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WOODPECKERS: A SERIOUS SUBURBAN PROBLEM?

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ABSTRACT: Damage to homes and buildings caused by woodpeckers is a widespread and locally severe problem in vertebrate pest control. This paper describes the distribution, characteristics, and impacts of woodpecker damage as determined by questionnaires, interviews, and published accounts. Woodpecker damage results from territorial behavior, feeding, or nesting activity. Some plywood and cedar are especially vulnerable. Average loss per incident is about \$300, although some cases result in much greater losses. Disturbance and aggravation are also important factors. Abatement measures include scare devices, structural modification, chemical treatment of the siding, and shooting or trapping (with a permit). Success is variable. Recommendations to reduce the problem include a public awareness program, continued abatement research, a change in plywood production or installation procedures, and a reduction in the effort required to obtain a permit for lethal control.

INTRODUCTION

There are abundant anecdotal accounts of woodpecker damage to buildings, utility poles, and trees. However, there is a distinct lack of quantification for such damage, particularly as it pertains to homes and other buildings. The body of literature on sapsucker (*Sphyrapicus varius*) damage to trees and on utility pole damage caused by acorn woodpeckers (*Melanerpes formicivorus*) and other species is more substantial (Dennis 1964, 1967; Jorgensen et al. 1957; Rumsey 1973; Evans and Byford 1984; Marsh 1984). There are numerous fact-sheet publications produced by wildlife management agencies and state Cooperative Extension Services which summarize the problem on a local level. A recent summary was published in the Handbook of Wildlife Damage Control (Marsh 1984).

Woodpecker damage to home siding cannot be confused with damage caused by other vertebrate pests. The location on the building, the characteristic pattern of the holes, and frequently the presence of the bird(s) result in the proper diagnosis. Identification of the cause of the damage and an effective solution are far more difficult. Numerous authors have attributed the damage to territorial display, nest-site excavation, feeding behavior or some combination of the three. Several species of woodpeckers have been implicated in damage: yellow-shafted flicker (*Colaptes auratus*), pileated woodpecker (*Drycopus pileatus*), red-bellied woodpecker (*Centurus carolinus*), red-headed woodpecker (*Melanerpes erythrocephalus*), hairy woodpecker (*Dendrocopus villosus*), and downy woodpecker (*Dendrocopus pubescens*). Some building materials are more susceptible to damage than others. Damage is often extensive and costly, and homeowners experience a high degree of frustration as a result of ineffective control techniques and the legal protection afforded to the offending bird(s).

The primary objective of this paper is to provide some quantification and description of woodpecker damage to homes and buildings on a national level. Such data should demonstrate that the problem, although widely scattered, is common to all parts of the United States and can be locally severe. Also, the problem warrants additional research on damage abatement techniques and consideration of several policy changes on the part of the wood products industry and/or wildlife management.

METHODS

This paper draws on personal experience, literature review, the collective experience of numerous wildlife professionals and the results of surveys conducted in 1983. In January 1983, a news release on the subject of woodpecker damage was distributed to all Wisconsin newspapers. The release resulted in numerous requests for more information. Each request was processed and the individual was mailed a questionnaire similar to that used by Evans and Byford (1984)--see Appendix 1. A second questionnaire was mailed to all state Cooperative Extension Service Wildlife Specialists in the United States. The latter questionnaire was designed to describe the distribution and nature of the woodpecker problem rather than the details of individual cases (Appendix 1). The results of the surveys are used to describe the nature, magnitude, and distribution of the woodpecker problem and to suggest potentially productive areas of research and management.

RESULTS

Specialists from 21 states responded to the national survey (Figure 1). Although less than half of the states were represented, the responses were well distributed. A total of 50 homeowners responded to the questionnaire. About 100 additional homeowners were interviewed by telephone or provided unsolicited written accounts of their woodpecker problems

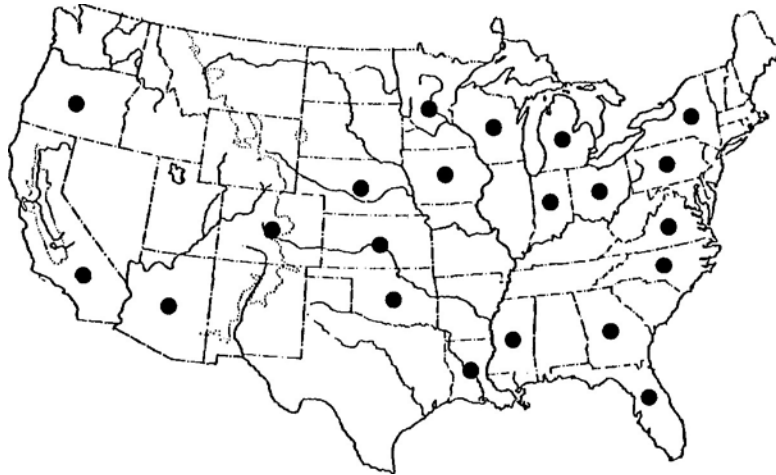


Figure 1. States from which responses were received from Extension Wildlife Specialists. Some states do not have a Specialist on staff.

