Extension

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Raptors in New Hampshire Orchards

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You may be able to enhance your rodent management program by careful placement of nest boxes for hawks and owls. Each species varies in its nest site preferences and box dimensions, so it is critical to construct and place the boxes according to what species are likely to live in the available habitat. Some boxes may require annual cleaning and careful placement to attract the desired residents. There are three raptors here that accept nest boxes, and prey on voles (sparrow hawk, saw-whet owl, barred owl). Two others may be of interest (great horned owl, screech owl).

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Sparrow Hawk or American Kestrel

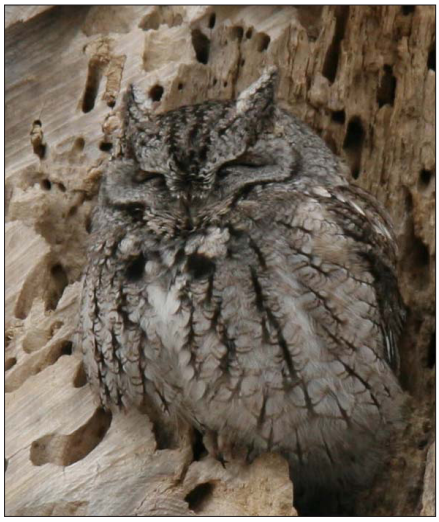
This species is a daytime hunter. It commonly forages in fields, meadows, and semi-open habitats like orchards. It prefers open sites for its nest (on a fence row for example). Place nest boxes on an isolated tree or free standing post, 15 to 30 feet up. A high, undisturbed spot on the side of a barn may be appropriate. Make the entry hole three inches in diameter and face it south or west. Place two to three inches of wood chips on the bottom. Starlings frequently take up residence in these boxes, so regular checking and removal of starling nests would increase chances of kestrels using them. Use box plan A.

Saw-Whet Owl

The saw-whet owl is night active. It hunts in a wide variety of habitats, but prefers woodlands. Place nest boxes in clumps of conifers, a minimum of 14 feet up. They seem to prefer areas near water.

Perhaps you have such sites at the edge of your blocks. Make the opening three inches, and place two to three inches of wood chips in the bottom of the box. You can check occupancy by tapping on the side of the box. Saw-Whet owls will usually look out the entrance hole without flying away. Use box plan A.

Saw-Whet Owl. Photo: Alan T. Eaton.



Screech Owl. Photo: Alan T. Eaton.

**Fledgling barred owl.
Photo: Alan T. Eaton.**

Great Horned Owl. Photo: Alan T. Eaton.

Screech Owl

Screech owls are rare here, but take readily to boxes at the edge of forest, adjacent to fields or wetlands. They like hardwoods, and often forage or nest in orchards. Nest boxes have three inch entrance holes, two to three inches of wood chips, and are at least 10 feet up (box plan A). This owl would be most likely to appear in Southern NH, but probably is too rare to target for nest boxes.

Barred Owl

Barred owls are common in New Hampshire near wooded swamps. Don't confuse them with barn owls, which do not occur here.

Nest boxes for barred owls (plan B) should be 20 - 30 feet high in a mature hardwood area, preferably within 200 feet of water. Do not place it at the edge of a clearing or close to a house. A perch near the nest box is desirable, but there should be an unobstructed flight path to the box -- no obscuring low branches or leaves. A large living conifer or hardwood with a relatively exposed, open trunk is good. Place a two to three inch layer of wood chips on the bottom. Do not stain or paint the box.

Great Horned Owl

This is our largest resident owl, and it prefers larger prey than voles. It is not a cavity nester, but you can encourage it to use platforms that are carefully placed. The minimum recommended height is 20 feet, but higher would be better. Be sure edges of wire cloth have been bent backwards, so they do not protrude. Great horned owls begin nesting in winter, so platforms must be set out by fall if the owls are to find and use them the next year. You can make it more acceptable to the birds if you interweave pliable sticks into the platform, rather than just piling them on top. See plan C.

General Comments on all Boxes

You can improve the chances that boxes get used by the target species, if you annually inspect them, clean them out, and make repairs. Early winter is usually the best time for this. If you attach boxes to live trees, use lag bolts, and loosen them a little bit each year, to allow for growth. Nest predators can sometimes be a problem. To reduce this risk, use smooth metal posts or attach smooth metal sheets around the trunk. This discourages raccoons, which are common nest predators.

