

**THE EFFECTS OF MOWING ON PLUMELESS THISTLE (*CARDUUS ACANTHOIDES*) SEED PRODUCTION AND NATIVE FORB DIVERSITY AND ABUNDANCE DURING THE EARLY YEARS OF A PRAIRIE RESTORATION IN NORTHERN MINNESOTA**

**REBECCA ESSER\*, U.S. FISH AND WILDLIFE SERVICE, DETROIT LAKES WETLAND MANAGEMENT DISTRICT, 26624 NORTH TOWER ROAD, DETROIT LAKES, MN 56501**

**CATHY HENRY, U.S. FISH AND WILDLIFE SERVICE, PORT LOUISA NATIONAL WILDLIFE REFUGE, 10728 COUNTY ROAD X61, WAPELLO, IA 52653**

*Abstract:* At the USFWS Detroit Lakes Wetland Management District (District), we use snow-seeding for our restorations. This method provides the best results in the re-establishment of native vegetation in our area. However, as in all restorations, invasives can be problematic in the first years of the restoration. A common invader in the District is the biennial plumeless thistle (*Carduus acanthoides*). Because this species is on the Minnesota State Noxious Weed List, we often mow new restorations during the first few years to satisfy neighboring landowners and weed inspectors. The goal of this project is to determine the effect of mowing on plumeless thistle seed production and native forb diversity and abundance during the first growing seasons of the restorations. We selected four sites with similar soil type that had been seeded in the past two to three years. At each site, we established three, 5 x 100 meter plots. We randomly assigned plots as a control, treatment mowed at 13 inches or treatment mowed at 26 inches. Mowing occurred twice during the early flower stage to impact thistle. To measure plumeless seed production, we randomly collected one hundred seedheads from two of the sites. We used a modified step-point to record broadleaf species at one-meter intervals in the center of the plot. We recorded six invasive species, primarily from the Aster and Legume families, and 16 native forb species. Native forbs ranged from 26-86% of the points. We will report data from the second year of the study.