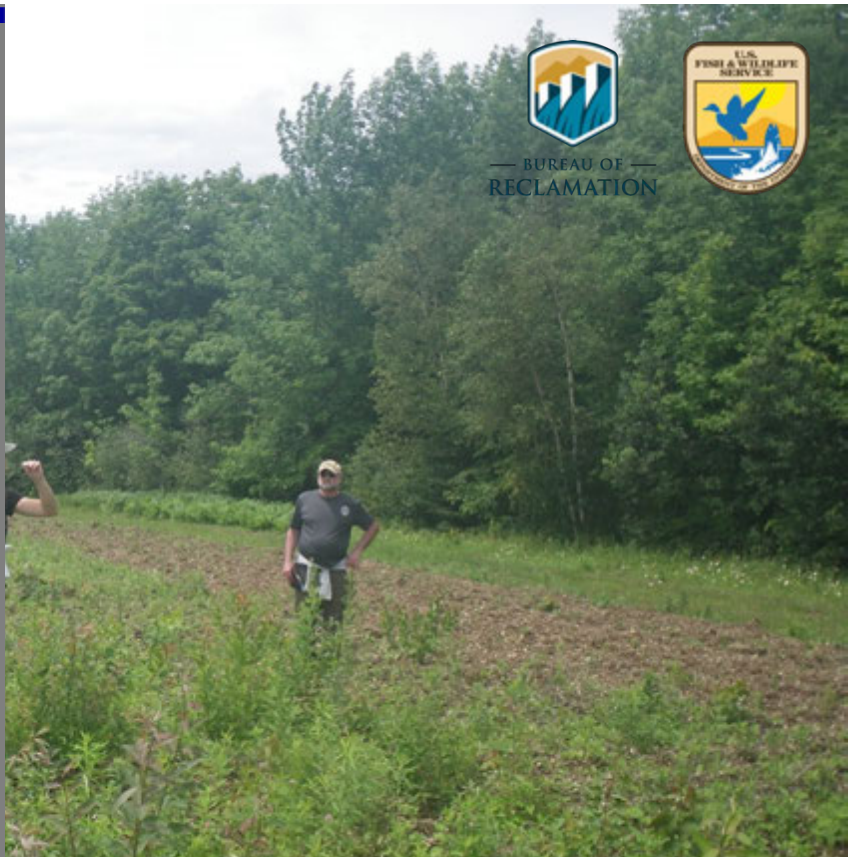
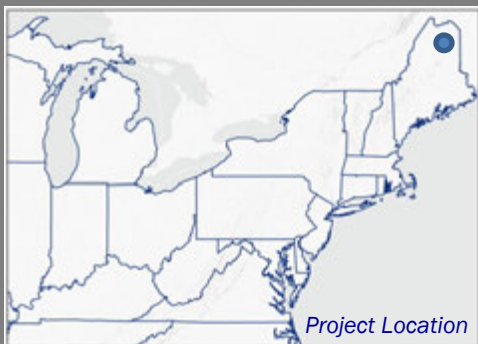


## RESTORATION

# Outreach and Best Practices for Pollinator Habitat Restoration in Northern Maine



As pollinators have declined throughout the United States, focus on pollinator conservation has increased for many state and federal agencies, including the Natural Resource Conservation Service (NRCS). Increased funding for pollinator conservation efforts has led to the development of local programs for pollinator habitat restoration initiatives. However, knowledge of best practices for regional pollinator habitat restoration efforts are often lacking. In northern Maine, the Central Aroostook Soil and Water Conservation District (CASWCD) developed restoration demonstration plots to inform local landowners about a NRCS pollinator restoration cost-sharing program and methods for pollinator-focused restoration on fallowed (non-producing) agricultural lands.



*This Area will be Mowed to 6" Height Once Pollinators are Active in Spring*

## KEY ISSUES ADDRESSED

Aroostook county is an agricultural community that has been adversely impacted by pollinator declines. The loss of pollinators threatens the health of local ecosystems and causes the loss of pollination services for food crops that require pollination. While the NRCS cost-sharing program has lessened financial barriers for landowners, a lack of available resources on the technical details of pollinator habitat restoration may prevent interested landowners from engaging in these activities. A lack of public awareness of the cost-sharing program has also impeded its adoption in the region. Managers at CASWCD are therefore developing restoration recommendations and increasing awareness of the NRCS cost-sharing program.

