



Gap Size Effect On White Pine Regeneration Under Uneven-Aged Management



Caption 2: A recent timber harvest where researchers studied the effects of gap size on white pine regeneration. Photo Credit: Wisconsin DNR.

Principal Investigators & Partners

- Wisconsin DNR
- Christel Kern (USDA FS NRS)

Timeline

- Launch – May 2020
- Expected Completion Date – 2040
- Status – Ongoing

Contact Information

Brad Hutnik

DNR Forest Ecologist / Silviculturist

Bradley.Hutnik@wisconsin.gov

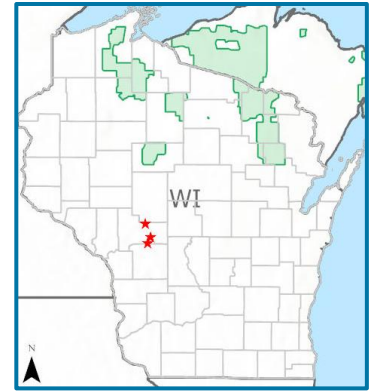
Devesh Bahuguna

Forest Ecology and Silviculture Specialist

Devesh.Bahuguna@wisconsin.gov

Project Overview

Forest managers need clearer guidance on whether uneven-aged silvicultural systems can reliably regenerate eastern white pine. This study compares regeneration in replicated 0.1, 0.5, and 1-acre openings and uncut controls across three sites on the Black River State Forest over a 10-years period. Seedling density, height-class distribution, survival, and within-gap position effects are being monitored using 1/300th acre permanent plots and tagged white pine seedlings. Results will identify the opening sizes and gap positions most likely to support successful white pine recruitment under uneven-aged management.



Caption 1: Map of project areas in Jackson County. Photo Credit: Wisconsin DNR.

Key Points

- Height class tallies in 1/300th acre plots have noted seedling presence and will monitor ongoing regeneration and recruitment into taller classes
- Center, midpoint, and tagged-seedling measurements capture both gap-position effects and individual seedling survival.

Management Implications

- Results will identify the minimum opening size needed to achieve reliable white pine recruitment under a group based uneven aged management system.
- Findings will help managers determine whether release or competition control is needed to move white pine into taller height classes.