The woodpeckers involved in damage are ranked in Table 1. Nationally, the common or yellow-shafted flicker is the primary species, followed by the downy and red-bellied woodpeckers. The data for Wisconsin homeowners demonstrate the variation between states. Downy and hairy woodpeckers are easily confused and were more often involved than the flicker. The flicker is a common bird in Wisconsin but most of them migrate out of the state for the winter. However, the "don't know" category for homeowners suggests that these identifications be interpreted with caution.

Table 1. Woodpeckers reported doing damage by respondents to mail surveys, 1983.

| Species ^a | Survey | |
|----------------------|----------------------|------------|
| | Wildlife Specialists | Homeowners |
| Common flicker | 14(6) ^b | 11 |
| Downy | 5(4) | 17 |
| Red-bellied | 4(2) | 2 |
| Hairy | 4(1) | 9 |
| Red-headed | 7(1) | 4 |
| Pileated | 5(1) | 1 |
| "Don't know" | -- | 14 |

^aAlso mentioned: Sapsucker, Gil a, Acorn, and Red-shafted flicker.

^bNumber of specialists who identified the species as the primary cause of problems in parentheses.

The motivation or cause of the damage varies with season, region, and building material. Specialists ranked territorial behavior, i.e., drumming to produce sound, as the primary factor. However, food-seeking ranked a close second (Table 2). Homeowners reported two distinct peaks in the incidence of damage; spring and fall, with the spring incidence about twice the fall level. Typically, spring damage is associated with territorial behavior and fall damage with food-seeking. Only 5 of 48 respondents reported damage during summer or winter. However, some spring damage may be winter food-seeking that goes unnoticed until the homeowner gets outside in the spring. In the northern states, particularly the Great Lakes region, food-seeking was identified as the major factor. In southern states, territorial behavior appeared to be more important. The acorn woodpecker presents a unique case in California. It drills holes for storage of acorns.

Table 2. Factors identified by Extension Wildlife Specialists as the cause of woodpecker damage, 1983.

| Motivation | No. Responses ^a |
|---------------------|----------------------------|
| Territorial display | 16(4) |
| Food seeking | 6(3) |
| Nesting attempt | 5(0) |
| Other | 2 |

^aNumber of specialists who identified the motivation as the most important of several causes in parentheses.

As expected, the environment around the damaged home or building was characterized as wooded suburban or rural. In Wisconsin the expansion of subdivisions into the few remaining wooded areas amidst intensive agriculture has probably intensified the woodpecker problem.

Both homeowners (Table 3) and specialists identified cedar and plywood siding as the building materials most frequently damaged. There are no data available on damage related to availability of specific building materials. It appears likely that any wood, particularly if it is not painted (Evans and Byford 1984), may be subject to damage. Grooved plywood siding seems to be very susceptible as is board and batten construction with cedar boards. The plywood siding (such as texture 1-11) problem results from a defect in the manufacture of the plywood sheets. Internal plies are separated by a slight gap (approx. 0.5cm). When the solid surface ply is grooved to simulate a reverse board and batten construction, the "core gaps" are opened to the outside. This creates tunnels throughout the sheet of plywood perpendicular to the groove. These tunnels are very attractive to insects and, in turn, to woodpeckers. The rough plywood surface provides secure footing and the tunnels provide a food supply. The result is often extensive damage in the form of perfect rows of small holes which coincide with the location of the tunnels beneath the surface ply.

Table 3. Building materials damaged by woodpeckers as reported by homeowners in Wisconsin, 1983.

| Material | No. |
|--------------|-----|
| Cedar | 22 |
| Plywood | 15 |
| Cedar shakes | 3 |
| Redwood | 2 |
| Board/Batten | 3 |
| "Wood" | 5 |
| Other | 1 |

Damage to materials other than plywood is generally in the form of one or more large holes. These holes are often located near the eaves or at the corners of the building. Evans and Byford (1984) found no strong correlation between location of damage and compass direction even though other researchers had reported non-random orientation for woodpecker nest cavities. To the homeowner, the location of the damage is of little consequence and is not a factor in the need for, or success of, control.

