Fiber, Feathers and Friends
An Integrated Approach to Managing Jack Pine to Benefit Kirtland's Warbler, Maintain Yields and Involve Partners

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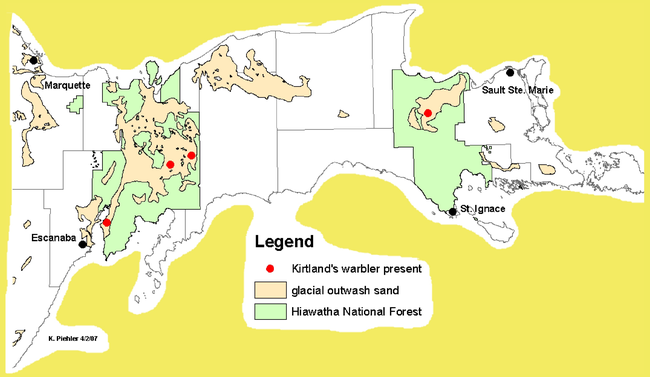
Jack pine (Pinus banksiana) is a common tree species adapted to well drained and sandy soil (i.e. “barrens”) conditions throughout the Great Lakes states. Of all the commercial tree species in the (U.P.), jack pine is best able to tolerate droughty, nutrient-poor sites.

Dense stands of young jack pine provide optimal nesting habitat for Kirtland's warbler (Dendroica kirtlandii) or “KW.” KW are federally listed and breed primarily in Michigan’s northern Lower and eastern Upper Peninsulas. On the Hiawatha National Forest (HNF), young jack pine stands about 6-16 years of age (about 5-15 feet tall) are considered suitable for nesting.

Historically, vegetation on the jack pine barrens was maintained by natural wildfires that occurred frequently throughout the region. With the arrival of wildfire suppression, an emphasis on forest management practices to regenerate jack pine is required for the continued recovery and viability of the Kirtland's warbler.

Planning



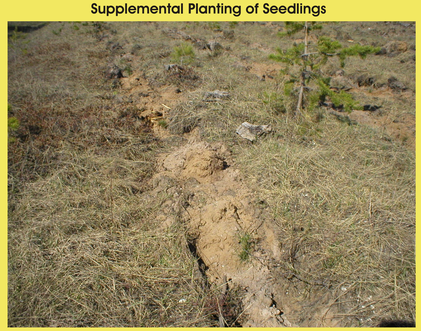
The HNF's 2006 Forest Plan identified management areas on nutrient-poor soils as the locations where KW habitat management should be emphasized.

- Large areas of habitat (highest potential for nesting in stands/complexes > 1,000 acres).
- Small non-forest inclusions (approximately 25 percent open area per acre).
- Average stocking density of about 1,100 trees per acre or more (result in about 1,450 trees per acre in habitat outside of the open areas).
- Stocking density should not reach a level were branch self-pruning occurs while the trees are about 15 feet tall or less (live lower branches improve KW suitability).

Management

Site Preparation

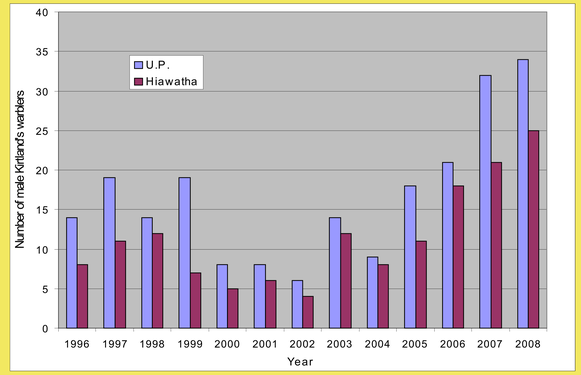
Supplemental Planting of Seedlings



The HNF jack pine reforestation program emphasizes natural regeneration (less expensive than full planting). Therefore, site preparation takes place as soon as possible after harvest (maximum seed viability). Prompt soil scarification, before the jack pine cones open (generally in July following harvest), improves seed germination (seeds fall from cones in the logging slash on to mineral soil).

- A rollerchopper is used to crush the jack pine slash remaining after a mature jack pine stand has been clearcut.
- Spiked anchor chains, either dragged behind the rollerchopper or used separately, scarify the soil.
- Jack pine has serotinous cones, so rollerchopping brings the cones on the slash close to the ground and heat from the sun opens them and seeds are released.
- Supplemental seeding or planting may be implemented to reach the stocking density needed for KW nesting.
- After stands grow out of the size that provides KW nesting habitat, they are managed conventionally for fiber production.

Partnerships



Recently documented presence of KW in the U.P. peaked in the late 1990’s following wildfires on the forest. Management efforts may be helping to drive the observed increase since 2005. Partnerships appear to be a promising means for funding KW habitat work if either full or supplemental planting of jack pine for KW is prescribed. The HNF was the only Forest in Region 9 to receive a grant from the National Arbor Day Foundation in 2006. This grant is being used in the spring of 2007 to create and restore habitat for Kirtland's warbler through supplemental planting in areas where natural regeneration of jack pine alone did not result in sufficiently dense stocking to meet KW habitat needs.