

Woodpeckers

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Identification

Woodpeckers belong to the order Piciformes and the family Picidae, which also includes flickers and sapsuckers. Twenty one species inhabit the United States. Woodpeckers have short legs with two sharp clawed, backward pointed toes and stiff tail feathers, which serve as a supportive prop. These physical traits enable them to cling easily to the trunks and branches of trees, wood siding, or utility poles



Red headed woodpecker
Photo by: John Kormendy, The University of Texas at Austin



Downy woodpecker
Photo by: Dave Herr, USDA Forest Service

while pecking. They have stout, sharply pointed beaks for pecking into wood and a specially developed long tongue that can be extended a considerable distance. The tongue is used to dislodge larvae or ants from their burrows in wood or bark.

Woodpeckers are 7 to 15 inches (18 to 38 cm) in length, and usually have brightly contrasting coloration. Most males have some red on the head, and many species have black and white marks. Identification of species by their markings is quite easy. In most species, flight is usually undulating, with wings folded against the body after each burst of flaps.

Range

Woodpeckers are found throughout the United States. The three most widely distributed species are the hairy woodpecker (*Picoides villosus*), the downy woodpecker (*P. pubescens*, Fig. 1), and the yellow bellied sapsucker (*Sphyrapicus varius*). Different species are responsible for damage in different regions.

Habitat

Because they are dependent on trees for shelter and food, woodpeckers are found mostly in or on the edge of wooded areas. They nest in cavities chiseled into tree trunks, branches, or structures, or use natural or preexisting cavities. Many species nest in human made structures, and have thus extended their habitat to include wooden fence posts, utility poles, and buildings. Because of this, woodpeckers may be found in localities where trees are scarce in the immediate vicinity.

Food Habits

Most woodpeckers feed on tree living or wood boring insects; however, some feed on a variety of other insects. Some flickers obtain the majority of their food by feeding on insects from the ground, especially ants. Others feed primarily on vegetable matter, such as native berries, fruit, nuts, and certain seeds. In some areas, the diet includes cultivated fruit and nuts. The sapsuckers, as the name suggests, feed extensively on tree sap as well as insects.

General Biology, Reproduction, and Behavior

Woodpeckers are an interesting and familiar group of birds. Their ability to peck into trees in search of food or excavate nest cavities is well known. They prefer snags or partially dead trees for nesting sites, and readily peck holes in trees and wood structures in search of insects beneath the surface. One common misconception is that they peck holes in buildings only in search of insects. While they do obtain insects by this means, many species will drill holes in sound dry wood of buildings, utility poles, and fence posts where few or no insects exist. The acorn woodpecker (*Melanerpes formicivorus*) drills holes in wood simply to store acorns. When sapsuckers drill their numerous rows of 1/4-inch (0.6-cm) holes in healthy trees they are primarily after sap and the insects entrapped by the sap.

Woodpeckers have characteristic calls, but they also use a rhythmic pecking sequence to make their presence known. Referred to as "drumming," it establishes their territories and apparently attracts or signals mates. Drumming is generally done on resonant dead tree trunks or limbs; however, buildings and utility poles may also be used.

Woodpeckers breed in the spring, commonly laying in the range of 3 to 5 or 4 to 6 eggs. The incubation period is generally short, lasting from 11 to 14 days. It may be longer for larger species. Most species are born naked; some are born downy. All are tended by both parents. Having 2 broods per year is fairly common and some species may have 3 broods. Apparently, both sexes sleep in cavities throughout the year.

Some species, such as the northern flicker (*Colaptes auratus*) and the red headed woodpecker (*Melanerpes erythrocephalus*, Fig. 1), are migratory, but most live year round in the same area. Most species live in small social groups; a few, such as the Lewis' woodpecker (*Melanerpes lewis*), may, in certain seasons, occasionally be seen in flocks of several hundred.

