

Pileated Woodpecker Population in Relation to Habitat Changes Item 40

OBJECTIVE: Monitor population trends in relation to habitat changes.

DATA SOURCE: Call transects.

FREQUENCY: Three transects annually after the five-year average is established.

REPORTING PERIOD: 2014-2015.

VARIABILITY: +/- five percent of most recent five-year average.

MONITORING RESULTS:

Most Forests in Montana and Idaho use the Northern Region's standardized technique for establishing and monitoring pileated woodpecker call routes. We established nine call routes on the Bitterroot National Forest (BNF) that are each monitored three times annually, if weather and budgets allow. In 1997 and 1998, we sampled no transects due to budget constraints. We dropped the Chicken Creek transect in 2014 because the area along this transect burned at high intensity during the fires of 2000. The snags created by the fires have mostly fallen, and the area no longer provides habitat for pileated woodpeckers. We had not recorded any pileated woodpeckers at that site for several years, and dropped this transect to allow more time to survey routes that still provide habitat.

In FY 2014, we completed one survey on one route and two surveys on seven routes, for a total of 15 transects and surveyed each established route at least once. We recorded an average of 0.17 pileated woodpecker detections per mile of transect, which is about 37% below the 2013 detection rate. This year's figure is about 19% below the long-term average of 0.21 detections per mile, and is 23% below the most recent 5-year average of 0.22 detections per mile.

In FY 2015, we completed two surveys on two routes, and three surveys on six routes for a total of 22 transects. We recorded an average of 0.25 pileated woodpecker detections per mile of transect, which is about 47% above the 2014 detection rate. This year's figure is about 19% above the long-term average of 0.21 detections per mile, and about 13% higher than the most recent 5-year average of 0.22 detections per mile. Further evaluation of these data follows.

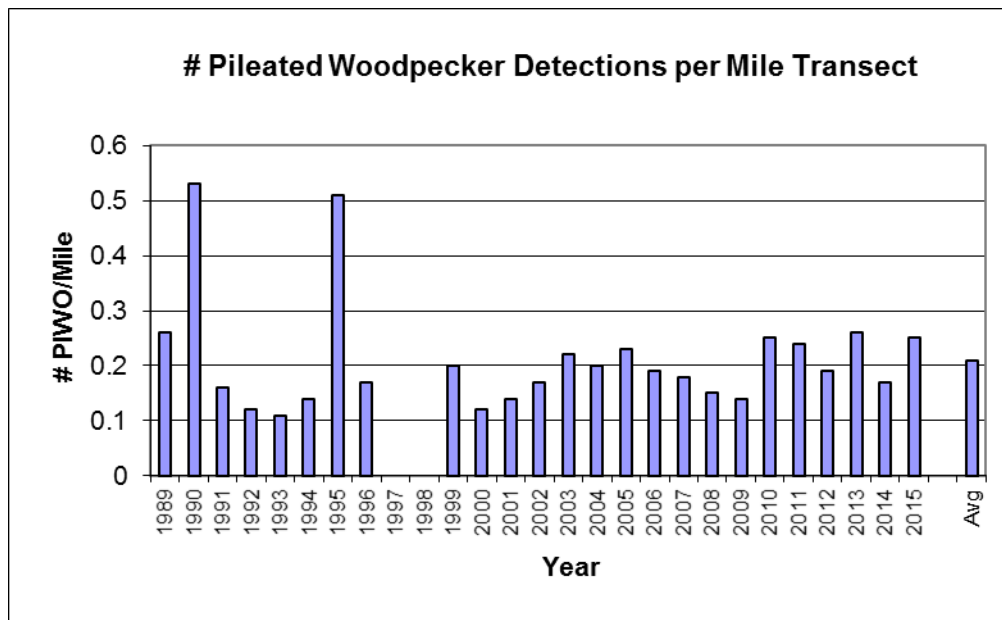


Figure 1 - Results of Pileated Woodpecker Call Counts, 1989-2015

EVALUATION:

Data from nine (now eight) monitoring transects scattered over the Forest show high variability in pileated woodpecker detections among transects and between years. Although the scientific literature has validated the usefulness of the call route technique to monitor population trends, more transects may be needed to reduce variability and increase confidence in our data. Lack of funding has precluded establishment of more transects, but we do have some base line information. We have systematically run approximately 2,531 miles of transects since 1988. We recorded an average of 0.21 calls or sightings per mile of transect over that period. The 2015 recording of an average 0.25 pileated woodpecker detections per mile of transect is about 19% above this long-term average, and is about 13% above the most recent 5-year average.

Figure 1 displays the number of pileated woodpecker calls or sightings detected per mile of transect monitored across the entire Forest by year. Ignoring the large spikes in pileated detections in 1990 and 1995, these data show that pileated detections declined somewhat in the early 1990s but increased from then until 2000, when they declined again. The spikes in 1990 and 1995 illustrate the variability inherent in these types of transects, and may or may not indicate actual changes in population levels. The low number of detections per mile in 2000 could indicate that populations declined that year, but could also be a result of other factors. The number of detections per mile generally increased slightly each year from 2000 to 2005, despite the fact that several of the transects were burned extensively during the fires of 2000. Pileated woodpeckers are not normally associated with moderate to high-severity burned areas. Number of detections declined slightly each year from 2005 to 2009, but increased markedly in 2010. Number of detections has averaged higher from 2010 to 2015 than any period since we started monitoring pileated woodpecker detections on standardized routes.

