

# Dispersion of Black-backed Woodpecker Nests Around an Apparent Communal Feeding Area

Beth Siverhus, Contract Surveyor to Minnesota DNR, Warroad, MN

Michael R. North, Minnesota DNR, 1601 Minnesota Drive, Brainerd, MN 56401

Gretchen Mehmel, Minnesota DNR, Red Lake Wildlife Management Area, Box 100, Roosevelt, MN 56673

## Introduction

One of the goals of the Beltrami Island Land Utilization Project (LUP) Comprehensive Conservation Management Plan (MNDNR/USFWS 2013) is to "Implement a robust research, inventory, and monitoring program." One of the strategies for accomplishing this goal is to "study all aspects of three-toed woodpecker and black-backed woodpecker ecology when opportunities arise, including use of flooded areas created by beaver activity." In 2021, the Minnesota DNR utilized LUP funds to let two contracts for locating and monitoring nests and habitat use by black-backed (BBWO, *Picoides dorsalis*) and three-toed woodpeckers (*P. dorsalis*) in the Beltrami Island LUP area. In 2021, a black-backed woodpecker (BBWO) activity center was discovered around a stand of dead red and jack pine (*Pinus resinosa*, *P. banksiana*) that had been killed by floodwater from an intense rainstorm in 2019.

## Methods

In 2021, two contractors were assigned areas to survey by randomly walking potential habitat in order to find black-backed and/or three-toed woodpeckers, and to follow-up on discoveries to document habitat use and timing of reproduction. Assigned areas were based on previous indications of species' use of the areas, based on previous observations reported by DNR staff, cooperators or the public. Black-backed woodpeckers are known to nest in June in upland and lowland conifer settings, and limited evidence suggested that three-toed woodpeckers may routinely nest later, well into July (e.g., S. Kolbe, NRRI, personal communication; MRN, personal observation).

Following discovery of woodpecker use areas, contractors made periodic revisits to locate and follow-up on nests and/or marked birds. Nests were located primarily by listening for begging young, but also by looking for cavities or following adults. Adults at 1 nest were captured with mist nets and fitted with U.S.G.S. aluminum bands and single colored 4.0-mm Darvic bands from Avinet. The intended protocol is to give each member of a pair the same color leg band on the same leg, since males and females can be distinguished by the presence or absence of a yellow crown.

Bird and nest locations were recorded with GPS devices. A Browning Recon Force trail camera was set up about 10 m from 1 nest.

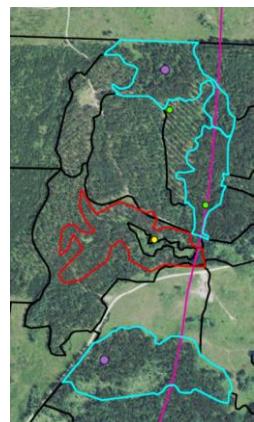


Figure 1. Foraging area (around yellow dot) in flood-killed area (red polygon) in relation to two black-backed woodpecker nests (green dots) adjacent to the 2014 Palsburg burn area (right of purple line). Blue polygons depict 52-, 65-, and 71-year old jack pine stands used by black-backed woodpeckers. Purple dots indicate additional black-backed woodpecker sightings not affiliated with a known nest.



Figure 2. Flood-killed trees that served as communal feeding area by multiple pairs of black-backed and other woodpecker species.

## Results

On 1 June B. Siverhus (BS) located 2 female BBWO and 1 male hairy woodpecker (HAWO, *P. villosus*) foraging among dead red and jack pines in a 46-year-old (mostly) red pine plantation along the Black's-Winner Forest Road (FR), 6.25 km south of the Thompson FR (Figure 1), on DNR Forestry-administered timberlands.

On 7 June BS found 1 male and 1 female BBWO feeding within 20 feet of one another, then on the same tree for awhile in the flood-killed trees (Figure 2). The male was seen first at 07:40, and the female arrived an hour later. Neither traveled in a specific direction with food (which would have indicated feeding young). Collectively, the observations suggest the female had been incubating eggs prior to her arrival. Wood boring beetles were audible in the dead trees the woodpeckers were foraging among.

On 11 June BS and GM found 1 male and 2 female BBWO and 1 HAWO feeding among the flood-killed trees.

On 15 June BS and K. Guggisberg found 1 male and 1 female BBWO feeding among the flood-killed trees, and noted that they seemed unusually wary.

On 17 June BS found 1 male and 2 female BBWO and 3 HAWO feeding among the flood-killed trees. The HAWO were flying off with grubs (i.e., feeding nestlings). The female BBWO were also noted feeding in rows of slash left behind from thinning in the red pine stands in 2020.

On 20 June BS and J. Siverhus found a dead jack pine that contained several woodpecker cavities at the edge of the 2014 Palsburg burn, including one cavity that appeared to be fresh. They also found 3 BBWO, 3 HAWO, 1 downy woodpecker (*P. pubescens*), and 1 northern flicker (NOFL, *Colaptes auratus*) foraging among the dead pines.

On 22 June BS and K. Guggisberg located an active nest in a 52-year-old red pine plantation on DNR Forestry-administered timberlands. The nest was 2.3 m above ground in a 21.0 cm dbh dead jack pine snag.

On 25 June MRN and BS captured both the male and female adults with a mist net strung in front of the cavity, and fitted each of them with a yellow Darvic band on the left leg (Figure 3). The female was an after-second-year (ASY) bird, weight 71.94 g, wing length 122 mm; the male was an ASY bird, weight 73.58 g, wing length 125 mm). A trail camera was set up on the nest. The young in the nest were originally detected from 35 m, but later in the day they could be heard from 95 m.