Perhaps there is a neighborhood group (scouts, 4-H, Audubon club) that would love to turn this into a long term project. Records of bird use, repairs of boxes, observation of inhabitants would extend the initial activity of determining which species to target, box construction and erection. With luck, your trees may benefit from lower vole populations.

Perches and Roosts

Many raptors hunt by quietly sitting on a branch with good visibility, while watching and listening for prey. You may be able to improve the chances that raptors hunt in or around your fields by retaining (or sometimes creating) good hunting perches. Any high perch with good visibility will do. This could be a dead stub, telephone wire, or pole. Raptors less frequently choose leafy perches for hunting, presumably because foliage reduces visibility.

For most owls, clumps of thick conifers are essential for roosting. Here they can hide from the crows, blue jays, and other birds that pester them during the day. Even though some species will roost in cavities or next boxes, no conifers (pines, hemlock, spruce, fir, cedar) means few or no resident owls.

An immature red-tailed hawk perched in an apple tree. Photo: Alan T. Eaton.

A nest box with a high perch can improve the likehood of raptors hunting in or around your fields. Photo: Alan T. Eaton.

Did You Know?

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Nest boxes. Photo: Alan T. Eaton.

Plan A

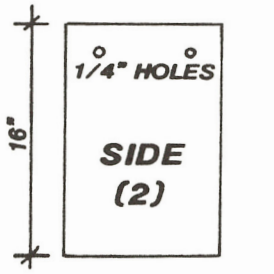
AMERICAN KESTREL

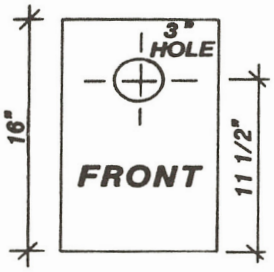
NORTHERN SCREECH-OWL

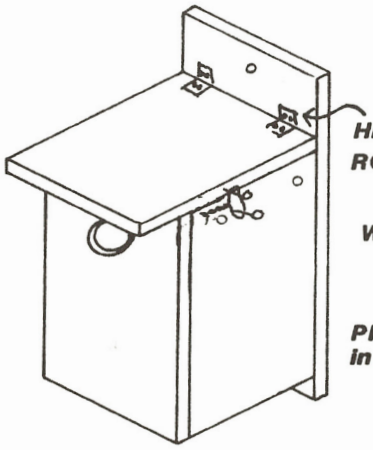
NORTHERN SAW-WHET OWL

BOREAL OWL (?)

NEST BOX



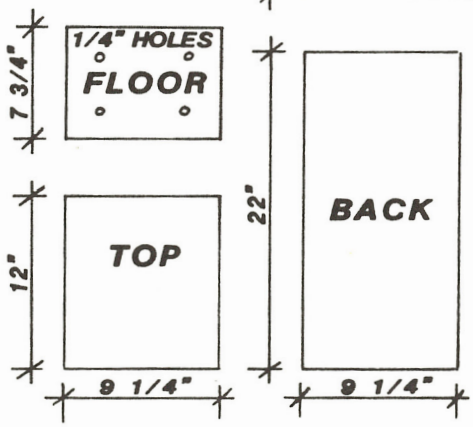




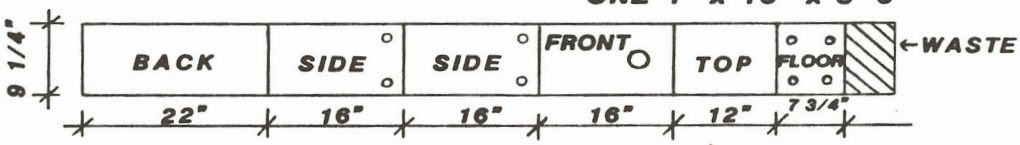
HINGE OR CLEAT
ROOF FOR CLEANING

Wire top shut.

Place 3" of sawdust
in bottom of box.