Damage and Damage Identification

Woodpecker damage to buildings is a relatively infrequent problem nationwide, but may be significant regionally and locally. Houses or buildings with wood exteriors in suburbs near wooded areas or in rural wooded settings are most apt to suffer pecking and hole damage. Generally, damage to a building involves only one or two birds, but it may involve up to six or eight during a season. Most of the damage occurs from February through June, which corresponds with the breeding season and the period of territory establishment.

The following species of woodpeckers are most generally involved in damaging homes or other wooden, human made structures:

Common name	Scientific name
Red headed	<i>Melanerpes erythrocephalus</i>
Acorn	<i>Melanerpes formicivorus</i>
Golden fronted	<i>Melanerpes aurifrons</i>
Red bellied	<i>Melanerpes carolinus</i>
Ladder backed	<i>Picoides scalaris</i>
Downy	<i>Picoides pubescens</i>
Hairy	<i>Picoides villosus</i>
Red cockaded	<i>Picoides borealis</i>
Northern flicker	<i>Colaptes auratus</i>
Pileated	<i>Dryocopus pileatus</i>

Woodpeckers can be particularly destructive to summer or vacation homes that are vacant during part of the year, since their attacks often go undetected until serious damage has occurred. For the same reason, barns and other wooden outbuildings may also suffer severe damage.

Damage to wooden buildings may take one of several forms. Holes may be drilled into

wood siding, eaves, window frames, and trim boards. Woodpeckers prefer cedar and redwood siding, but will damage pine, fir, cypress, and others when the choices are limited. Natural or stained wood surfaces are preferred over painted wood, and newer houses in an area are often primary targets. Particularly vulnerable to damage are rustic appearing, channeled (grooved to simulate reverse board and batten) plywoods with cedar or redwood veneers. Imperfections (core gaps) in the intercore plywood layers exposed by the vertical grooves may harbor insects. The woodpeckers often break out these core gaps, leaving characteristic narrow horizontal damage patterns in their search for insects.

If a suitable cavity results from woodpecker activities, it may also be used for roosting or nesting.

The acorn woodpecker, found in the West and Southwest, is responsible for drilling closely spaced holes just large enough to accommodate one acorn each. Wedging acorns between or beneath roof shakes and filling unscreened rooftop plumbing vents with acorns are also common activities.

Relatively new damage problems are arising where damage susceptible materials such as plastic are used for rooftop water heating solar panels or where electrical solar panels are used. Woodpeckers have also reportedly damaged elevated plastic irrigation lines in several vineyards in California.

Widespread damage from nest cavities and acorn holes in utility poles in some regions has necessitated frequent and costly replacement of weakened poles. Similar damage to wooden fence posts can also be a serious problem for some farmers and ranchers. Occasionally, woodpeckers learn that beehives offer an extraordinary food resource and drill into them.

Drumming, the term given to the sound of pecking in rapid rhythmic succession on metal or wood, causes little damage other than possible paint removal on metal surfaces; however, the noise can often be heard throughout the house and becomes quite annoying, especially in the early morning hours when occupants are still asleep. Drumming is predominantly a springtime activity. Drumming substrates are apparently selected on the basis of the resonant qualities. They often include metal surfaces such as metal gutters, downspouts, chimney caps, TV antennas, rooftop plumbing vents, and metal roof valleys. Drumming may occur a number of times during a single day, and the activity may go on for some days or months. Wood surfaces may be disfigured from drumming but the damage may not be severe.

Sapsuckers bore a series of parallel rows of 1/4- to 3/8-inch (0.6- to 1.0- cm) closely spaced holes in the bark of limbs or trunks of healthy trees and use their tongues to remove the sap (Fig. 2). The birds usually feed on a few favorite ornamental or fruit trees. Nearby trees of the same species may be untouched. Holes may be enlarged through continued pecking or limb growth, and large patches of bark may be removed or sloughed off. At times, limb and trunk girdling may kill the tree.

