

Technical Guide  
Kirtland's Warbler Habitat Management  
Hiawatha National Forest  
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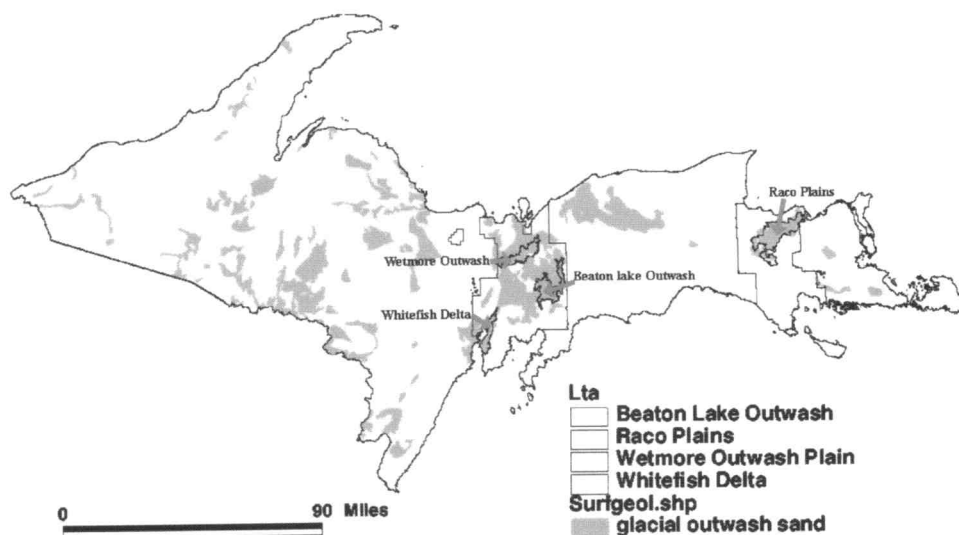


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## Introduction

This document provides the technical information needed to create and sustain Kirtland's Warbler (KW) breeding habitat, and meet Hiawatha Forest Plan goals, objectives and guidelines. Multi-scale planning and coordination is needed to maintain a balanced age-class-distribution of jack pine that will ensure a sustained flow of KW habitat. This technical guide will help the Forest prioritize and prepare Environmental Assessments for jack pine habitat management activities. Technical direction and coordination is needed to identify where, when and how jack pine harvest and reforestation for KW will occur. Additional information pertaining to other key aspects of KW management (i.e., cowbird control, human disturbance, census, etc.) is provided in the KW Management Strategy (Huber et. al, 2001), The KW Recovery Plan, the Forest Plan programmatic BA, and associated files.

The Hiawatha NF goal (Forest Plan 2-19) is to harvest and reforest an average of 670 acres of jack pine per year, to provide a minimum of 6,700 acres of sustained suitable KW habitat per decade. Approximately 33,700 acres of jack pine, managed on a 50 year rotation, is needed to meet this habitat goal. Four KW Management Areas (KWMA) have been mapped to encompass the dry sand 10 and 20 Ecological Land types (ELT) within Management Areas 4.4 and 4.2 (Forest Plan 2-19).



Kirtland's warbler breed in jack pine stands 6-16 years of age and greater than 80 acres in size, with several scattered small openings, and a minimum stocking density of 1,089 trees per acre. Stands of 1,000 acres and larger have been found to improve nesting density and duration of stand use. Whitefish Delta, Beaton Lake Outwash (now called Indian River), and Raco Plains all provide occupied KW breeding habitat. The 4 mapped KWMA's consist of a variety of forest types and are currently growing approximately 40,300 acres of jack pine. The 4 KWMA's would be the most likely areas for KW occupancy. However, there are other areas of suitable KW habitat that fall within other land types (i.e., Interior Wetlands), and outside the mapped KWMA's.

Management for Kirtland's warbler has both temporal and spatial aspects. This Technical Guide for Kirtland's Warbler Habitat Management is a working document that emphasizes a ten-year time period. This permits us to incorporate the spatial aspects of KW management through the first decade of the Forest Plan. Based on the HNF timber sale program, direction in the Forest Plan and other resource considerations, we can reasonably determine the locations of KW breeding habitat on the Forest.

We recognize that a long-term management perspective is required to ensure the viability of the species. Dynamic processes, both natural and human-induced, such as disease, weather, seedling availability and survival, market conditions and other resource concerns will likely determine the locations of future projects, making it difficult to provide details regarding stands that will function as Kirtland's warbler breeding habitat much beyond a 10-year period. We have incorporated 100-year jack pine modeling into the guide (Appendix 1), a feature that will permit continuous tracking of habitat to help the Forest manage towards the goal of a minimum of 6,700 acres of continuous breeding habitat on the Hiawatha. Modeling information can be updated as needed.

There is still much uncertainty and much to learn about KW management on the Hiawatha. For example, differing reforestation methods (plant vs. seed or natural regeneration), uncertain availability of seed and planting stock, effects of insect (budworm) and disease (scleroderris and 2-needle cast), will all have an impact on how KW habitat is developed. The primary difference between KW habitat and traditional managed jack pine habitat (non-KW) is the stocking density of the trees. Interdisciplinary coordination will be needed to develop new and innovative approaches to jack pine management on the Hiawatha. Stewardship contracting and adaptive management should be used to test new approaches and increase efficiency. Field inventory and monitoring should be used to make informed decisions.

### **Forest Plan Direction for KW Management**

2006 Hiawatha Forest Plan Goals, Objectives and Guidelines for KW management;

#### **Goals:**

- *Provide for Kirtland's warbler management within forest-wide vegetation goals.*
- *Provide a minimum of 6,700 acres of jack pine in the appropriate size class, as determined in consultation with the U. S. Fish and Wildlife Service (FWS), striving to achieve desired Kirtland's warbler stocking levels on ELT 10/20 in Management Areas 4.4 or 4.2.*

#### **Objectives:**

- *Regenerate an average of 670 acres of jack pine per year in Management Areas 4.4 or 4.2 on ELT 10/20 to provide Kirtland's warbler habitat.*

#### **Guidelines:**

- *For Kirtland's warbler management, strive to regenerate jack pine stands with the appropriate stem density and non-forested openings, as determined in consultation with the FWS.*

