

ARTIFICIAL PERCHES FOR RAPTORS

Plans and Instructions

United States
Department of
Agriculture

Natural
Resources
Conservation
Service
Davis, CA 95616

ENCOURAGE RAPTORS IN YOUR AREA FOR MORE EFFICIENT RODENT CONTROL

Raptors are birds of prey that are greatly beneficial in controlling of rodents. A small, one-time investment in artificial perches can help increase the presence of these birds in your area, reducing the need for other methods of pest control.

PERCH SITES

Raptors hunt in open areas such as mowed alfalfa fields, golf courses, vineyards, along roadsides, ditch banks, rural school grounds and meadows. Any of these areas are good potential perch sites.

By providing strategically-located vantage points to these sharp-sighted birds through artificial perches you can help improve the hunting efficiency of raptors, reducing rodent pests. These perches can be especially valuable in the winter and early spring, before the primary rodent breeding season when many crops are either absent or provide little

While we are not familiar with any studies of the impact of artificial perches on rodent populations, it would clearly be beneficial to your raptor population if artificial perches make it easier for them to spot prey or help them use less energy to hunt.

IMPORTANT POINTS-TO CONSIDER

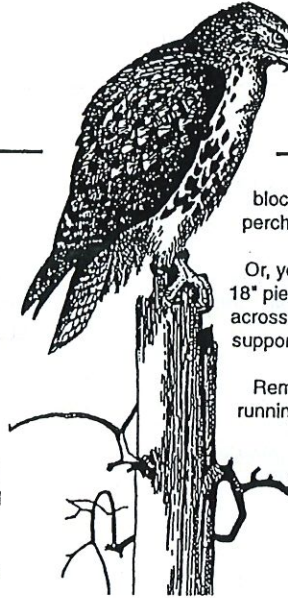
All perches should be placed with the horizontal axis pointing east-west to avoid instability due to wind direction and changing visibility due to sun and moonlight.

Artificial perches are readily accepted by many resident raptors, including American kestrels, barn owls, great horned owls, burrowing owls, short-eared owls, red-tailed and red-shouldered hawks and black-shouldered kites.

Perches can be erected any time of year. The acceptance and use of the perches by raptors indicate that perches may prove useful as a management tool for raptors.

BUILDING A PERCH

Artificial perches are easy to build. The ideal material is 3/4" galvanized steel pipe, 18' long. Set the pipe about 3 feet deep in the ground with an 18" x 2" x 2" rounded edge



block of pine or redwood as the perch.

Or, you can weld a 1 1/2" x 2" x 18" piece of galvanized steel pipe across the top of the vertical support.

Remember to place the perch running east-west, longways.

Job sheet compiled by Patrick J. Burke, (Natural Resources Conservation Service, Escondido) from a research paper, "Raptor Use of Artificial Perches," by Timothy R. Hall, Walter E. Howard and Rex E. Marsh, *Wildlife and Fisheries Biology*, University of California at Davis, 1980 and 1981.