On forest trees, the wounds of attacked trees may attract insects as well as porcupines or tree squirrels. Feeding wounds also serve as entrances for diseases and wood decaying organisms. Wood staining fungi and bacteria may also enter the wounds, reducing the quality of the wood when cut. Woodpecker damage to hardwood trees can be costly. Wounds



cause a grade defect called "bird peck" that lowers the value of hardwoods. Damage occurs to both commercial hardwoods and soft woods. Certain tree species are preferred over others, but the list of susceptible trees is extensive.

As mentioned previously, vegetable matter makes up a good portion of the food of some woodpeckers, and native fruits and nuts play an important role in their diet. Cultivated fruits and nuts may also be consumed. Birds involved in orchard depredation are often so few in number that damage is limited to only a small percentage of the crop. The crop of a couple of isolated backyard fruit or nut trees may, however, be severely reduced prior to harvest.

In recent times, controls against wood peckers to protect commercial crops have only rarely been necessary. Published accounts suggest that these isolated instances occurred mostly in the fruit growing states of the far West where the Lewis' woodpecker (*Melanerpes lewis*), whose flocks may number several hundred, is most often implicated.



Fig. 2. Yellow bellied sapsucker, *Sphyrapicus varius*

Damage Prevention and Control Methods

Exclusion

Netting. One of the most effective methods of excluding woodpeckers from damaging wood siding beneath the eaves is to place lightweight plastic bird type netting over the area. A mesh of 3/4 inch (1.9 cm) is generally recommended. At least 3 inches (7.6 cm) of space should be left between the netting and the damaged building so that birds cannot cause damage through the mesh. The netting can also be attached to the overhanging eaves and angled back to the siding below the damaged area and secured taut but not overly tight (Fig. 3). Be sure to secure the netting so that the birds have no way to get behind it. If installed properly, the netting is barely visible from a distance and will offer a long term solution to the damage problem. If the birds move to another area of the dwelling, that too will need to be netted.

