

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION

649K – STRUCTURES FOR WILDLIFE, KESTREL NEST BOX

I. SCOPE

The works consists of installing kestrel boxes with the materials and to the dimensions shown on the drawings. Installed kestrel boxes will address wildlife habitat deficiencies where there is a lack of natural nesting or roosting structures and where artificial structures will enhance those habitats.

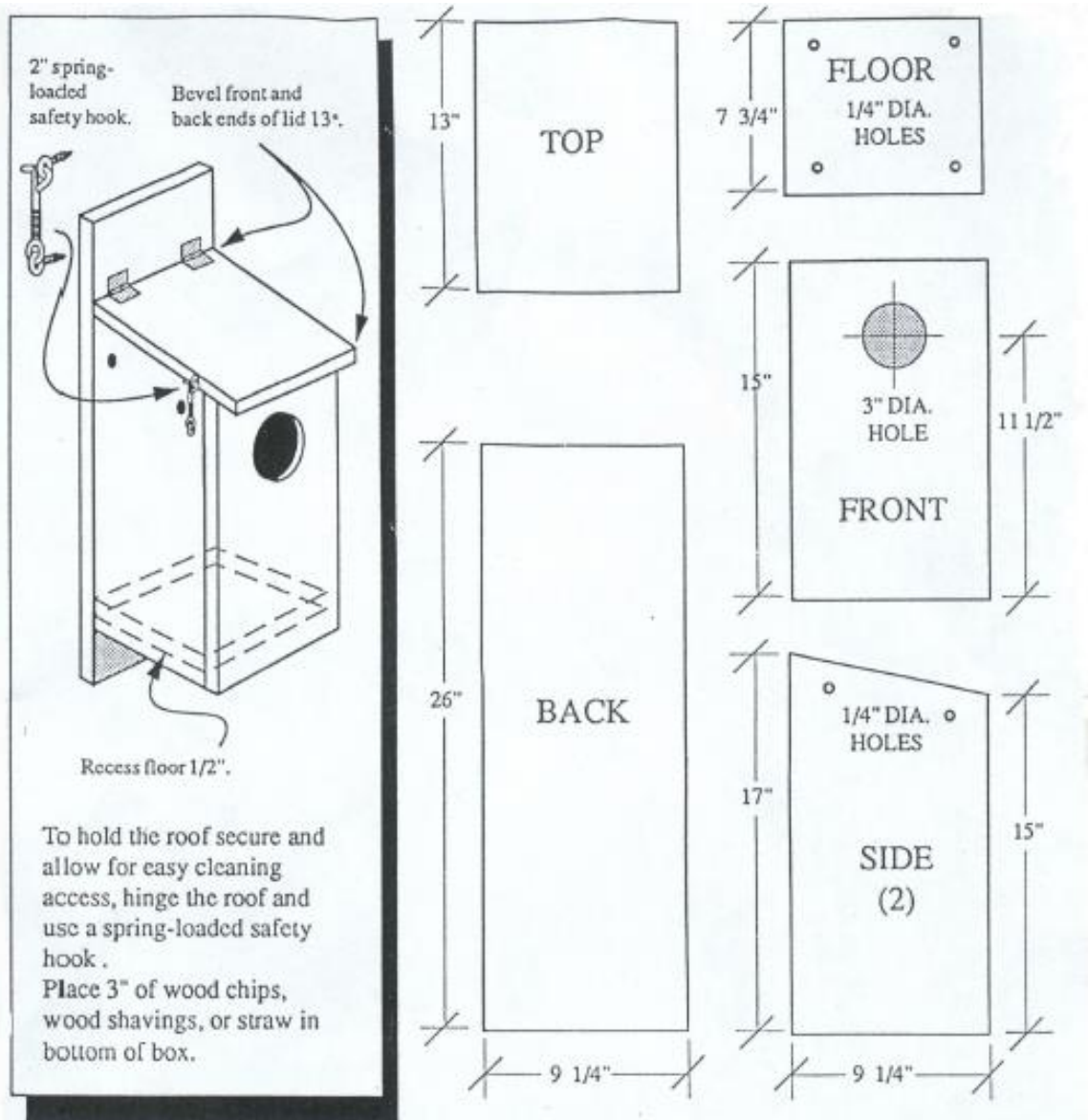
II. AREAS AND TIMING

Installation sites of kestrel boxes shall be shown on the plans, while the methods used, and timing of treatment are shown on the Implementation Requirements Sheet and supporting materials. More specific planning guidance and requirements on locations and timing of installing kestrel boxes are listed below.

III. PLANNING AND GENERAL REQUIREMENTS

Nest Box Design Requirements:

- *Materials*
 - Use pine or cedar, but do not paint or treat with wood preservative
 - Use 1-5/8 “galvanized deck screws to assemble
 - Place about 3” of wood shavings in the bottom of the nest box. Although not essential, shaving may reduce eggs rolling around if nest box becomes unstable.
- *Design*
 - See following Figure 1 on following page. Follow all dimensions and specifications including the drain holes and hinged side door for easy clean out
- *Painting nest structure*
 - Painting the nest box is not necessary. Painting the nest box may increase the visibility of the nest box for predators.
- *Timing of Installation*
 - For elevations below 2,000 feet, structures should be installed by February 1.
 - For higher elevations install structures as soon as safe access and ease of installing is available
- *Need for predator guards*
 - Boxes mounted to metal poles or buildings do not require a predator guard.
 - Boxes placed on wooden posts or trees should be equipped with a predator guard 6 to 12 inches from the bottom of the box. If predation becomes a problem, relocating troubled nest boxes after a few seasons may be beneficial.



