

Pileated Woodpecker, *Dryocopus pileatus*

Dan Gleason

Nest sites:

Most nests are in dead conifers found in mature coniferous forests. Occasionally nests are in old, rotting deciduous trees, mostly big leaf maple and alder, but sometimes old oak trees may be used. In Douglas-fir forests, nest holes average about 20 m above the ground but are often much lower in deciduous trees. I have seen nests as low as 1.5 m in oak trees. Nest trees average dbh is 69 cm. (Bull & Jackson, 1995).

Enough habitat must be available for new nests to be excavated by a resident pair each year. Old nest sites are never reused for nesting but may be enlarged for roosting in subsequent years.

Nest hole:

Usually oval; approximately 9 cm horizontal by 11.5 cm vertical and frequently faces south or east.

Roost site:

Entrance hole is similar in size and shape to nest hole but cavity within is typically larger than nest cavity and may have multiple entrances which helps birds elude predators. Most of the cavity itself is not excavated by the woodpeckers but is the hollow formed as the tree ages and rots from fungal activity.

Habitat:

In western Oregon, mature Douglas-fir forests are preferred. Nesting and roosting occurs in coniferous forests with stands greater than 70 years of age, and closed canopies. Often forages in riparian areas of mixed coniferous and deciduous woodlands where the conifers average age is greater than 40 years.

Foraging excavations:

Large rectangular holes deep into the trunk and often more than 30 cm in length. As the birds continue to excavate, these holes may merge into one another, forming even larger holes. Exploratory excavations and early holes are round (2.5 to 8 cm), shallow and conical and there is usually evidence of newly exposed bark around the hole. Often, these holes are clustered together. Foraging holes may be at any height but are usually near the base of the tree or on a fallen, decaying log.

Food:

The primary food is carpenter ants. Wood-boring beetle larvae, some termites and other insects are also eaten. Fruits and nuts are frequently eaten as they become available. These fruits include: blackberry (*Rubus sp.*), poisonoak (*Rhus diversiloba*), American holly (*Ilex opaca*), dogwood (*Cornus spp.*) and others.

Non-vocal sounds:

Drumming is irregular and much slower than other woodpeckers. It is usually loud and resonant but can be soft, especially when excavating in soft, rotting wood. Single and double taps are heard at times. These short tappings are various forms of communication between mates.

When Pileated Woodpeckers are not directly seen or heard, their presence is detectable by the presence of large foraging holes. Once carpenter ants are found, a pair of birds will usually continue to feed on them for several years. If carpenter ants are found in appropriate habitat, it is likely that evidence of Pileated Woodpeckers will be nearby, either foraging holes or roost and nest cavities.

Pileated Woodpeckers are non-migratory and mate for life. A mated pair will maintain a territory throughout the year. If one of the pair dies, the other remains in the territory and awaits the arrival of an unmated bird that is not yet on an established territory. Foraging territories may have some overlap but nesting territories do not.



Pileated Woodpecker, male
Illustration © 2006
Barbara Gleason,
All rights reserved.

Bull, E. L., and J. E. Jackson. 1995. Pileated Woodpecker (*Dryocopus pileatus*). In *The Birds of North America*, No. 148 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, D.C.

Foraging Excavations of Pileated Woodpeckers.

Photos © Dan Gleason, 2004



Deep rectangular holes are characteristic of foraging activity by Pileated Woodpeckers. Some holes are taller than those shown here and often holes become combined to form extensive excavations.



This shows the beginnings of Pileated Woodpecker excavations. Sometimes these are abandoned if there is no adequate supply of carpenter ants.



These holes will become more rectangular as the woodpeckers continue to feed here.



This hole was made by Pileated Woodpecker but is somewhat unusual in that the rectangular shape of the hole usually forms after more extensive excavation.

Pileated Woodpecker – Additional notes of requirements in western Oregon.