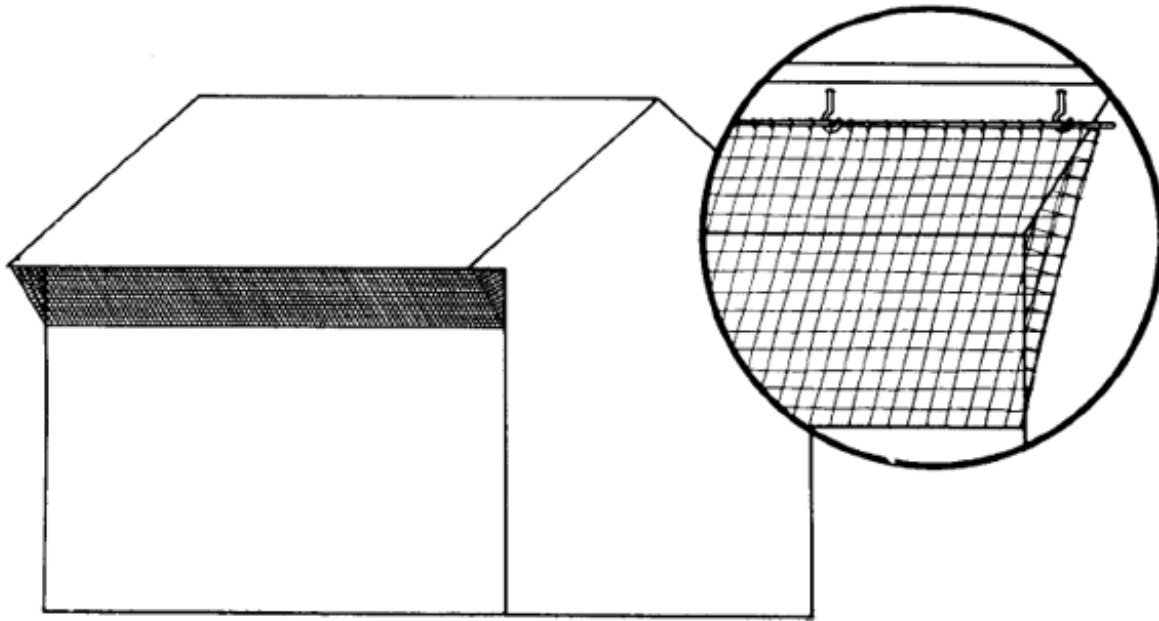


Fig. 3. Plastic netting attached to a building from the outside edge of the eave and angled back to the wood siding. Insert shows one method of attachment using hooks and wooden dowels.

Netting is becoming increasingly popular as a solution to woodpecker problems because it consistently gives desired results.

Metal barriers. Place metal sheathing or plastic sheeting over the pecked areas on building siding to offer permanent protection from continued damage. Like all repelling methods, metal barriers work best if installed as soon as damage begins. Occasionally the birds will move over to an unprotected spot and the protected area must be expanded. Aluminum flashing is easy to work with to cover damaged sites. Woodpeckers will sometimes peck through aluminum if they can secure a foothold from which to work. Metal sheathing can be disguised with paint or simulated wood grain to match the siding.

Quarter-inch (0.6-cm) hardware cloth has also been used to cover pecked areas and prevent further damage. It can be spray painted to match the color of the building. The wire can either be attached directly to the wood surface being damaged, or raised outward from the wood siding with 1-inch (2.5-cm) wood spacers.

Once the woodpeckers have been discouraged, frightened away, or killed, the damaged spots on houses should be repaired by filling in the holes with wood patch or covering them to prevent woodpeckers from being attracted to the damaged site at some future time.

Some of the harder compressed wood or wood fiber siding materials cannot be damaged by woodpeckers. Presumably, their hardness and/or smooth surface serve as deterrents. Aluminum siding can also be used as an alternative to wood siding.

To protect trees from sapsuckers, wrap barriers of 1/4-inch (0.6-cm) hardware cloth, plastic mesh, or burlap around injured areas to discourage further damage. This method may be practical for protecting high value ornamental or shade trees. In orchards and forested areas it may be best to let the sapsuckers work on one or more of their favorite trees. Discouraging them from select trees may encourage the birds to disperse to others, causing damage to a greater number of trees.

Frightening Devices

Visual. Stationary model hawks or owls, fake and simulated snakes, and owl and cat silhouettes are generally considered ineffective as repellents. Toy plastic twirlers or windmills fastened to the eaves, and aluminum foil or brightly colored plastic strips, bright tin lids, and pie pans hung from above, all of which repel by movement and/or reflection, have been used with some success, as have suspended falcon silhouettes, especially if put

in place soon after the damage starts. The twirlers and plastic strips rely on a breeze for motion. Stretching reflective mylar tape strips across a damaged area, or attaching them to the eaves and letting them hang down (weighted or unweighted) is a recent alternative to aluminum strips. Large rubber balloons with owl like eyes painted on them are included in the recent array of frightening devices used to scare woodpeckers.

A good deal of attention has recently been given to round magnifying type shaving mirrors installed over or adjacent to damaged areas to frighten woodpeckers with their larger-than-life reflections. Success is sometimes reported by those using the method and this encourages further testing. Contrarily, woodpeckers are not discouraged from damaging wooden window frames or casings very near to window panes where their own reflection would frequently be seen. In fact, some believe that seeing their own reflection intensifies the damage as a result of defensive territorial behavior.

Sound. Loud noises such as hand clapping, a toy cap pistol, and banging on a garbage can lid have been used to frighten woodpeckers away from houses. Such harassment, if repeated when the bird returns, may cause it to leave for good.