Construction of some holes may penetrate insulation as well as the siding. Several individuals reported that woodpeckers had gone as far as the interior dry wall. These large chambers are rarely occupied by the woodpecker but three cases in Wisconsin resulted in nesting attempts by house sparrows (*Passer domesticus*), a white-breasted nuthatch (*Sitta carolinensis*), and a chickadee (*Parus atrica pillus*)

A territorial response may result when a woodpecker sees its reflection in a window. Substantial damage (\$3000 in one case in Ohio) may result as the bird attacks the molding around the window. In Tennessee this type of damage was often caused by a pileated woodpecker (Evans and Byford 1984). In addition to the structural damage, drumming often occurs at dawn. Spring territorial drumming occurs on downspouts, chimney caps, and antennae, as well as siding. The noise created by such activity is a source of severe annoyance. Most specialists (16 of 20) reported the level of damage in their respective states as light to moderate. Four reported that damage was severe when it did occur or if only wood-sided homes were considered. All specialists reported spending less than 5% of their time devoted to animal damage control on woodpecker damage.

The economic impact of woodpecker damage has not been well documented. Homeowner responses to the questionnaire suggested a wide range of damage and a similar range of reaction to the damage. Of 23 individuals who provided a cost estimate for damage repair, the mean damage was \$300 with a range of \$40-\$1000. Most estimates were between \$150 and \$250. This mean value does not include an estimate of \$5000 for damage to cedar on a 24-unit condominium. Most respondents provided only a general response such as "lots" or "minor" rather than a dollar figure.

The homeowners' perception of the damage is misleading, however, if the actual cost of professional restoration of the pre-damage condition is considered. A common response to damage is simply filling or covering the holes with a convenient material. While the homeowner will readily admit that this solution is unsightly, complete restoration is often cited as being too expensive. Thus a cost of several dollars for a can of wood filler or a new board is an underestimate of the actual damage. In Michigan, the average cost of homeowner repair by patching was \$200, by replacing the siding was \$200-\$500, and of professional restoration \$500-\$2000 (Duderar, pers. comm.).

Extension Wildlife Specialists had a limited feel for statewide damage estimates. In Michigan, annual damage was estimated at \$50,000 to \$500,000; in Louisiana, a conservative \$50,000; and in Wisconsin, \$100,000+. Other specialists cited individual cases involving costs of up to \$3000. When contact is made with a homeowner with woodpecker damage, the homeowner often has friends or neighbors with woodpecker damage. In Tennessee, Evans and Byford (1984) reported that 43% of the people they contacted knew of other people with woodpecker damage. These data suggest that damage is widespread but not reported. Thus, damage estimates of \$100,000+ in each state are probably very conservative.

Perhaps the most important aspect of woodpecker damage is how to avoid it or stop it once it starts. Wildlife Specialists handle many requests for such information and their responses to the survey suggest both no recent changes in abatement techniques and consistency of recommendations across the country (Table 4). Although it appears that sufficient techniques are available, most of the common recommendations have serious drawbacks as reported by the specialists and homeowners. For example, structural modifications such as sealing the plywood tunnels are only useful if the damage involves a particular type of siding. Most homeowners are unaware of potential woodpecker damage and do not take such steps until after the fact rather than as a preventive measure. Covering or repairing the damage can be helpful; however, recommended materials (e.g., sheet metal, hardware cloth) are unsightly and the bird may simply shift to another area on the home. One material that does appear useful for covering large areas at low cost is plastic bird netting.

Table 4. Common recommendations for control of woodpecker damage^a.

seal plywood openings
scare devices, noise
chemical treatment
owl, snake decoys
alternate feeding
cover/repair damage
shooting
trapping

^aBased on wildlife specialist survey and woodpecker control literature.

Scare devices often require human presence to activate them (noisemakers) or wind, which may not be present (foil strips, pinwheels, etc.). Owl or snake decoys have been ineffective repellents. Recent work by Evans and Byford (1984) suggested that a magnifying shaving mirror affected the behavior of several flickers involved in damage. This may be a territorial response to an apparently superior bird. In Wisconsin we have recently constructed a large downy woodpecker decoy (10x's life size) to test this theory on territorial males.

Chemical treatments are limited. There are no toxicants registered for woodpecker control. Odor repellents such as naphthalene have little effect in outdoor settings. Sticky repellents are effective but are difficult to use on home siding. Insecticides or toxic wood preservatives are often recommended if the problem results from insects within the siding. Such application may provide temporary relief but does not prevent reinfestation.