LUMBER: One 1" x 10" x 8' 0", (#2 white pine recommend). Painting the box will increase its useful life.
HARDWARE: Twenty-two 1 1/2" wood screws (#6), two 2" hinges and one 2" spring-loaded safety hook.

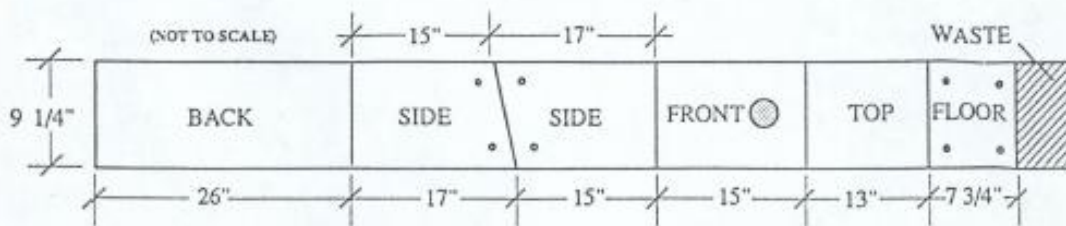


Figure 1. Kestrel. Nest Box Design and cut specifications*
 *Schematic and design from Audubon International

- *Placement*
 - Kestrel nest boxes should be placed on a tree, post, or the side of a barn or outbuilding with the entrance hole 15 to 20 feet above the ground,
 - They should be placed away from wooded areas, to decrease predation by Great Horned Owls, and hawks that prey on kestrels and distract them from nesting. This should also reduce squirrel and starling competition.
 - Open fields, pastures, hedgerows, and highway and power line rights-of-way comprised of or surrounded by at least one acre of space within 20 yards of a tree with dead limbs, a utility pole, or other perch make up the best habitat in which to place nest boxes. These habitat types in close proximity to creeks and wet areas have proven to be very productive for kestrels as well.
 - Open areas will provide food for hunting and adjacent trees, utility poles, and fence posts are used as plucking perches by the male kestrel to dismember prey before the female feeds it to the young. Perches are also used for preening, courting, and by fledglings when learning to fly
 - Avoid placing nest boxes near roads, where young kestrels learning to fly or hunt may. When placed near road entrance hole should be facing away from the road
 - Individual nesting pairs require an adequate territory in which to nest and forage. Nest boxes should be placed at least one-half mile from one another.
 - The box entrance should face southeast to avoid direct winds and to reduce direct sunlight through opening that increases internal box temperature.
 - In areas which experience ambient temperatures exceeding 90 degrees during nest season, consider attaching some type of heat shield
 - If predators such as raccoons or snakes discover an occupied nest box, they likely will continue to return for eggs or nestlings in the future. If such predation becomes a problem, relocating troubled nest boxes after a few seasons may be beneficial.
 - In agricultural areas, it is important that nest boxes be located a distance away from fields that are heavily treated with pesticides since the birds feed primarily on insects.
 - Make sure to place boxes where installation, monitoring and maintenance activities can be accomplished with little risk to those doing these activities.

- *Mounting (Figure 2, 3)*
 - For most farms or ranches nest boxes do not need to be mounted any higher than 15'. This will allow for easy access during monitoring and maintenance activities.
 - Mounting on metal pipes will reduce predation of eggs or young by snakes, raccoons, and squirrels.
 - Mounting to the steel pipe can be accomplished by welding a piece of angle iron horizontally to the post at a spot where the nest box can rest. The other method is to use pipe clamps (pipe grip ties).
 - Mounting on sides of building or trees can be accomplished using 5/16" lag bolts or threaded bolts.
 - When installing nest boxes with a pole they must be anchored in the ground at a depth of at least **3 to 6 ft.**, depending on the use of concrete to support the pole and the soil type placed in. Concrete extending down 6' may be needed where soils are not well compacted after installation, or pressure to pole during maintenance may shift the

stability of the pole. Where concrete is not used, the minimum depth of buried pole shall be 4 feet and soil type capable of sufficient compaction to keep pole vertical.

- Although nest boxes can be mounted to the side of barns or other buildings consider the level of disturbance in the vicinity of where the box is intended to be mounted.



Figure 2 Mount by welding piece of angle iron



Figure 3. Mount back of nest box with pipe clamps

IV. MONITORING

- Overall, one should attempt to accommodate the bird's natural nesting instincts and requirements while still allowing for routine monitoring during the nesting season.
- **Monitoring nest boxes should occur at least once a year.** If there is only an opportunity to conduct checks once, that check should be the Pre-season check.

V. OPERATION AND MAINTENANCE

- During preseason maintenance inspections (January – February) consider lubricating hinges, check mounting structures and recharge cleaned out nest box with two inches of fresh wood shavings can be placed in the bottom of the box for nesting material.
- If predators such as raccoons or snakes discover an occupied nest box, they likely will continue to return for eggs or nestlings in the future. If such predation becomes a problem, relocating troubled nest boxes after a few seasons may be beneficial.
- Exotic Species Control – Exotic species, specifically the European starling, compete with American kestrels for nesting cavities. If starlings are found to be nesting in a box, remove and dispose of the nest and its contents. The actual trapping and elimination of the adult bird in the box is more effective than simply removing the nest. However, most species of birds are federally protected and it is illegal to destroy them, their nests, or their eggs. Therefore, be certain of the bird species nesting in a box before control measures are implemented.