Propane exploders (gas cannons) or other commercial noise producing, frightening devices may have some merit for scaring woodpeckers from commercial orchards, at least for short periods. Because of the noise they produce, they are rarely acceptable near inhabited dwellings or residential areas. Around homes, portable radios have been played with little success in discouraging woodpeckers. Expensive high frequency sound producing devices are marketed for controlling various pest birds but rarely provide advertised results. High frequency sound is above the normal audible hearing range of humans but, unfortunately, above the range of most birds too.

Woodpeckers can be very persistent and are not easily driven from their territories or selected pecking sites. For this reason, visual or sound types of frightening devices for protecting buildings, if they are to be effective at all, should be employed as soon as the problem is identified and before territories are well established. Visual and sound devices often fail to give desired results and netting may have to be installed.

Repellents

Taste. Many chemicals that have objectionable tastes as well as odors have been tested for treating utility poles and fence posts to discourage woodpeckers. Most have proven ineffective or at least not cost effective.

Odor. Naphthalene (mothballs) is a volatile chemical that has been suggested for woodpecker control. In out-of-door unconfined areas, however, it is of doubtful merit. It is unlikely that high enough odor repelling concentrations of naphthalene could be achieved to effectively repel woodpeckers.

Odorous and somewhat toxic wood treatments, such as creosote and pentachlorophenol, which are frequently used to treat utility poles and fence posts, do not resolve the woodpecker problem.

Tactile. Sticky or tacky bird repellents such as Tanglefoot®, 4-The-Birds®, and Roost-No-More®, smeared or placed in wavy bands with a caulking gun on limbs or trunks where sapsuckers are working, will often discourage the birds from orchard, ornamental, and shade trees. These same repellents can be effective in discouraging birds if applied to wood siding and other areas of structural damage. The birds are not entrapped by the sticky substances but rather dislike the tacky footing. A word of caution: some of the sticky bird repellents will discolor painted, stained, or natural wood siding. Others may run in warm weather, leaving unsightly streaks. It is best to try out the material on a small out-of-sight area first before applying it extensively. The tacky repellents can be applied to a thin piece of pressed board, ridged clear plastic sheets, or other suitable material, which is then fastened to the area where damage is occurring.

Toxicants

Toxicants have only rarely been used to protect fruit crops. Woodpecker problems can be resolved without toxicants and none are registered for such use.

Trapping

Wooden base rat snap traps can be effective in killing the offending birds. Federal and, most likely, state permits are required. The trap is nailed to the building with the trigger downward alongside the spot sustaining the damage. The trap is baited with nut meats (walnuts, almonds, or pecans) or suet. If multiple areas are being damaged, several traps can be used.

Live traps have been tried in attempts to capture woodpeckers for possible relocation rather than killing the birds. None of those explored were very successful, and more research is needed to develop an effective woodpecker live trap.

Shooting

Where it is necessary to remove the offending birds and the proper permits have been obtained, shooting may be one of the quickest methods of dispatching one or a few birds. The discharging of firearms is often subject to local regulations in residential areas.

At close range, air rifles or .22-caliber rifles with dust shot or BB caps can be effective. Shotguns or .22-caliber rifles may be needed for birds that must be taken from greater distances. Considerable discretion must be used around dwellings. Bullets and shot can travel long distances if they miss their targets.

With appropriate permits, shooting has been occasionally used to reduce woodpecker damage in commercial fruit and nut orchards.

Other Methods

Suet. Placing suet stations near damaged buildings, especially in colder parts of the country, has been recommended to entice woodpeckers away from buildings or damaged areas. Suet offered in the warmer seasons of the year, however, may be potentially harmful to woodpeckers. The suet gets onto the feathers of the head, which may lead to matting and eventual loss of feathers. Some damage control experts believe that any feeding of birds contributes to the problem and recommend against it.

Nest boxes. All North American woodpeckers are primarily cavity nesters that excavate their own cavities, but some of these species, such as golden fronted, hairy, red bellied, and red headed woodpeckers, do occasionally use existing cavities or nest boxes (Fig. 4).