Revised January 1996

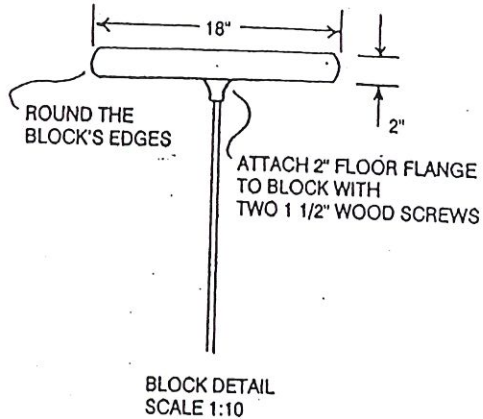
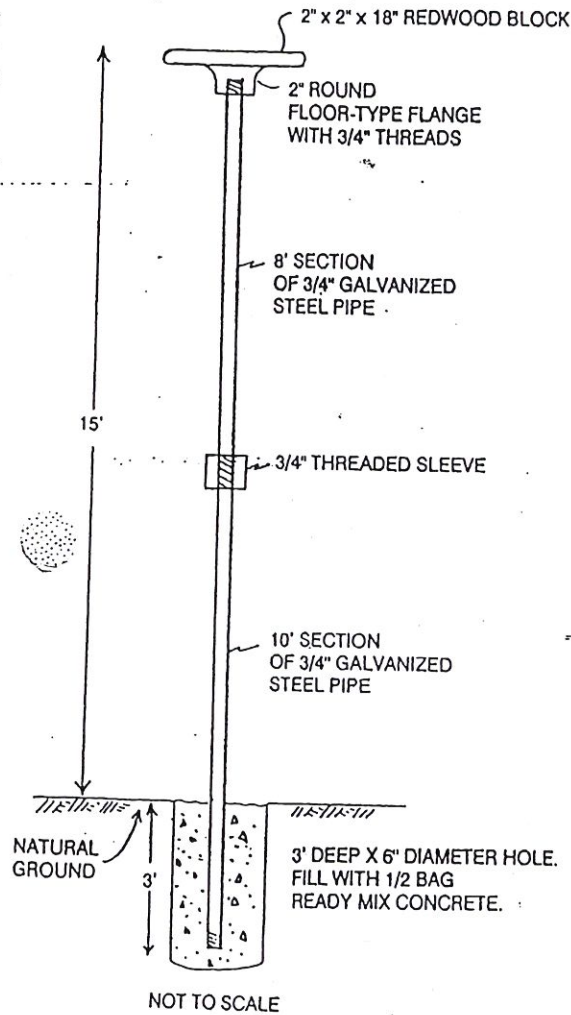
Job Sheet CA-502

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ARTIFICIAL PERCHES FOR RAPTORS

Plans



MATERIALS

- A. TWO 10' SECTIONS GALVANIZED STEEL POPE, 3.4" DIAMETER
- B. ONE 2"X2"X18" REDWOOD BLOCK
- C. TWO 1 1/2" WOOD SCREWS
- D. ONE CUBIC FOOT READY MIX CONCRETE
- E. ONE 2"X3/4" FLOOR FLANGE
- F. ONE 3/4" THREADED SLEEVE
- G. ONE CAN "DUNE TAN" RUST PREVENTIVE SPRAY PAINT

NOTES

1. PAINT ALL ABOVE-GROUND STEEL WITH "DUNE TAN" RUST PREVENTIVE PAINT.
2. MIX CONCRETE AS RECOMMENDED BY MANUFACTURER.
3. ORIENT THE PERCH EAST TO WEST TO MINIMIZE GLARE..

REFERENCE

THE WILDLIFE SOCIETY
VOLUME 9, NUMBER 4, WINTER 1981
PAGES 296-298

Indiana - November 2009 (ver. 1.0)

Raptor Perches

Background

High tree mortality rates on some restoration projects in Indiana may be due to vole and mice damage. These rodents damage, and often kill, young shrubs and trees by stripping the bark from the stems and roots of the plants. Rodents serve as a primary food source for many raptors (birds of prey). While the impact of artificial perches on rodent populations is not well documented, artificial perches make it easier for raptors to spot prey. [A recent study on predator control of rodent pests](#) indicated that landowners reported the use of raptor perches as an effective rodent control. They noticed a decrease in both vole damage and their need for rodenticides (poison-treated baits). The most likely raptors in Indiana to use an artificial perch, as detailed in the following pages, include Great Horned Owls, Snowy Owls, Red-tailed Hawks, Red-shouldered Hawks, Rough-legged Hawks, and American Kestrels.

Raptor Perch Benefits

1. Artificial perches can improve raptor efficiency, especially in areas where natural perches have been removed, by providing strategic vantage points and allowing raptors to use less energy when hunting.
2. Decreases the need for rodenticides, which have been used to control mice and meadow voles. These chemicals are hazardous and can affect non-target organisms. Rodenticides may also be restricted and require a license.
3. Installation of raptor perches may help keep rodent populations low once they have been reduced through alternative techniques.
4. Raptor perches can be erected any time of year. Perches can be especially valuable in the winter and early spring before the primary rodent-breeding season.