Alternate feeding has been cited as an effective abatement technique if food-seeking is the cause of damage. However, suet may attract more woodpeckers to the area, and during warm weather the suet may be harmful to the woodpeckers (Jackson and Hoover 1975).

Once homeowners realize the difficulty in scaring the woodpeckers away, with few exceptions they want to destroy the bird. Woodpeckers are protected by the Federal Migratory Bird Treaty Act and by various state and local regulations. Woodpeckers can be killed legally only under a permit from the

U.S. Fish and Wildlife Service. In some states, state agency approval is also necessary. If shooting is safe and legal, it is the preferred method of lethal control. In suburban areas, a snap-trap baited with suet is a quiet, effective technique. Lethal control is more effective when the damage results from territorial behavior rather than food-seeking wherein several individual woodpeckers may be involved. For a more detailed discussion of woodpecker control, see one of many agency or Extension Service fact sheets or relevant handbook material such as Marsh (1984).

DISCUSSION

Survey data and professional opinions strongly suggest that woodpecker damage is a widespread and locally severe vertebrate pest problem. With some regional and seasonal variation, the problem exists nationwide. Despite the level and distribution of damage, woodpeckers are an ecologically beneficial group of birds with considerable esthetic value. These facts, plus the legal status of woodpeckers, suggest that woodpecker damage control cannot, and should not, be approached in a casual manner with an emphasis on lethal techniques. Killing the offending bird(s) should remain a last resort.

Unfortunately, many of the victims of woodpecker damage have limited knowledge and appreciation of wildlife. Their contact with woodpeckers is a very negative experience and this influences their perception of the need for control. In addition, disturbance and aggravation must be added to the monetary loss. Frustration increases with ineffective, time-consuming, or expensive control recommendations. Several quotations taken from homeowners' questionnaires emphasize this attitude: "I'm in favor of saving the endangered species but my love for wildlife does not include woodpeckers," "The problem is very discouraging and hard to deal with," and "I've tried everything and now I'm reduced to taking pot shots at them with a .22." One individual apparently felt that "necessity was the mother of invention" because he submitted an extensive design and blueprints for a solar-powered woodpecker scare device. The obvious frustration on the part of homeowners and the magnitude of the problem suggest four basic recommendations which I feel have the potential to significantly reduce both the physical and psychological impact of woodpecker damage.

First, approach the plywood industry. A significant portion of reported woodpecker damage results from the "core-gap" problem in plywood construction. This is not a new recommendation. An interview with the staff of the Forest Products Laboratory, Madison, Wisconsin, brought several previous attempts to light. In 1977 a consumer group request to a major plywood manufacturer to alert consumers to the problem of core gaps met with no response. Later, the American Plywood Association, in response to requests from bird damage specialists, issued a release on the problem which included advice to users. In 1980 an article appeared in the *Northwestern Lumberman* (Minneapolis, MN) which included a manufacturer's claim that a plywood product with zero core gap could not be produced. Assuming the production defect cannot be corrected, the alternatives are obvious. Either the plywood should not be sold or used in areas subject to woodpecker damage (either regionally or ecologically, e.g., woodlots) or the core gaps should be sealed when the plywood is used. This latter approach could be done at a variety of levels--manufacturer, distributor, supplier or on-site by the builder. At the very least, a warning statement could be attached to the product which would alert the consumer to the potential damage and how to avoid it. The proper course of action for implementation of this recommendation is unknown, but the help of large and obviously interested conservation groups such as the National Audubon Society could be very important. A preventive solution such as this not only stops some of the damage but eliminates the need for lethal woodpecker control.

Second, the procedure for issuing permits to destroy woodpeckers should be examined. Several specialists identified this as an important need. Currently, a homeowner must first find out that a permit is required and then how to obtain one. The procedure varies somewhat from state to state but several telephone calls and mail delays are often involved. If the damage is severe, a homeowner does not want to wait for a permit. The result is often illegal shooting or trapping. In Wisconsin, only 15-20 permits to destroy woodpeckers are processed by the Madison Wildlife Assistance Office (USFWS; E. McLaury pers. comm.). Survey results suggest damage problems involve hundreds of Wisconsin homeowners. Comments such as "in confidence, I have shot six this year, already" taken from a questionnaire are heard with disturbing frequency. The current system tends to force homeowners into violation of a Federal wildlife law which many of them don't understand anyway. The possibility of shifting all woodpecker permits to local level biologists/enforcement officers should be considered, as well as streamlining the requirements to allow for immediate verbal authorization. As pointed out earlier, shooting or trapping should be viewed as a last resort, and a recommendation to make permits easier to get should not be interpreted as a call to kill more woodpeckers. In some cases, the level of damage and lack of control do justify killing the bird.