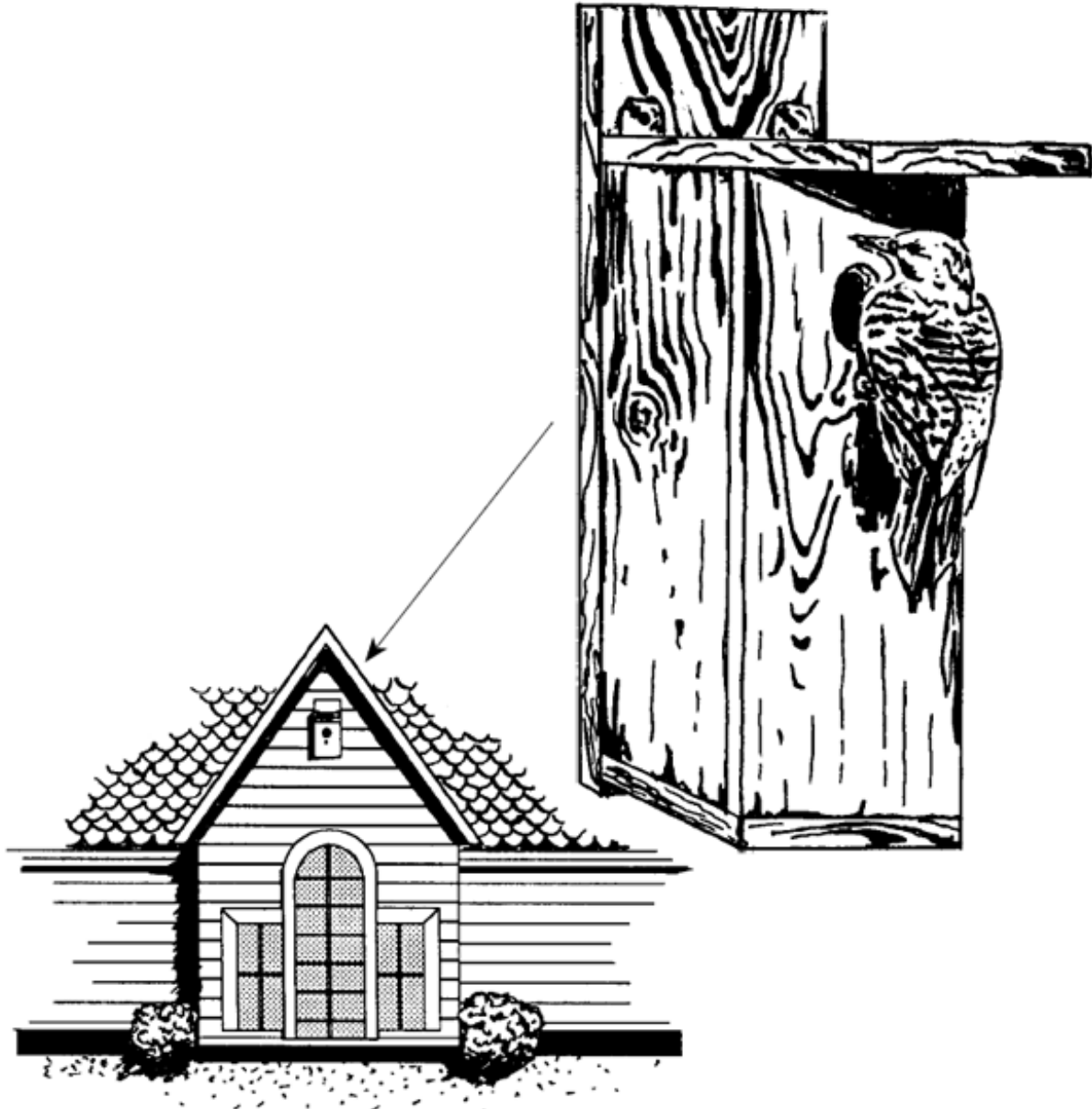


Fig. 4. Artificial nest boxes are used by some species, especially the northern flicker.