Dan Gleason

Nesting and foraging habitats of Pileated Woodpeckers, *Dryocopus pileatus*, overlap to a considerable degree but foraging requirements are not as narrow as nesting. Pileated Woodpeckers will forage in younger forests with adequate cover and availability of food. Carpenter ants are the primary food eaten. This requires large trees with thickened bark near the base where the ants are typically found or snags and downed logs that may sustain a population of these ants. Foraging in younger and more open areas may be more frequent late summer or early fall as some alternate foods become available. These foods include the berries of poison-oak, dogwood, holly and some other fruits that are occasionally taken. Beetle larvae are also eaten and are second only to ants in importance. Nuts, such as acorns, are also eaten in season.

Habitats lacking these foods will be avoided. All regularly used foraging areas (including the nesting habitat) must have a constant supply of food as Pileated Woodpeckers are not known to store food.

The primary nesting sites are mid to late successional forests. Young stands can be used if they contain a significant number of large remnant trees or snags. Trees typically selected for nesting are usually in early stages of heart-rot. With late stages of rot, the trees cannot provide enough structural support and are at risk of breaking at the site of the excavation. This means that it is usually the larger trees that are selected. Older trees can also provide more structure around the nest and

increase thermal retention where smaller diameter trees result in thinner walls (after excavation) and have lower heat retention.

Since Pileated Woodpeckers excavate a new cavity each year, a large supply of snags or suitable trees must always be available. Studies of birds in eastern portions of North America show use of trees with smaller diameter than those used by birds in the Pacific Northwest. In Oregon, habitats should contain snags or suitable nest trees greater than 20 inch dbh and these snags should be of sound character so that they can support the type of excavation done by Pileated Woodpeckers. Within the territory of a nesting pair, at least three snags per year are needed to meet nesting and roosting requirements and it is suggested that a reserve of fifteen snags (per year) be available as all snags will not be used or found acceptable by the birds. (Schroeder, 1982) One to two roost cavities are excavated each year in addition to the nest cavity.

Throughout the year, a closed canopy is of higher value to woodpeckers. This is more important at higher elevations when snow can cover stumps and downed foraging logs during the winter months. This is much less of an issue here in the Willamette Valley. Large, open tracts of woodlands are typically avoided by woodpeckers. I have seen Pileated Woodpeckers in open regions that are adjacent to the forest, using old snags or even powerline poles. These resonate loudly when struck and are sometimes used for communication drumming.

In addition to the woodpeckers themselves, the cavities that they excavate are also used in later years by other species. I do not know which, if any species, may use old woodpecker holes, although I would be very surprised if none did. Species known to use excavations in Oregon or other western localities include (from Schroeder, 1982):

Wood Duck, *Aix sponsa*
Common Goldeneye, *Bucephala clangula*
Bufflehead, *Bucephala albeola*
Hooded Merganser, *Lophodytes cucullatus*
Common Merganser, *Mergus merganser*
American Kestrel, *Falco sparverius*
Flammulated Owl, *Otus flammeolus*
Western Screech-Owl, *Megascops kennicottii*
Northern Pygmy-Owl, *Glaucidium gnoma* Weste
Boreal Owl, *Aegolius funereus*
Northern Saw-whet Owl, *Aegolius acadicus*
Vaux's Swift, *Chaetura vauxi*
Hairy Woodpecker, *Picoides villosus*
Northern Flicker, *Colaptes auratus*
Brown Creeper, *Certhia americana*
Silver-haired bat, *Lasionycteris noctivagans*
Big brown bat, *Eptesicus fuscus*
Douglas' squirrel, *Tamiasciurus douglasii*
Red squirrel, *Tamiasciurus hudsonicus*
Northern flying squirrel, *Glaucomys sabrinus*
Bushy-tailed woodrat, *Neotoma cinerea*
Ringtail, *Bassariscus astutus*
American marten, *Martes americana*
Fisher, *Martes pennanti*

Schroeder, R. L. 1982. Habitat suitability index models: Pileated woodpecker. U.S. Dept. Int., Fish Wildl. Serv. FWS/OBS-82/10.39.