Points to Consider

1. A spacing of at least 50 yards is recommended if more than one perch is planned.
2. Raptors are opportunistic feeders, and may prey on non-target species such as quail and songbirds. When wetlands are near, raptors may feed on aquatic species such as frogs, snakes, and small ducks. Raptor perches will act as an "edge" near grasslands, reducing its habitat value for some species. Perches should be installed at least 300 feet from wetland and grassland habitats.
3. Nest boxes can also be an effective method to increase the population of cavity-nesting raptors. See the Minnesota Department of Natural Resources publication [Woodworking for Wildlife](#) for additional information.

REFERENCES

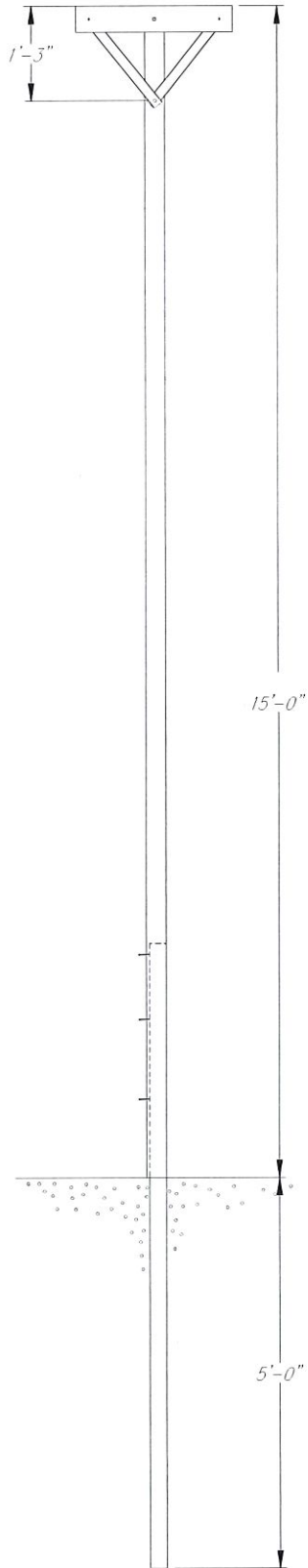
Artificial Perches for Raptors, <http://www.rain.org/~sals/perches.html>

Raptor Perches, Bio-Diversity Products, 10112 E. Woodbridge Rd., Acampo, CA 95220-9752
<http://members.tripod.com/Tommy51/perch.html>

Western Integrated Pest Management Center (WIPMC), Cooperative State Research, Education and Extension Service, United States Department of Agriculture
<http://www.wrpmc.ucdavis.edu/CenterProjects/Hastings%20Final%20Report%20%20Oct%202008.pdf>

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MATERIALS

ONE 15' HOLLOW METAL PIPE 3" DIAMETER (EX: ELECTRICAL CONDUIT OR GALVANIZED STEEL PIPE)
 IMPORTANT: USE LIKE METALS FOR BOTH PIPE AND SUPPORT FLATS TO PREVENT CORROSION.

ONE 8' FENCE POST

1 - 2"x4"x24" CROSS PIECE TREATED BOARD

2 - 1/3"x1 1/2"x16" METAL SUPPORT FLATS

3 - 2 1/2" x 3/8" BOLTS AND NUTS

2 - 2" x 3/8" BOLTS AND NUTS

1 - 4" BOLT AND NUT

1 - 5" BOLT AND NUT*

*A 6" INCH BOLT SHOULD BE USED ON CROSS PIECE AT CENTER IF INTENDING TO ATTACH A KESTREL BOX TO BACK OF PIPE.

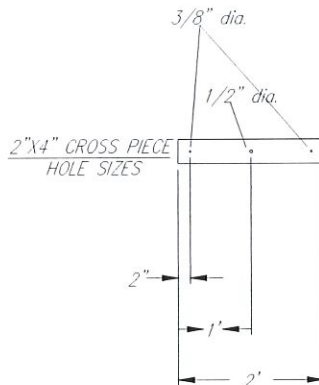
PREPARATION

DRILL 1/2" HOLE IN HOLLOW METAL POLE AT 2" FROM TOP OF POLE THROUGH BOTH FRONT AND BACK OF POLE. PRE-DRILL HOLE THROUGH FRONT AND BACK OF POLE AT APPROXIMATELY 15" FROM TOP FOR SECURING METAL SUPPORT FLATS. SEE DIAGRAM AT RIGHT.