Northern flickers apparently use artificial boxes more often than any other woodpecker species. Some success has been achieved with the placement of cavity type nest boxes on the building in the vicinity of damage by northern flickers. A thick layer of sawdust should be placed in the bottom of the box; better yet, some have found that filling the box completely full of saw dust entices the bird to remove the sawdust to the desired level. Possibly, the bird is fooled into thinking it is constructing its own nest. Working against the nest box is the fact that with primary cavity nesters, the preparation of the new cavity often seems a part of the breeding ritual. New cavities are often constructed even where preexisting empty cavities are available.

The use of nest boxes is definitely worth trying in an area where visual or sound methods have failed and where woodpecker populations are desired. Nesting woodpeckers defend their territories and keep other woodpeckers away. What effect such boxes will have on increasing local woodpecker populations is unknown. Nest boxes are constructed of wood with an entrance hole 16 to 20 inches (40 to 50 cm) above the floor and about 2 1/2 inches (6 cm) in diameter. Inside floor dimensions should be about 6 x 6 inches (15 x 15 cm) and the total height of the box is 22 to 26 inches (56 to 66 cm). A front sloping hinged roof will shed rain and provide easy access. Place the boxes at about the same height as the height of the structural damage.

Insecticides for indirect control. Based on the premise that woodpeckers are after insects, some control bulletins suggest treating insect infested siding with an appropriate insecticide as a remedy for damage. While this may have some merit with insect infested wood, woodpeckers often attack siding, poles, and posts that are sound and without insects. The use of insecticides for indirect control in these instances would be unfounded. Depending on their chemical nature, insecticides may have an adverse effect on the birds. Where the situation warrants the application of an insecticide, it should be selected on the basis of its safety for birds.

Economics of Damage and Control

Little has been published on the economics of damage to buildings and other human made structures. Most of what does exist relates to damage to utility poles because companies keep good records of these losses and the cost of replacements. For example, from 1981 to 1982 the Central Missouri Electric Cooperative replaced 2,114 woodpecker damaged poles in their system at an estimated cost of \$560,000. Economic losses to the timber industry in terms of damaged trees and reduction in wood quality have also been documented in several regions. Such published information is of a localized nature; the extent of damage on a nationwide basis is unknown. Little is published on the economic damage to buildings, although it is known to be substantial in some instances. In a survey of woodpecker damage to homes, Craven (1984) reported an average loss of \$300 per bird incident. Damage to homes was estimated at \$50,000 to \$500,000 annually in Michigan, a conservative \$50,000 in Louisiana, and over \$100,000 in Wisconsin.

The economics of control are relatively unknown because in most situations it is difficult to predict what the damage might have been if no control was undertaken.

Legal Status

Woodpeckers are classified as migratory, nongame birds and are protected by the Federal Migratory Bird Treaty Act. The red cockaded woodpecker (*Picoides borealis*) and the ivory billed woodpecker (*Campephilus principalis*) are on the Endangered Species list and are thus offered full protection. When warranted, woodpeckers other than the endangered species can be killed but only under a permit issued by the Law Enforcement Division of the US Fish and Wildlife Service upon recommendation of USDA-APHIS-Animal Damage Control personnel. Generally, there must be a good case to justify issuance of a permit.

Woodpeckers are commonly protected under state laws, and in those instances a state permit may be required for measures that involve lethal control or nest destruction. Other methods of reducing woodpecker damage do not infringe upon their legal protection status. Threatened or endangered species, however, cannot be harassed.

Acknowledgments

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Figure 2 by Emily Oseas Routman.

Figure 3 from W. P. Gorenzel and T. P. Salmon (1982).

Figure 4 by Renee Lanik, University of Nebraska-Lincoln.