The potential nest tree found by J. Siverhus was revisited and found to be active. Young could initially be heard from only 1 m, but became more vocal when adults returned to feed the young. The nest was 7 m above ground in a 19.2 cm dbh dead jack pine in a savannah-like 52-year-old jack pine stand, at the margin of the Palsburg burn area. The nest was too high to capture adults with a mist net. The male had black primaries (ASY) whereas the female had distinctly brown primaries (second year). The female was too young to have nested in this tree prior, but the male could have. (A female blue-headed vireo [*Vireo solitarius*] was found on a nest in a 1-inch dbh 2-m tall dead jack pine 4 m from the woodpecker nest). The two BBWO nests were 310 m (0.2 miles) apart.

Following discovery of the second nest, JS and MRN walked through the flood-killed red and jack pine stand and observed 1 unbanded male, 1 unbanded female, and the color-banded male woodpeckers. The color-banded male was observed 435 m (0.27 miles) from his nest.

On 26 June the trail camera picked up a red-tailed hawk (*Buteo jamaicensis*) attempting unsuccessfully to extract nestlings from the cavity (Figure 4). The hawk was being scolded by blue jays (*Cyanocitta cristata*) and an American robin (*Turdus migratorius*), but not by the adult woodpeckers.

On 28 June BS and GM found 1 unbanded male and 1 unbanded female BBWO and 1 male BBWO that appeared to be banded feeding among the flood-killed trees. There was no activity at the first nest. Young were still begging for food from second nest. A third fresh, inactive cavity was found in a 71-year-old jack pine stand just 45 m north of the first nest's location.

On 29 June BS found 1 unbanded male and 1 unbanded female BBWO and the banded male BBWO feeding among the dead trees. The banded male foraged alone for 25 minutes and did not seem to be feeding young. Young were still begging for food from second nest.

On 30 June BS found 1 unbanded male and 1 unbanded female BBWO and 1 male and 1 female HAWO feeding among the dead trees. Young were still begging for food from second nest. A BBWO was heard calling from a 65-year-old jack pine stand 0.4 km (0.25 mi) south of the flood-killed tree area.

On 6 and 7 July the young at the second nest were still begging for food and could be heard from as far away as 157 m by MRN. Black-backed and hairy woodpeckers and a family group of 5 NOFL were feeding in the flood-killed pines.

On 29 July BS located at least 3 family groups foraging in the flood-killed pines. These included one unbanded adult male feeding a young male, another unbanded adult male foraging with a young male, and one unbanded adult female feeding a young female and a young male. Long-horned beetles (*Cerambycidae*) were audible as they crushed on wood. This was the last survey to look for woodpeckers related to the nesting season.

In early fall DNR Forestry had about 5 ha (14.5 ac) of the dead trees salvage logged with the intent of removing the long-horned beetles and replanting live trees. During a site visit on 12 August to comment on the proposed sale, Charlie Tucker (Red Lake WMA Asst. Manager) observed a pair of BBWO foraging among the dead trees; this was the last date that black-backed woodpeckers were observed at the site.

It is also worth noting that in June BS located BBWO foraging in two locations 3.7 and 5.8 km (2.3 and 3.6 mi) south of the study site. These birds were using 62- and 67-year-old jack pine stands and a 57-year-old red pine plantation.

## Discussion

At least 2, and up to 4, pairs of black-backed woodpeckers nested in upland red pine and jack pine stands around a communal feeding area that consisted of about 5 ha of pines killed by flash-flooding in 2019. They also foraged in slash rows left behind from thinning a red pine plantation in 2020. Stands used for foraging and nesting were 46-71 year-old jack pine and red pine plantation stands that created a savannah-like setting through thinnings, fires, and adjacent clearcut harvests.

The only efficient method to find woodpecker nests is to listen for nestlings begging for food. Apparently this attracts predators as well. Installing motion-detecting cameras directed toward nest cavities has the potential for identifying nest predators and their success rates, as well as feeding rates by adults.

In 2022 we intend to document the response of the woodpeckers to the loss of their foraging area. We will continue to survey the area to determine if woodpeckers will still utilize the area or abandon it (i.e., disperse elsewhere). A few dead pines still remain along the margin and within the surrounding matrix of forest, and black-backed woodpeckers will re-nest in the same area in consecutive years (North 2020). We also intend to install cameras at nests and to possibly radio-track adults to document their foraging territories and post-nesting dispersal.

Management techniques that might benefit black-backed woodpeckers in this area include leaving slash from pine plantation thinnings in windrows, creating savannah-like landscapes, leaving clusters of dead trees for at least 2-3 years before salvaging (see Kelly et al. 2018), and managing LUP lands to provide older jack pine stands and clusters of dead trees (through intentional killing) as reserves in this sandy landscape of relatively young upland conifers.

Acknowledgements We thank Jeff Siverhus and Kris Guggisberg for their occasional field assistance in nest searching.

## References

Kelly, J.J., Q.S. Latif, V.A. Saab, and T.T. Veblen. 2018. Spruce beetle outbreaks guide American three-toed woodpecker *Picoides dorsalis* occupancy patterns in subalpine forests. *Ibis* 2018:1-12.

MNDNR/USFWS. 2013. Beltrami Island Land Utilization Project Comprehensive Conservation Management Plan.

North, M.R. 2020. Significant recoveries of banded birds. *North American Bird Bander* 45:130-134.



Figure 3. Color-banded male black-backed woodpecker from Nest 1.



Figure 4. Red-tailed hawk caught on trail camera attempting to take nestlings from Nest 1.