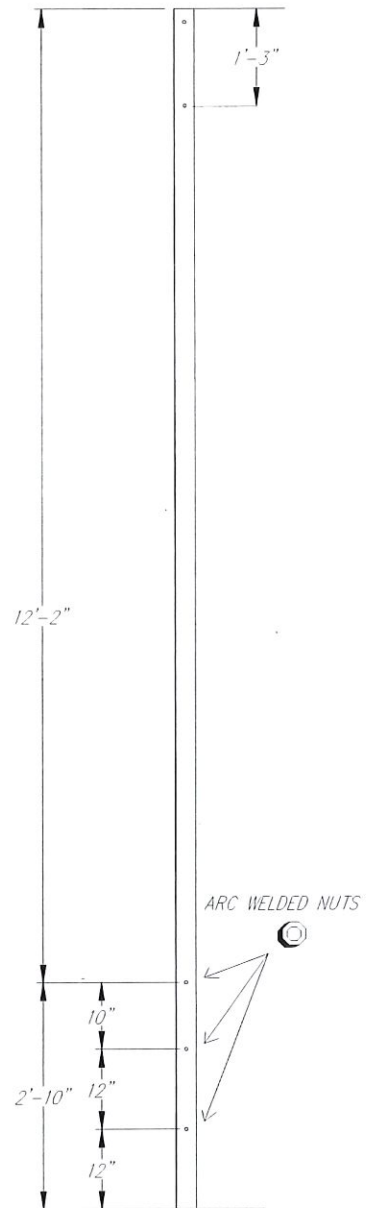
PRE-DRILL 1/2" DIAMETER HOLES AT 12", 24", AND 34" FROM BASE OF POLE. ARC WELD NUTS MATCHING 2 1/2" x 3/8" BOLTS TO OUTSIDE OF 3 BASE HOLES.

PRE-DRILL 1/2" HOLES IN 2"x4" CROSS PIECE, AT CENTER. PRE-DRILL 3/8" HOLES AT 2" FROM ENDS.

TAN/BROWN RUST PREVENTION PAINT SHALL BE APPLIED TO EXPOSED METAL SURFACES.



1/2" DIAMETER PRE-DRILLED HOLES



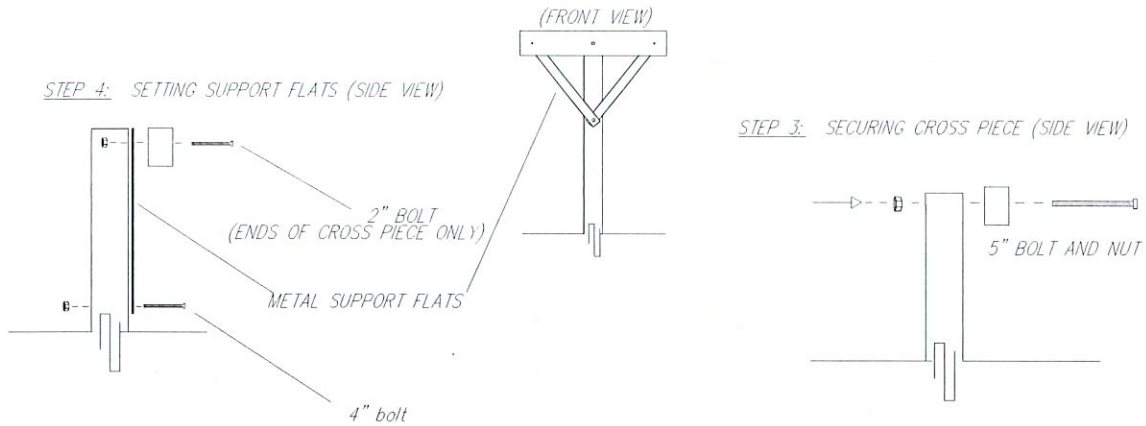
INSTRUCTIONS:

STEP 1: COMPLETE ALL PREPARATION STEPS.