## PROJECT GOALS

- Establish pollinator habitat restoration demonstration plots
- Develop recommendations for technical aspects of restoration
- Share resources with local landowners
- Increase awareness of NRCS pollinator habitat restoration cost-sharing program

## COST-SHARING CONSERVATION

NRCS will cover up to 75% of the expense for habitat restoration projects on private lands in Maine through the 2019 Pollinator Initiative.



Seed is Lightly Tilled and Rolled at a rate of 60 Seeds/Sq Ft

## PROJECT HIGHLIGHTS

**Demonstration Plots:** CASWCD prepared demonstration plots in summer 2021 and seeded them the following fall. Landowners will be encouraged to view demonstration plots, ask questions, and receive restoration advice on annual field days.

**Seeds and Seeding:** CASWCD partnered with Xerces Society to produce a pollinator focused seed list including species like purple coneflower (*Echinacea purpurea*) and little bluestem (*Schizachyrium scoparium*). CASWCD purchased seeds at a cost of approximately \$900/acre, which were hand-broadcasted across 2.5 acres. Managers seeded at a rate of around 70 seeds/ft<sup>2</sup>, and followed with a roto-tiller to incorporate seeds into soil.

**Soil Treatments:** CASWCD conducted five different soil treatments across demonstration plots, which included: solarization using black weed fabric, glyphosate herbicide and tilling, mowing to 6", tilling and planting a buckwheat cover crop, and harrowing. After treatments, pollinators were most abundant on plots that were mowed and planted with cover crops.

**Pollinator Monitoring:** To aid in pollinator identification and monitoring on private lands, CASWCD produced a regional bee identification guide. Researching and developing the identification guide took around one month to complete, and printing cost \$7 per copy.

## Collaborators

- Natural Resource Conservation Service
- Central Aroostook Soil Water Conservation District

Authors: Nicholas Katz, University of Arizona, Randy Martin, CASWCD, July 2022.

Photos courtesy of Randy Martin/CASWCD  
For more information on CCAST, contact Genevieve Johnson ([gjohnson@usbr.gov](mailto:gjohnson@usbr.gov)) or Matt Grabau ([matthew\\_grabau@fws.gov](mailto:matthew_grabau@fws.gov)).

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## LESSONS LEARNED

While managers used purchased seeds for demonstration plot planting, they would prefer to use hand-harvested seeds in the future. Hand-harvested seeds are less expensive for small sites like these, and allow managers to select for priority native species. After initial attempts to use a no-till seeder were ineffective, managers switched to hand-broadcasting seeds. Seeding rate increased from 60 seeds/ft<sup>2</sup> to 70 seeds/ft<sup>2</sup> consequentially causing the seeded area to decrease from 3 to 2.5 acres.

Black weed fabric was effective in solarizing soils instead of traditional plastic, and was more resilient to trampling by wildlife. Solarization treatments are likely to be effective for landowners up to ~5,000 acres. The soil treatment method used before seeding impacted the abundance of pollinators on demonstration plots; wild strawberries on mowed plots and flowering buckwheat on plots with cover crops attracted pollinators, whereas plots treated with herbicides were pollinator poor. Pollinator abundance may differ after winter, as treatment methods that remove plant stems or disturb soil remove habitat for overwintering pollinators.

## NEXT STEPS

- Collect native seeds throughout the summer to be used on demonstration plots during the upcoming fall
- Conduct field days annually, where local landowners are encouraged to view demonstration plots and receive guidance
- Test the success of different seed mixes in recruiting pollinators to demonstration plots

For more information on this project, contact Randy Martin:  
[centralaroostookswcd@gmail.com](mailto:centralaroostookswcd@gmail.com)



Explaining Solarization Treatment to Landowners in the Fall