Dying Elms: Boon to Woodpeckers

*Lawrence W. Kilham**

Woodpeckers in general are not attracted to young, healthy woodlands but rather to mature forests where large trees provide dead and dying limbs and tops broken by the wind, such as harbor wood-boring larvae of beetles and other insects. Sometimes wind storms or tree diseases provide similar situations. This is eminently true of the Dutch Elm disease which, however, lamentable to us, has been a boon to the woodpeckers. Their benefactor, if one can see good in tragedy, is the elm bark beetle. This eighth-of-an-inch long invader from Europe was harmless until it linked up with *Ceratocystis ulmi,* the team of beetle plus fungus then setting out on a career of conquest that, in its wake, has provided woodpeckers with large populations of beetle larvae on which to feed as well as with a goodly supply of stubs for nesting, a supply that has now lasted for many years.

All this, to again be perverse in seeing the good in the bad, turned out most providential for me as well, when, sixteen years ago, I set out to learn all I could about woodpeckers. It was the feeding of Downy Woodpeckers that first caught my attention. Diseased elms are recognizable by the engraving of multi-branching tunnels that the beetles provide for their eggs and larvae and between 1956 and 1961, while living in Maryland, I sometimes noted as many as four Downy Woodpeckers feeding on a single elm. Wherever the woodpeckers were working, they chipped off outer layers, revealing a bright, fawn-colored inner bark.

When I moved to New Hampshire in 1961 I became particularly interested in studying the breeding, feeding and other habits of Hairy Woodpeckers. It was not long before I found that elms, which are tunneled by the larger American elm beetle in northern states, were an optimal place to find them. As I kept records of what I saw a remarkable fact emerged In an initial study from August through November, I found that nineteen of twenty Hairy Woodpeckers feeding on diseased elms were females The trees were not visited much by the woodpeckers in December and January, but they were coming to them again in February and from then through April, when nesting began, I found females on thirty-one occasions and males on only two These findings led me to study these woodpeckers on a variety of trees. What emerged again was that male and female Hairy Woodpeckers had different feeding habits. Females, as I have noted repeatedly, are the most restless as they move from tree to tree scaling bark or digging out superficial prey. A male, in contrast, is more deliberate. He will look about carefully, select a strategic spot, then settle down to excavate for twenty minutes or more, finding larger prey lying deeper in dead and rotting wood. I might never have noted this difference in feeding habits had it not been for the dying elms.

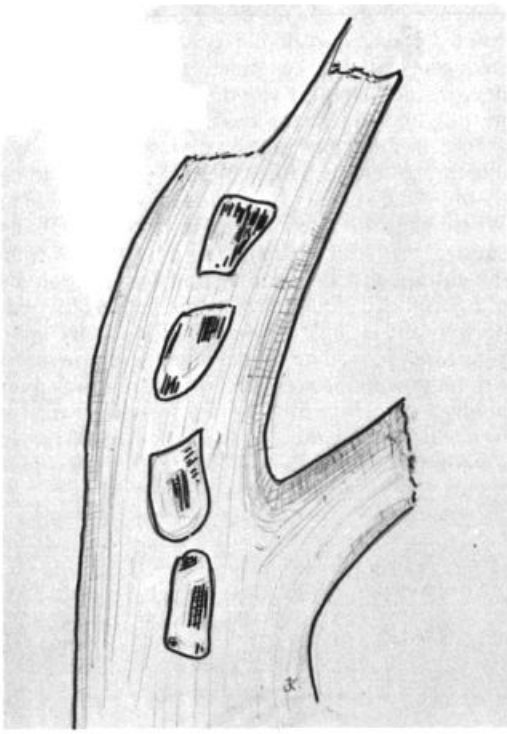
Relatively few observations have ever been made on differences in feeding habits between males and females of any avian species. The best known accounts are those on the extinct Huia of New Zealand. The female Huia had a long, curved bill suited to pulling beetle larvae from their tunnels in old logs while her mate had a shorter, straight bill more suitable for digging Could Hairy Woodpeckers also have bill differences? An unexpected result of the publication of my findings was a statement by a professional ornithologist, who had been measuring the bills of museum specimens, that there is on the average a ten percent difference in bill length between the male and female Hairy Woodpecker

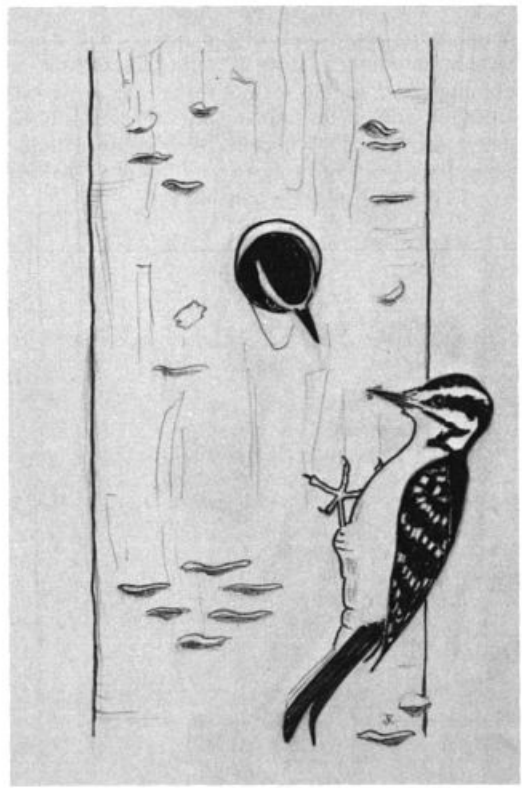
***Dept. of Microbiology, Dartmouth Medical School, Hanover, N.H. 03755.**

One might ask why male and female Hairy Woodpeckers should have differences in feeding habits. What might the survival advantages be in terms of natural selection? A usual explanation is that the two birds are able to use the resources of their habitat more effectively, one sex not competing with the other in finding prey. I have come to believe, however, that other factors may operate as well in the case of the Hairy Woodpeckers. These birds have a long period of courtship beginning in January. The fact that they do not compete for food enables them to feed and travel together without competition such as might disturb a close and intimate pair bond.