STEP 2: DRIVE FENCE POST 5' INTO GROUND AT DESIRED LOCATION.

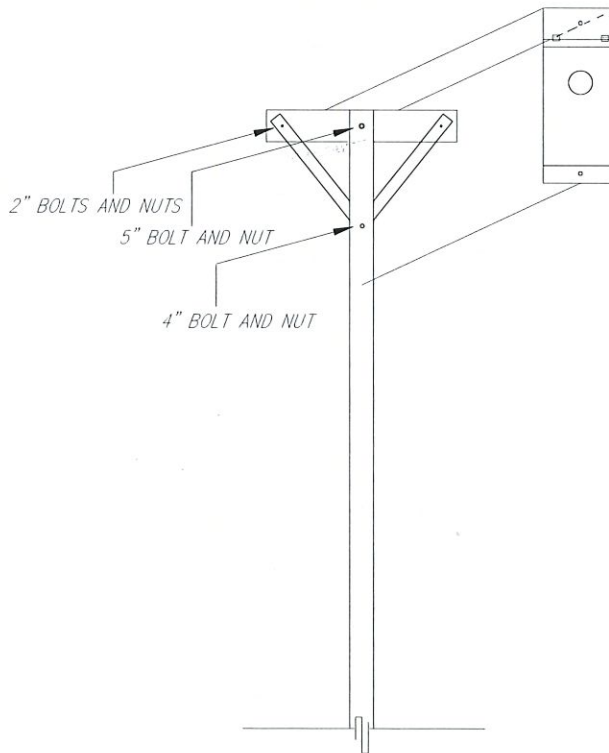
STEP 3: TAKING THE HOLLOW METAL PIPE, LOOSELY BOLT CROSS PIECES AT HOLES, 2" AND 36" FROM TOP. (5" BOLTS)

STEP 4: SECURE ONE END OF SUPPORT PIECE TO THE CORRESPONDING PRE-DRILLED HOLE IN THE CROSS-PIECE. SECURE OTHER END TO THE FRONT OF THE POLE, USING A 4" BOLT. REPEAT FOR THE OTHER SIDE. SUPPORT PIECES WILL OVERLAP. USE BOLTS AND NUTS AS SHOWN.



STEP 5: ATTACH KESTREL BOX TO BACK OF POLE AT ONE OF THE PROTRUDING BOLTS. TIGHTEN ALL SCREWS, THEN BOLTS. BOTTOM OF KESTREL BOX MAY BE SECURED BY WRAPPING ROPE/WIRE/CABLE AROUND POLE AND THROUGH PRE-DRILLED HOLE AT BASE OF BOX.

STEP 6: ERECT RAPTOR PERCH BY SLIDING POLE OVER EMBEDDED FENCE POST. SCREW 2 1/2" BOLTS INTO NUTS WELDED NEAR BASE OF POLE AND TIGHTEN.



STEP 5: ATTACHING KESTREL BOX TO RAPTOR PERCH

PLACEMENT INSTRUCTIONS:

RAPTOR PERCH SHALL BE ERECTED WITH AXIS RUNNING IN THE EAST AND WEST DIRECTIONS, AND MULTIPLE PERCHES PLACED WITH AT LEAST 50 YARD SPACING.

