

BA-BE Effects Narrative

2/03/05

Kirtland's Warbler

Background Information

Kirtland's warblers are present on the Hiawatha National Forest (HNF), breeding and foraging in stands of young jack pine. The HNF provides important breeding habitat for the Kirtland's warbler (KW) in Michigan. The Kirtland's warbler was first listed as federally endangered on March 11, 1967 (DOI 1967). No critical habitat has been designated for this species. However, approximately 150,000 acres of essential habitat has been identified on public land in the northern Lower Peninsula of Michigan. Essential habitat is defined as "that land identified as biologically appropriate and necessary for the development of nesting habitat for the Kirtland's warbler" (Huber et. al. 2001). No essential habitat has been identified for management on the HNF.

On the HNFs, Kirtland's warbler conservation and management is conducted in consultation with the U.S. Fish and Wildlife Service (USFWS) and the KW Recovery Team and is guided by two documents:

The Kirtland's Warbler Recovery Plan (KWRP) (Byelich et al. 1985). The *Kirtland's Warbler Recovery Plan* was completed in 1976 (Byelich et al.) and revised in 1985 (Byelich et al.).

Strategy for Kirtland's Warbler Habitat Management (Strategy) (Huber et. al. 2001). The *Strategy for Kirtland's Warbler Habitat Management* replaced the *Kirtland's Warbler Management Plan for Habitat in Michigan* (Management Plan) (USFS & MDNR 1981). The Strategy provides specific direction for land managers in the USDA Forest Service (USFS), Michigan Department of Natural Resources (MDNR), and USDI Fish and Wildlife Service (USFWS) on how to manage summer range for the Kirtland's warbler, and protecting individuals and their nesting habitat.

These documents are not referenced in the current Hiawatha Forest Plan and the Plan does not address specific standards and guidelines relative to KW. In addition to the above guidance, Section 7 (a)(1) of the ESA directs "all Federal Agencies to, in consultation with the U.S. Fish and Wildlife Service, proactively conserve listed species by carrying out programs aimed at their recovery. Moreover, section 7(a)(1) allows for Federal agencies to prioritize the conservation and recovery of listed species along with other traditional agency mandates or missions. To this effect, section 7(a)(1) imposes on each Federal agency an affirmative duty to conserve listed species."

Species Biology/Ecology

Kirtland's warblers migrate from their winter habitat in The Bahamas to their breeding habitat in Michigan in early to mid May. Their average arrival date in Michigan is May 12; the earliest known arrival is May 3.

Kirtland's warblers typically occupy jack pine stands greater than 80 acres in size, with a stocking density of 1100 or more trees per acre. Stands of 1,000 acres and larger have been found to improve nesting density and duration of stand use (Huber et al 2001).

Initial use may start when tree height reaches 5 to 7 feet or at an age of 6 to 10 years old. Generally, occupancy occurs as long as trees retain relatively dense living branches near the ground. This structure is often lost by the time the trees attain a height of 12 to 20 feet, or at an age of 16 to 21 years old. Warblers typically occupy a new nesting area in small numbers at first, gradually increasing for a few years until a peak or plateau is reached, and then decline for a few more years until the area becomes unsuitable and no warblers remain. Kirtland's warbler nesting habitat is dynamic and ephemeral. Warbler nesting locations move across the landscape through time as new jack pine stands become suitable and other stands age and become unsuitable. Warblers are adapted to finding and using new breeding habitat. Their survival depends on continuous, uninterrupted regeneration of new breeding habitat throughout the northern Michigan jack pine forests.

The required habitat type is uncommon in Michigan and is restricted to poor, sandy soils of glacial origin. Areas of suitable nesting habitat are scattered and separated by areas of unsuitable habitat. Males occupy breeding territories which they appear to delineate by loud, persistent singing. Nests are constructed on the ground and by late May or early June clutches of 4 to 5 eggs are complete. Incubation requires about 14 days, and nestlings fledge in about 9 days (Walkinshaw 1983). Some Kirtland's warbler pairs nest a second time following a successful first nest.

Kirtland's warblers begin leaving the breeding areas for the migration south in mid August. They depart over a lengthy period, with the last birds leaving Michigan as late as early October (Sykes et al. 1989). Their migration path, based on sightings (Mayfield 1960), seems direct between Michigan and the Bahamas. USFWS research biologists visited several islands of the Bahamas and Turks and Caicos in 1984 and 1985 in an attempt to study the birds' behavior and identify any adverse factors affecting their survival there (Mike DeCapita, pers. comm. With Paul Sykes). Sufficient warblers for a scientifically valid sample could not be located. Two individual warblers observed, as well as observations of availability of and likely threats to winter habitat, led the biologists to conclude that this species does not face significant adverse effects during winter (Mike DeCapita, pers. comm. With Paul Sykes). New research is currently ongoing in The Bahamas to identify preferred winter habitat, quantify habitat use and diet, identify factors affecting distribution, and quantify site fidelity and winter site persistence.

Species Status

The Kirtland's warbler population was first censused in 1951 by counting singing males (432 males). Total breeding adult population is assumed to be double the number of singing males counted. The next count in 1961 was 502 males, but the third count in 1971 declined 60% to 201 males. Between 1972 and 1989, the population remained somewhat stable, ranging from 167 to 214 males. Since 1989, the population has increased annually, exceeding 1000 pairs every year since 2001 (Figure 1). The recent population increase is a result of habitat and cowbird population management by the 3 State and Federal resource agencies, as well as the creation of a large block of natural habitat by the 1980 Mack Lake Fire.

