

rotation conifer stands tend to be dominated by red pine (usually as plantations), with a small percentage of northern pin oak and jack pine.

In general, age-class diversity in the project area is high, with habitat well distributed across age classes (See Map 8 & Figure 2). Age-class diversity within the analysis area currently provides diverse habitats for a variety of wildlife species. [Historically, many of the jack pine stands within the analysis area were managed for Kirtland's warbler breeding habitat, creating large tracts of jack pine of the same or similar age (Figure 3).] Overall, the stands currently provide habitat for species that need large areas of unbroken forest, and those that require forest edge.

Approximately 42% of the analysis area has been designated as old growth that comprises the bulk of the long rotation conifer, aspen/birch, lowland conifer and lowland hardwood community types. Over time, areas managed as old growth provide habitat for species such as pileated woodpeckers that require mature to overmature with a component of dead and dying trees. Natural disturbances such as fire and windthrow will also create or maintain openings for openland-dependant species such as bluebirds.

Past, present, and future activities occurring in the analysis area are the same as those in the Description of Relevant Affected Resources for the Recreational Experience issue. (Section 3.3)

## **Federally Threatened or Endangered Species and Regional Forester Sensitive Species**

The following federally threatened or endangered species could occur in the proposed project area: Kirtland's warbler, *Dendroica kirtlandii*, -endangered status, and bald eagle, *Haliaeetus leucocephalus*, - threatened status.

This project is outside the potential range for Indiana Bat (*Myotis sodalis*).

The following Regional Forester's Sensitive Species could occur in the proposed project area: northern goshawk, *Accipiter gentiles*-Regional status and Michigan bog grasshopper, *Appalachia arcane* - Regional status.

A list of Regional Forester's Sensitive Species considered, but not included in this assessment can be found in the Appendix of the Biological Assessment and Evaluation (Wildlife) located in the project file at the Mio District Office. These species were not included because: 1) they have not been documented to occur on the Huron NF; 2) they are found in habitat(s) unlike those found in the proposed project area; 3) they were not found during field surveys; and/or 4) habitat for the species exists within the proposed project area; however, the species would not be present within the project area during project implementation.

## **DETERMINATION OF EFFECTS**

Based on field surveys, survey records, analysis of the effects on federally listed endangered and threatened species and Regional Forester's Sensitive Species, the following determinations were made in the Biological Assessment:

### **Alternative 1: Do Not Permit (No Action)**

#### ***Direct and Indirect Effects***

Alternative 1 would have no direct or indirect impact on individuals of these species because the APD and SUPO would not be approved and the project would not be implemented. Small scale natural disturbance and vegetative succession would continue to provide a varying amount of habitat.

### ***Cumulative Effects***

There would be no cumulative impacts from Alternative 1 when added together with past, present, and reasonably foreseeable future actions. There would also be no change in the viability of these species in the planning area, because impacts would be negligible.

## **Proposed Action and Alternative 2**

### ***Direct and Indirect Effects***

The Proposed Action and Alternative 2 would have no direct or indirect effects on the Kirtland's warbler or bald eagle because the species would not be present in the proposed project area. Implementation would occur when the Kirtland's warblers are in the Bahamian wintering grounds. Essential habitat south of River Lake Road would not be impacted because the pipeline is buried, and any removal of trees would be on the north side, avoiding essential habitat to the south. There are no known or expected bald eagle nests, roosts, or perches in the area.

The Proposed Action and Alternative 2 may impact individual northern goshawks, but is not likely to cause a trend towards federal listing or a loss of viability. Daily well site visits could deter goshawks over the short and/or long-term from re-using the existing and/or establishing a new nest in the vicinity of the well site.

The Proposed Action and Alternative 2 would have no impacts on the Michigan bog grasshopper because the species is not known to occur in or adjacent to the proposed project area, and, if the species were present in the area, the likelihood of an impact occurring is remote enough to be considered discountable.

### ***Cumulative Effects***

When considered with all past, present, and foreseeable future activities, there would be an increased disturbance to the northern goshawk with additional visits. Since there is no occupiable or occupied Kirtland's warbler habitat within or directly adjacent to the proposed project area, nesting habitat would not be created adjacent to the proposed improvements. Potential Michigan bog grasshopper habitat would be created with the openings, but would likely not be colonized due to the grasshoppers' limited dispersal capabilities.