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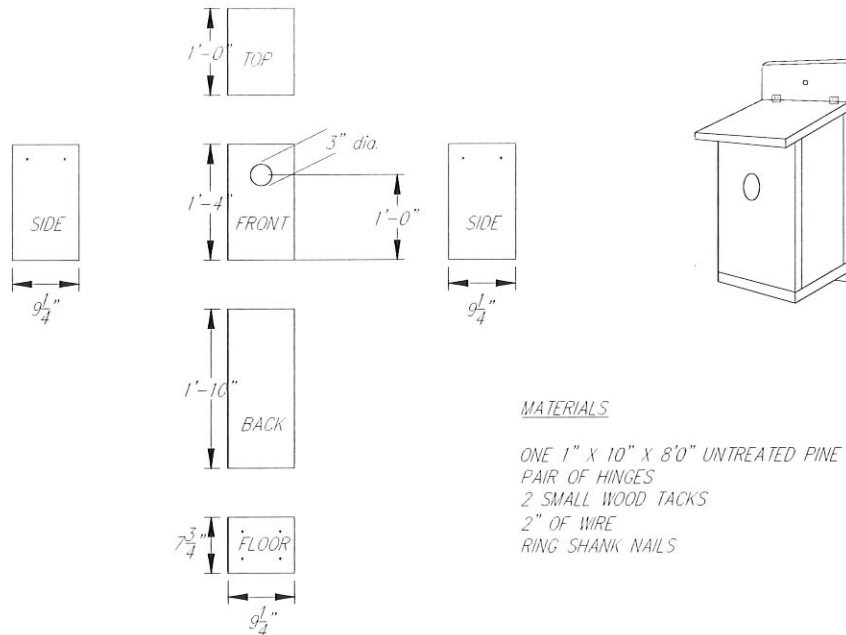
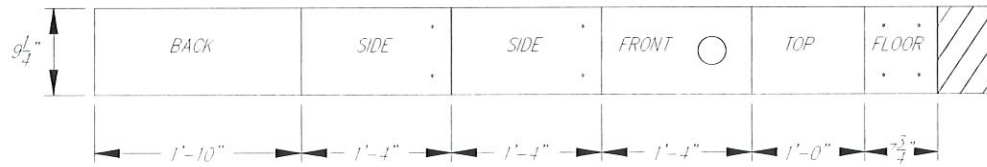
Indiana Biology Technical Note
 RAPTOR PERCH
 (Sheet 3 of 4)

Designed	P. BATY	Date	7/03
Revised	B. CLARIZIA		4/09
Checked			
Approved			

Sheet
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KESTREL BOX *
(for attachment to Raptor Perch)

LUMBER: ONE 1" X 10" X 8'0" UNTREATED PINE



MATERIALS

ONE 1" X 10" X 8'0" UNTREATED PINE BOARD
PAIR OF HINGES
2 SMALL WOOD TACKS
2" OF WIRE
RING SHANK NAILS

ASSEMBLY:

1. CUT BOARD TO THE APPROPRIATE DIMENSIONS, AS GIVEN ABOVE.
2. DRILL TWO $\frac{1}{4}$ " VENTILATION HOLES IN BOTH SIDE SECTIONS AND FOUR HOLES IN THE FLOOR SECTION.
3. ASSEMBLE FRONT, BACK, SIDES, AND FLOOR USING RING SHANK NAILS.
4. USE HINGES TO ATTACH TOP SECTION. THE WOOD TACKS MAY BE TACKED TO ONE EDGE OF THE TOP PIECE, LEAVING APPROXIMATELY $\frac{1}{4}$ " PROTRUDING. THE OTHER TACK SHOULD BE SECURED JUST BELOW THE FIRST TACK IN THE SAME MANNER, ON THE ADJACENT SIDE. WRAP THE WIRE AROUND BOTH TACKS, WIRING THE LID CLOSED.

SPECIAL INSTRUCTIONS:

PRE-DRILL $\frac{1}{2}$ " HOLE AT 2" FROM TOP AND $\frac{1}{4}$ " HOLE ON BACK SECTION BELOW FLOOR.
ONCE ATTACHED TO THE RAPTOR PERCH, 3" OF WOOD CHIPS SHOULD BE DEPOSITED IN THE BOTTOM OF THE KESTREL BOX.
ATTACH BOX WITH ENTRANCE HOLE FACING EAST TO SOUTH.

*Modified from "Woodworking for Wildlife"
Minnesota DNR, 1992

Drawing No.

File No.



Indiana Biology Technical Note
RAPTOR PERCH
(Sheet 4 of 4)

Designed	P. BATY	Date	7/03
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Checked			
Approved			

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Hawk Perches

for biological pest management



Building hawk perches at your school may attract hawks to help control rodent populations. It's best that hawks eat rodents that have not consumed poison baits. As a best practice, consider discontinuing the use of rodenticides outdoors before installing hawk perches.

