrology, vegetation, and soil as benchmarks, giving limited attention to wetland fauna. Therefore, we compared mammalian communities at six sites in Northeastern Ohio – three reclaimed and three natural – to measure the success of restored wetlands in terms of mammal diversity and abundance. We feel that vertebrate communities may be useful indicators of wetland value and should be considered in management decisions.



Methods

We determined small mammal diversity and abundance through live trapping and infrared photography. For each wetland site, we set up five trap stations consisting of five traps each – one chipmunk-sized Tomahawk live-trap (5.0 x 5.0 x 6.0 inches), one large Sherman live-trap (4.0 x 4.5 x 15.0 inches), and three small Sherman live-traps (3.0 x 3.0 x 9.0 inches). Each site also contained a 24-hour infrared camera that detected heat and motion. We baited the traps and camera with various combinations of beef cubes, pink salmon, a peanut butter & oats mixture, scratch grain, and apples. In all, we conducted a total of 1,500 potential trap nights and 60 camera nights at six different sites.

Results – We recorded over 200 unique individuals from 10 different mammalian species and obtained the following results:

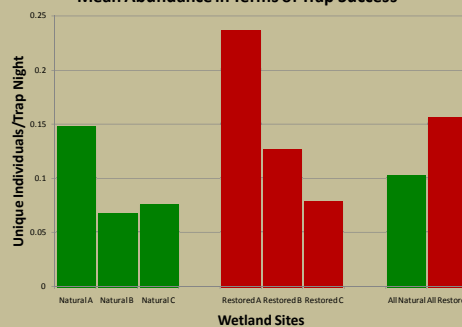


Ways to Look at a Wetland:

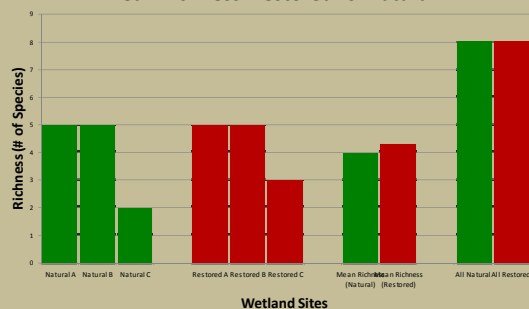
- 1) Hydrology – How water flows often determines a wetland's function in an ecosystem.
- 2) Soil – The quality of the soil influences the types of vegetation that will make up a wetland.
- 3) Vegetation – Many people use plant diversity as a yardstick for the value of a wetland.
- 4) Vertebrate Communities - ??? Little has been done to study the importance of wetland vertebrates



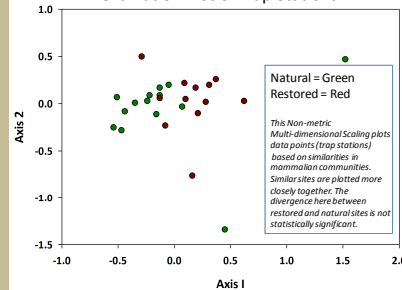
Mean Abundance in Terms of Trap Success



Mean Richness: Restored vs. Natural



Ordination Plot of Trap Stations



Discussion

- Restored sites have similar richness but much greater abundance of mammals than natural wetlands.
- Our data indicate that restored wetlands – if maintained correctly – can harbor mammal communities as mature as those found in natural wetland habitats.
- Because wetlands are disappearing, re-creating what was once wetland habitat may be more important than ever.
- Farmland, vacant lots, and other sites that have been disturbed by humans can still be turned into effective habitat for vertebrates through restoration efforts.
- Although small mammals are not necessarily wetland obligates, they will readily inhabit and thrive in wetland ecosystems.
- Even small wetland patches are ecologically significant.
- The importance of wetlands may extend beyond mammals to other vertebrate communities, like birds, reptiles, and amphibians.



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