Third, continue research on abatement. Some existing techniques do work and an integrated control program usually stops woodpecker damage. However, what works in some places for some people does not work in other situations. Homeowners do not have the time or patience to experiment while damage is taking place. Further work on such things as the woodpecker decoy mentioned previously, insecticidal paints, construction techniques for plywood, the mirror research started in Tennessee, or techniques yet to be conceived, could result in a reliable, cost-effective control technique.

Fourth, promote a public awareness program. Homeowners are generally unaware of woodpecker problems until they learn from experience. Builders and real estate agents should also be aware of the potential for damage. Neither the homeowners nor the builders understand the ecological importance of woodpeckers or why a bird with the ability to inflict serious damage should be given Federal protection. A negative experience such as woodpecker damage does little to help a citizen's overall appreciation of wildlife. These problems could all be addressed in concerted public awareness programs.

Any or all of these recommendations would help in our ability to deal with the woodpecker problem.

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APPENDIX 1

Dear Homeowner:

Woodpeckers are one of several major wildlife damage problems I have to deal with. They can cause considerable damage, as well as being a general nuisance. On the other hand, woodpeckers are attractive and desirable birds at backyard feeders.

The enclosed information and "over-the-phone" assistance is meant to help you cope with your woodpecker problem. However, to better serve homeowners with problems, attempt to streamline permit procedures, and document the distribution and amount of damage, I would greatly appreciate it if you could take a few minutes to answer the following questions and return them to me. I hope this information may ultimately make woodpecker problems easier for homeowners to effectively control. Thank you for your time.

Sincerely,
Scott R. Craven
Scott R. Craven
Assistant Professor

- (1) In what town or city do you live?
- (2) How would you describe the environment around your home (rural, wooded suburban, farm, etc.)?
- (3) When did you first notice the woodpecker damage (month)?
- (4) What type of siding is being damaged (very often a particular plywood is involved)?
- (5) Does the damage show any particular pattern (1 large hole, a row of holes, etc.)?
- (6) If you know, or can check a field guide, what kind of woodpecker is doing the damage?
- (7) Do you think it is one bird or more than one?
- (8) What do you estimate is the cost of repair?
- (9) Have you tried anything to control the damage? If so, please document what worked and what didn't.
- (10) Do you know of friends or neighbors with the same problem? How many? Would they like to receive information (name and address)?

Comments:



Department of Wildlife Ecology

226 Russell Laboratories, 1630 Linden Drive, Madison WI 53706 608-262-2671

School of Natural Resources
College of Agricultural and Life Sciences
University of Wisconsin-Madison

10 October, 1983

Dear Fellow Specialist:

I'm sure I share your basic opinion about questionnaires but in some cases there's no alternative means of gathering certain data. This is one of those cases! I just returned from the 1st Eastern Wildlife Damage Control Workshop in New York where there was considerable discussion about the nature, extent, and control of woodpecker damage. I am scheduled to present a paper on that subject at the upcoming Vertebrate Pest Conference in California in March. As a result, I ask you to take a very few minutes to respond to the questions listed below. The data will be summarized as part of the paper for the Vertebrate Pest Conference. If you would like a copy of the finished product, please so indicate and I'll be happy to send you one. Thanks in advance for your time and cooperation.

Sincerely,

Scott R. Craven
Extension Wildlife Specialist

- (1) Please rank the level of woodpecker damage in your state (in your opinion).
a. none b. light c. moderate d. severe
- (2) List and rank the 3 most prominent species involved in the damage.
- (3) Is any particular building material (e.g T-111 siding, cedar, etc.) more often involved than random selection might suggest?
- (4) How does woodpecker damage rate in terms of the time you spend on it relative to other damage or nuisance problems?
- (5) Do you attribute most of the damage to food seeking behavior or territorial behavior?
- (6) Do you have any quantification of the woodpecker damage (e.g. dollar amount, frequency)? If so, can it be cited?
- (7) In brief form, what do you generally advise as a solution (e.g. chemicals, scare devices, shooting, etc.)? Do you have any feel for the success or failure of various techniques?

Any other suggestions, comments, or literature that you feel might help in developing a clear picture of the nationwide woodpecker damage situation would be most appreciated.

Thank you.

Questionnaire mailed to all state Cooperative Extension Service Wildlife Specialists in the United States.