HAWKS HUNT

Hawks in California are usually sit-and-wait predators. Hawks prefer to eat small mammals. On average, hawks consume the equivalent of 3 voles or 6-8 mice each day. Hawks can also repel pest birds like pigeons.



ATTRACTING HAWKS

Hawks are territorial. Adequate perches are the most important feature of a territory. Artificial perches provide steady vantage points and can increase hunting success.



HAWK PERCHES

Perches are not hard to build and can be set up at any time of year. Install perches in open areas away from trees and power lines. The perch should be oriented east-west to improve visibility for the hawk.

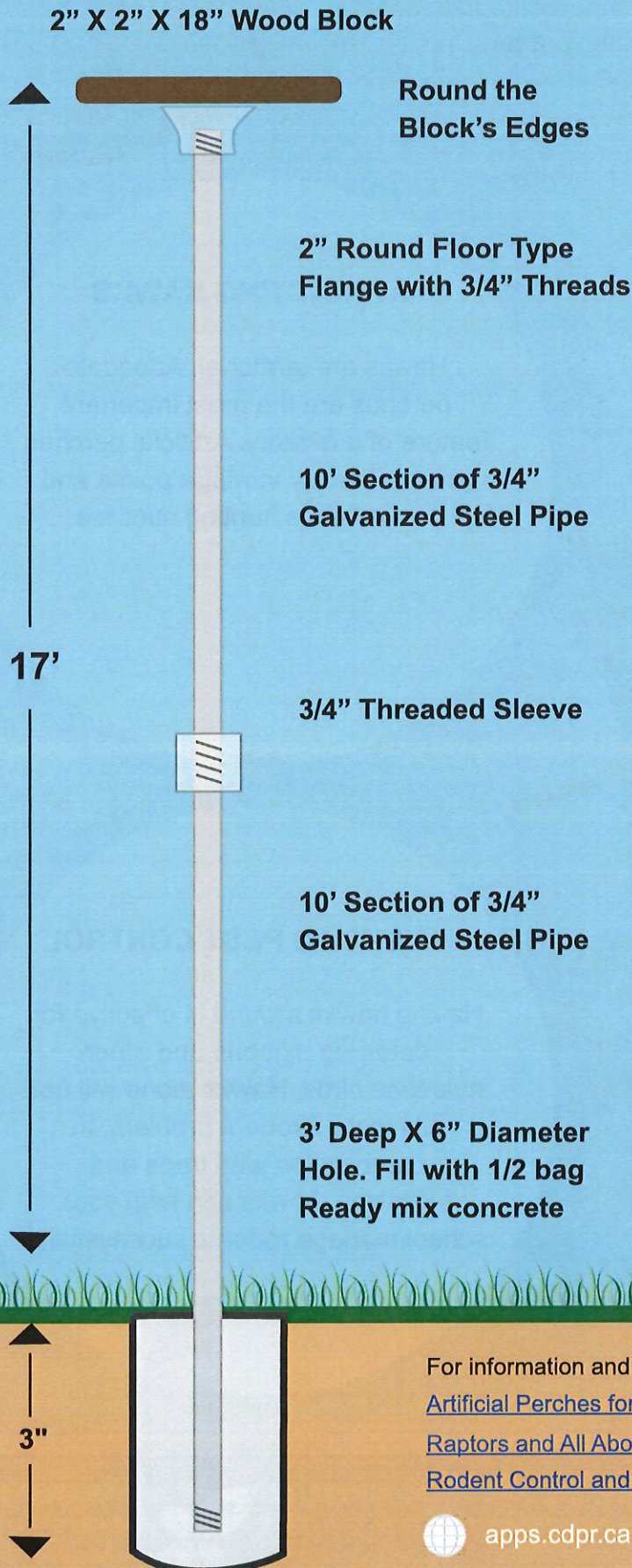


HAWKS AS PEST CONTROL

Having hawks around is effective for deterring pigeons and other nuisance birds. Hawks alone will not eliminate a rodent problem. In combination with traps and exclusion, hawks can help your school manage rodents successfully.