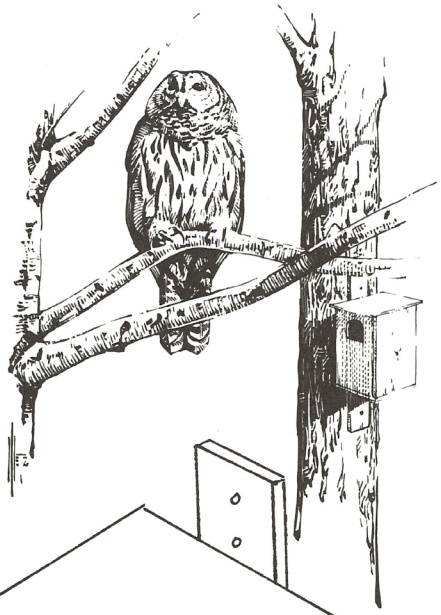


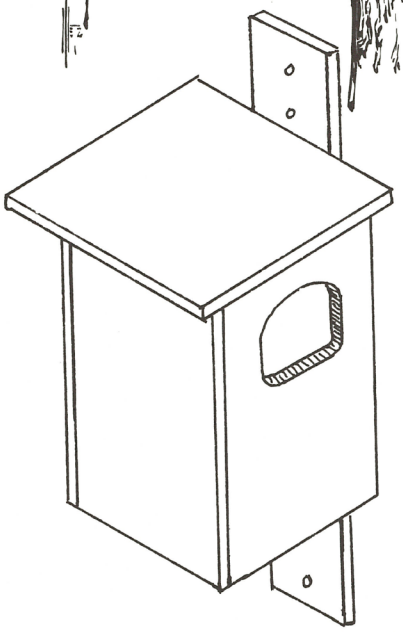
LUMBER:
ONE 1" x 10" x 8' 0"

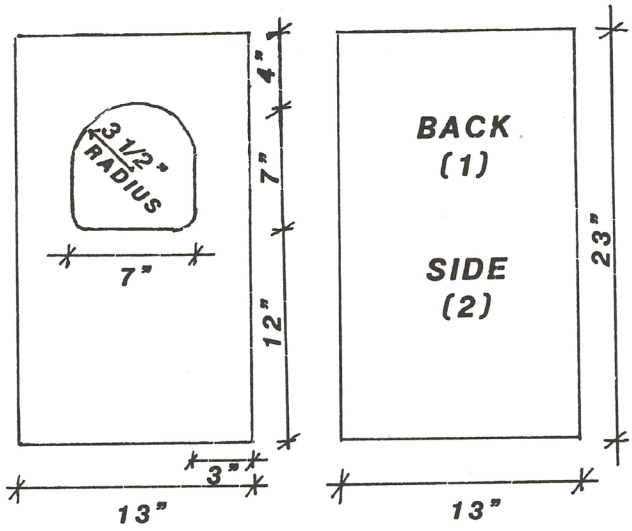


Plan B

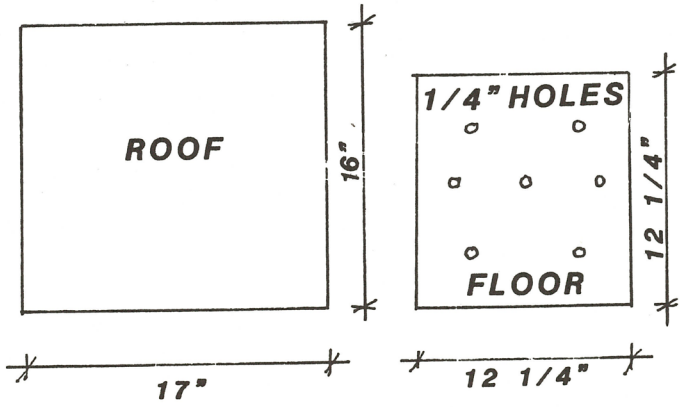
BARRED OWL NEST BOX

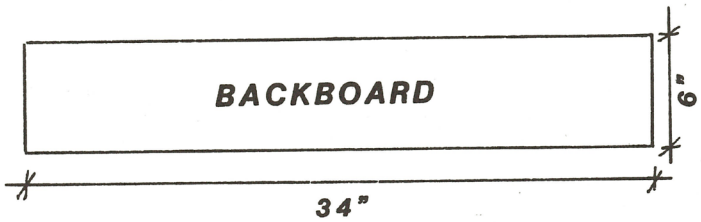


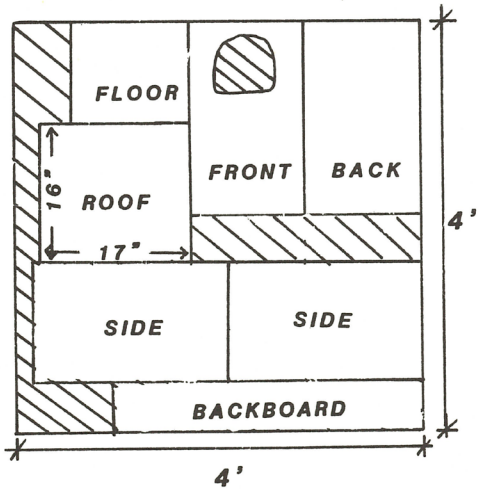




NOTE: No hinged door needed. Clean through entrance hole.