The number of detections can be influenced by local weather or stream conditions which can make hearing difficult, the period of time during the breeding season when transects are run which can influence the frequency of vocalizations, and the ability of the observer to hear and correctly identify pileated calls. Changes in the number of detections over time may also indicate actual changes in the number of birds present, which could be a result of habitat change or a number of other factors such as weather. Cool, wet springs, for example, drastically reduce the productivity of many bird species. The variability introduced by these factors makes it difficult to determine whether pileated woodpecker populations are changing on the Bitterroot National Forest, and if so, why.

We know that habitat quality for this species declined in the late 1800s and early 1900s across the Forest as a result of extensive cutting of mature ponderosa pine habitats. Fire suppression has also reduced habitat quality since the 1930s. Nevertheless, a recent habitat assessment for the pileated woodpecker indicates adequate habitat exists and is well distributed on the Forest and across the Northern Region. Based on this assessment,

the Bitterroot National Forest is estimated to contain sufficient suitable nesting habitat to support about 91 pairs of pileated woodpeckers, and enough winter foraging habitat to sustain almost 800 pairs of this species (Samson 2005). This habitat is well-distributed across the BNF at lower to mid elevations. Habitat estimates for the BNF only include National Forest System lands and alone are estimated to provide 86% of the habitat necessary for a minimum viable population (Samson 2006). Additional nesting habitat for pileated woodpeckers is located on private land in the Bitterroot valley in the mixed cottonwood and ponderosa pine forests along the Bitterroot River and many of its larger tributaries. These bottomland forests provide some of the most productive habitat for this species, and also serve to connect subpopulations in the surrounding mountains. The presence of large amounts of high quality habitat on private land indicates that the Bitterroot drainage is capable of supporting a much larger population of pileated woodpeckers than indicated by the Forest's estimates alone.

At the Regional scale, habitat modeling estimates that there is enough suitable nesting habitat to support about 2362 pairs of pileated woodpeckers, and enough winter foraging habitat to sustain about 19,430 pairs of birds (Samson 2005). Again, this estimate does not include the high quality habitat located along the river and stream corridors on private land. Median dispersal distance for pileated woodpeckers is estimated to be about 150 miles, which indicates that pileated woodpeckers across the entire Region belong to a single, well connected population. The Forests neighboring the Bitterroot to the north and west show pileated woodpecker habitat in excess of the quantity modeled to maintain a minimum viable population on their Forests alone (Lolo -165%, Clearwater -346% and Nez Perce -459%). Although no population estimates are available, the large amount of apparently suitable habitat well distributed across the Region combined with the interconnectedness of the population indicates that short-term viability of pileated woodpeckers across the Region is not an issue (Samson 2005).

These findings are also consistent with the broader view offered by the Natural Heritage Program. The international network of Natural Heritage Programs employs a standardized ranking system to denote global (G — range-wide) and state (S) status. Species are assigned numeric ranks ranging from 1 (critically imperiled) to 5 (demonstrably secure), reflecting the relative degree to which they are "at-risk." The pileated woodpecker is listed as G5 and S4 in Montana. G5 indicates that throughout its range, it is considered common, widespread, and abundant, although it may be rare in parts of its range. It is not vulnerable in most of its range. S4 indicates that in Montana, it is uncommon but not rare, although it may be rare in parts of its range, and usually widespread. This statewide rating also indicates the species is apparently not vulnerable in most of its range, but there is possible cause for long-term concern. The positive trends from Forest monitoring discussed above indicate both the pileated woodpecker and its habitat are doing well on this Forest.

Given the above evaluation of data since 1988, we conclude that current management on the Bitterroot National Forest is having little discernable negative impacts on the pileated woodpecker. Our evaluation of the 2015 detections being somewhat above the five-year average indicates current management practices are appropriate. Suitable habitat appears to be well distributed across the Forest, river basin, and Region. Most of the Forest's recent management activities in lower elevation forests emphasize restoration of mature ponderosa pine habitats, which should benefit pileated woodpeckers over time.

REFERENCES:

- Samson, F. B. 2005 (amended March 6, 2006). Conservation assessment of the northern goshawk, black-backed woodpecker, flammulated owl, and pileated woodpecker in the Northern Region, USDA Forest Service. Unpublished report on file, Northern Region, Missoula, Montana, USA.
- Samson, F.B. 2006. Habitat estimates for maintaining viable populations of the northern goshawk, black-backed woodpecker, flammulated owl, pileated woodpecker, American marten and fisher. USDA Forest Service. Unpublished report on file, Northern Region, Missoula, Montana, USA.