Artificial Perch Plan



Materials

- One- 2" X 2" X 18" Wood Block
- Two- 10' Section of 3/4" Galvanized Steel Pipe
- Two- 1 1/2" Wood Screws
- One- 2" X 3/4" Floor Flange
- One- 3/4" Threaded Sleeve
- One- Cubic Foot Ready Mix Concrete

Notes

- Install in open areas, away from power lines and trees
- Anchor in ground or attach to existing poles with U-bolts
- Orient perch east to west
- Check below perches to remove pellets, prey remains, poop

For information and plan instructions

[Artificial Perches for Raptors](#) - USDA Natural Resource Conservation

[Raptors and All About Birds](#) - Cornell Lab of Ornithology

[Rodent Control and Raptor Perching](#) - Ohai Raptor Center



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Barn Owls

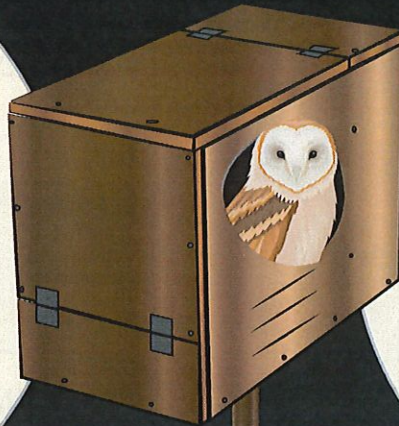
for biological pest management



Installing barn owl nest boxes at your school may attract owls to help control rodent populations. It's best that owls eat rodents that have not consumed poison baits. As a best practice, consider discontinuing the use of rodenticides outdoors before installing owl nest boxes at a schoolsite.

OWLS HUNT

Barn owls eat gophers, ground squirrels, rats, mice, and voles. An adult will catch 10-12 gophers per night during nesting season. A family of barn owls can eat about 3,000 gophers per year.



ATTRACTING OWLS

Barn owls are cavity nesters. Nest box openings attract owls. The best way to increase the local owl population is to provide a barn owl nest box.

OWLS AS PEST CONTROL

Owls alone will not eliminate a rodent problem, but may reduce their populations to acceptable levels. In combination with trapping and exclusion, owls can help your school manage rodents successfully.

OWL NEST BOXES

Nest boxes can be purchased or built. They can be a great learning opportunity for students. If your nest box is successful, you may catch a glimpse of some cute fledgling owls.

Barn Owl Nest Box Plan



BUILD IT OR BUY IT!

Nest Box Plans

[How to Build an Owl Box](#) - UC Davis

[Instructions and Guide](#) - Ojai Raptor Center

[Build a Barn Owl Box](#) - Cornell Lab of Ornithology

Ready-made nest boxes are available for purchase online.

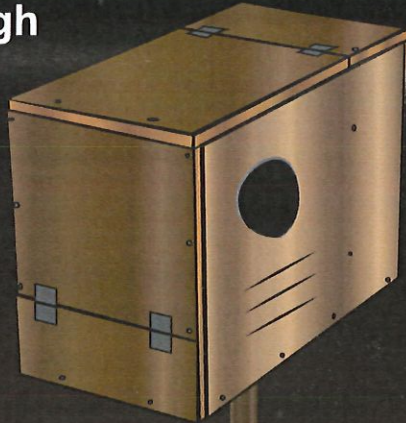
What about maintenance?

- Clean nest boxes once a year
- Between November and January
- Wear gloves and a mask to sweep out debris and unclog holes.

Expert Tips

- A good time to install a nest box is in January or February, before nesting begins.
- Install a metal baffle below the box to prevent predators.
- A quieter location is best.

12' to 25' High



- Half mile or more from major roads
- Hang the nest box in an open area with afternoon shade
- Face opening away from prevailing winds

Information

[Barn Owls](#) - Barn Owl Trust

[Attracting Birds of Prey for Rodent Control](#) - Oregon State University Extension Service



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