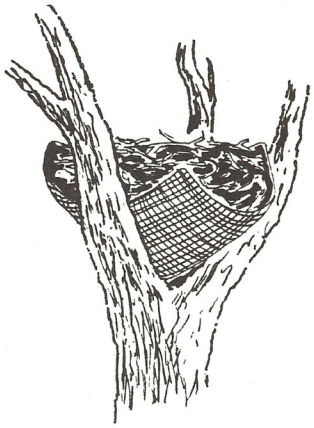




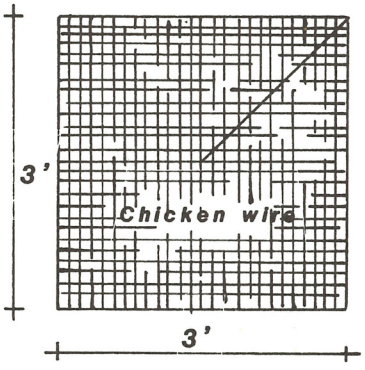
LUMBER: One 4'x4'x3/4" sheet exterior plywood,

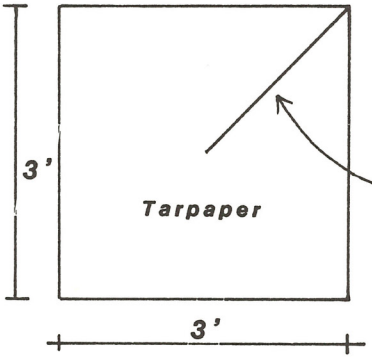
Plan C

GREAT GRAY OWL
GREAT HORNED OWL
NEST PLATFORM

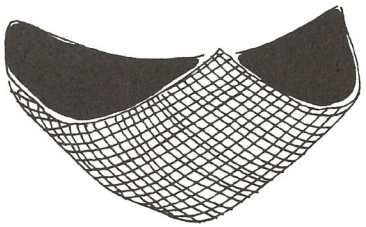


MATERIALS: ***One square yard 1" mesh chicken wire***
One square yard tarpaper

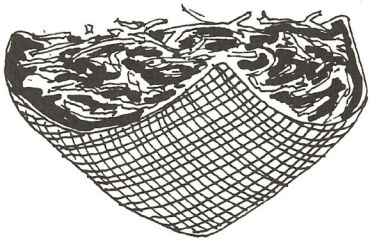




CUT ALONG THESE LINES AND OVERLAP EDGES TO MAKE A CONE 14" DEEP.



LINE INSIDE OF WIRE CONE WITH TARPAPER. CUT DRAIN HOLE IN BOTTOM.



CONSTRUCT STICK NEST INSIDE CONE, WIRING BRANCHES TO CONE THROUGH TARPAPER. RAISE FINISHED NEST INTO TREE WITH ROPE AND WIRE INTO A CROTCH OF THE TREE.

Raptors and Pesticide Use

Historically, raptors have suffered greatly from human use and misuse of pesticides. They are at the top of the food web, and many species suffered when chlorinated hydrocarbon pesticides were heavily used. The fact that today some species (sparrow hawk is an example) thrive on farms is evidence that they can coexist with careful use of modern pesticides. Never the less, raptors have great public interest, and mis-use of pesticides could result in bird deaths and considerable public attention. Nest boxes probably should not be placed where they will be directly sprayed. As always, weigh carefully any decisions regarding pesticide use. The greatest potential for pesticide problems with raptors probably involve insecticides and rodenticides. In particular, using second-generation anticoagulant (brodifacoum, difethialone, bromadiolone) rodenticides carries a high risk of poisoning raptors. Brodifacoum seems to be especially risky in this regard.

Acknowledgment

Much of the information here was gleaned from "Woodworking for Wildlife" by Carrol L. Henderson, Minnesota Dept. of Natural Resources, 1984 and updated in 2009. I am grateful to the author for permitting reproduction and use of the information. Thank you to Don Black and John Kanter, former UNH Cooperative Extension staff, and Becky Suomala, Audubon Society of New Hampshire, for assistance in locating information and preparing the original publication.

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