After elms have been dead for some years the larger stubs become attractive to Pileated Woodpeckers. If one happens to have such a stub in his back yard he may have unusual opportunities for watching these magnificent, but seldom seen birds. Pileateds make hugh bathtub shaped excavations, sometimes one to three feet high, four inches or more wide, and 5 to 6 inches deep. I found one making such an excavation early one morning in March and when I returned in four hours the woodpecker was still working in the same place. The pile of chips on the ground below was considerable. While Pileated Woodpeckers dig for the tunnels of carpenter ants in such trees as hemlock and white pine, in dead elms they may, among other prey, be after the large, tunneling larvae of the pigeon horntail.

I have found over a number of years that dead elms provide woodpeckers with nesting as well as feeding places. The nesting species include the Pileated, Hairy, Downy and Red-bellied Woodpeckers, the flicker, and the Yellow-bellied Sapsucker. If the stub used stands in the open, the woodpeckers are likely to come to grief. Starlings, with devilish ingenuity, wait until a Hairy, a flicker, or a Red-bellied Woodpecker has completed a nest cavity, then dispossess them with persistent attacks. The Starlings invariably win. The woodpeckers are more successful when they select stubs within woods, for Starlings avoid nest holes that are partly concealed by leafy branches.





Illustrations / Lawrence W. Kilham

One of the difficulties of being an amateur in spring is to have enough time, before or after work and on weekends, to sit and watch courtship and nesting activities. Before many years of woodpecker watching I became aware of one way to lose time. This was to follow a series of nests scattered, sometimes miles apart, on

wooded hillsides. In the last few years the dead elms have come to my rescue. Only 300 yards from our house is a wooded swamp of three to four acres containing many dead and dying elms. By concentrating on this in the spring of 1971 I found the nests of a pair of Downies, a pair of Hairies, and one of flickers all within a relatively small area. Trails built from one to the other enabled me to watch them all most effectively. In the following year my wife and I did even better. We now found nests, all in elm stubs, of Downy, Hairy, Yellow-bellied Sapsucker and of another holenester, the Red-breasted Nuthatch. But this was not the end of our success. My wife found the nest of a Hairy Woodpecker high up in a giant dead elm in a half-overgrown lumber clearing not far away. When I unfolded the aluminum chair I use for bird watching, in a thicket where I had a good view, I soon discovered that not only a pair of flickers were nesting in the same elm as the woodpeckers but that a pair of sapsuckers had a nest hole in an adjacent stub. I could thus follow the comings and goings of all three species while sitting in one place. On another morning I found that a pair of Downies as well as of chickadees were nesting in smaller elm stubs, making five nest holes in one clearing.

Every one of the twelve nests found in 1971 and 1972 was successful with one exception. Some predator broke open the nest of the Red-breasted Nuthatches. These energetic little birds, however, promptly re-nested and successfully, in another elm.

The pleasure we take in sitting and watching birds in a lumber clearing or wooded swamp in spring may seem tame to those who prefer to be in a group and on the go. But nature is not to be hurried. Sitting quietly for a half hour or an hour at a time we have seen many things in addition to the comings and goings of the woodpeckers and nuthatches. There is quiet enjoyment in just watching the unfolding of ferns and flowers, in having a Yellowthroat come within a few feet, or in the swamp, to see the Northern Waterthrush teetering like a small sandpiper as it deftly reaches into the water of a dark pool to catch one mosquito larva after another. These are the small and usual things. On rarer occasions a deer has come close and once, while watching a flicker's nest, I heard a heavy crashing as a black bear came into a cleared space fifty feet away.

In these hours of quiet watching one comes to have a sense of the interrelations of living things. Spores of a fungus that have little means of traveling on their own adhere to a passing bark beetle that carries them well under the bark of another elm. Here they proliferate, killing branches which give more places where the beetles can lay their eggs. Elms die, woodpeckers come to feed and years later to nest. They cannot, however, nest in any dead elm. It takes the concurrence of other kinds of fungi before the dead wood becomes workable enough for even the strongest woodpecker bill to excavate a cavity deep inside. After the woodpeckers have finished nesting and the young have left, the history of a hole is far from ended. Red squirrels move into those left by Hairy Woodpeckers, finding them a secure place to have and raise their young. When I tap on such a tree in winter, a flying squirrel may look out, his round head just fitting the entrance. It is in winter that I go the rounds of my stubs to study the roosting habits of woodpeckers and nuthatches that continue to use them year after year. The dying elms have now been a boon to woodpeckers and other creatures over many years. Unsightly as they are, they can also be a boon to the naturalist who likes to find things to look for close to home.