C. Breeding Birds

Through a partnership with the University of Minnesota-Duluth, the Natural Resources Research Institute (NRRI) has conducted breeding bird monitoring on the Chippewa National Forest since 1991. This monitoring program was designed to provide an accurate estimate of population change for forest bird species on three national forests in northern Minnesota and Wisconsin NRRI 2010).

Key Points

- Overall the breeding bird community of the Chippewa NF appears to be in excellent condition with the vast majority of species trends increasing or stable. Some concerns exist for declining population trends for the Connecticut Warbler and Golden-winged Warbler. If these trends continue, then it may be prudent to examine habitat and landscape use and changes within the Chippewa NF in more detail.

Monitoring Questions

To what extent is Forest management providing ecological conditions to maintain viable populations of native and desired non-native species.

Results

This collaborative project monitors song birds with over 1600 off-road sampling points designed to track regional population trends. This effort also is investigating the response of forest birds to regional land use patterns (including those that result from National Forest vegetation management) and developing techniques to analyze spatial and temporal relationships between distribution and abundance of forest birds to forest habitat features at the stand and landscape levels. Birds that had an adequate statistical link to MIHs were identified in the FEIS MIH tables (FEIS p. 3.3.1-2) as a part of the suite of species-MIH relationships considered during Forest Plan Revision.

On the Chippewa National Forest, bird population trends can be useful in evaluating changes to habitat quantity and quality over time. The population trends for forest-dwelling birds associated with particular habitats can provide some insights into the effectiveness of the coarse filter strategy.

In the Chippewa NF over 140 species have been detected during these counts and presently 60 species are tested for trends within the Chippewa NF. Of the 60 species, 21 species (35%) have significantly increased, four (7%) have declined, and over 50 % are stable during the period from 1995-2010. The four species with significantly declining trends include the Connecticut Warbler, Golden-winged Warbler, Yellow-throated Vireo, and Myrtle Warbler.

Both the Connecticut Warbler and Golden-winged Warbler are species of concern in Minnesota.

There is strong evidence of a widespread decline of the Connecticut Warbler in the US and in Canada based on our data as well as the USGS breeding bird roadside counts. Lapin (2010) has recently analyzed both habitat and landscape relationships of this species and found it was largely associated with a matrix of large forest patches comprised of lowland and upland coniferous forests. It may be a species that is sensitive to fragmentation of large blocks of these forest types. The Connecticut warbler is currently listed as a Regional Forester Sensitive Species on Chippewa National Forest, and receives deliberate attention at the project planning level.

The significant decline in the Golden-winged Warbler is unclear. The prime habitat for this species in this region is lowland shrub habitat and to some extent white spruce/balsam fir and aspen or aspen mixed forests (Hanowski 2002). Lowland shrub or lowland sedge habitat mixed with some trees such as ash is not sampled in the Chippewa NF. Therefore, the decline of this species may be due to a lack of adequately sampling prime Golden-winged Warbler habitat in the Chippewa NF. In the Chequamegon NF where this species has been increasing, these habitats are more effectively sampled (Niemi et al. 2011).

During the most recent update to the Chippewa's RFSS list, the golden-winged warbler was specifically considered in a risk evaluation for potential inclusion on that list (J. Gallagher 2010). Upon review, the species was not recommended for addition to the RFSS list.

The decline in the Yellow-throated Vireo at this time is not a major concern because the species is relatively uncommon in the Chippewa NF. A variety of factors could contribute to the detection of a decline, but the trend should be re-assessed next year.

The decline in the yellow-rumped (Myrtle) Warbler is also somewhat of an anomaly because it is significantly declining in both the Chequamegon and Chippewa NFs but increasing in the Superior NF. This species is highly associated with mature coniferous trees, including lowland conifers. It has similar habitat affinities with the Connecticut Warbler. Trends for this species should also be re-assessed in the future for consistencies in this pattern.

In contrast, the species that are significantly increasing in the Chippewa NF include many Neotropical migrants such as the Red-eyed Vireo, Veery, Black-and-White Warbler, Nashville Warbler, Black-throated Green Warbler, Ovenbird, American Redstart, and Rose-breasted Grosbeak. Several common breeding species such as the Mourning Dove, American Crow, Blue Jay, Black-capped Chickadee, Red-breasted Nuthatch, Chipping Sparrow, American Goldfinch, and White-throated Sparrow have also significantly increased.

Given these results, the majority of breeding bird species in the Chippewa NF have been increasing or stable over the past 16 years. In general, many of the species that are increasing or stable tend to be those associated with deciduous or mixed forests, but it is difficult to specifically identify a common denominator among these species.

The NRRI analysis (NRRI 2010 pp 7-8) includes an analysis of migratory, nesting, and habitat association guilds. Almost all of these guilds showed increases from 1995-2010. These guilds include: short distance migrants, long distance migrants, permanent residents, ground nesting, shrub/sub-canopy nesting, canopy nesting, cavity nesting, coniferous forest, lowland coniferous,

deciduous forest, early-succession, and mixed forest guilds. Permanent residents have shown the greatest overall percentage increase over the past 16 years (3.66% per year CNF). Note that a 3.66% per year increase over 16 years is a 55% increase. Short-distance migrants have shown the next greatest percentage increase.

In addition to survey and detect ability issues which can provide challenges to monitoring populations of forest birds, there are many complicating factors (e.g., nest predation, changes on wintering grounds, difficulties during migration, etc.) that individually or in combination may have an effect on populations of forest birds breeding on the CNF. However, population trends of individual species or guilds of species may provide insights into forest habitat conditions that may be affected by CNF management activities.

Recommendations

- The long-term data set that is being built through the NRRI forest bird monitoring partnership is a unique and good effort to continue, and should be a priority for Chippewa National Forest. The ability to detect meaningful trends increases with monitoring duration. More wildlife species are monitored through this effort than through all other ongoing monitoring and survey efforts on the Chippewa, combined, and at a lower cost per species than any other survey effort.

Yearly reports on breeding birds are located on the internet at: http://www.nrri.umn.edu/mnbirds/reports.htm and are also available from NRRI and the CNF.

More detailed information on breeding birds is part of the project file and is available upon request.