Owl Box Construction , and Related Matters

Suggested dimensions for screech-owl nest boxes include:

(1) 3-inch diameter entrance hole

(2) Floor area of at least 8" x 8"

(3) Vertical depth of at least 10" from the lower edge of the entrance hole to the floor inside.

It is surprising that even a fat screech owl can perch comfortably in a 3-inch opening, but this has proven to be one of their favorite positions (**photo 1**). The minimum floor area (8"x8") aims to avoid crowding of nestlings: if the floor space is crowded, owlets may try to fledge (leave the nest box) too early. The 10" depth below the entrance makes it difficult for predators such as raccoons to reach down to eggs or owlets, even with a long arm.

To date, we've built six screech-owl boxes, using the basic dimensions and construction from plans in Audubon Magazine
http://audubonmagazine.org/backyard/backyard0201.html

Wide planks (nominal "1x12") simplify the layout. We chose western red cedar because it was readily available and weathers well without requiring paint or preservatives.

We made four changes relative to the construction plans on the Audubon site:

(1) We added thin, sheet-metal sheathing over the wooden roof, for improved water-shedding and durability.

(2) The Audubon plan uses a hinged roof for access, but this would not work well with our metal roof sheathing, or with our ceiling-mounted camera. Instead, to open boxes for cleaning or repair, we chose to have the front wall of the box swing up and out (**photo 2**). This is easily arranged, since the front wall panel is captured between the two side panels, and fastened with screws through the side panels. If the uppermost screws on left and right sides are directly opposite each other (i.e., at the same

heights), this pair of screws can act as a pivot for swinging the front open.

(3) On the inside of the front wall, below the entrance hole, we added "rungs" to form an interior ladder (**photo 3**). These were heavily used, as both adult owls and owlets gripped them to climb up to the entrance hole. The owlets used these rungs as a jungle gym to develop their climbing strength, which is a vital skill when they first leave the box but cannot yet fly.

(4) We also added interior perches (wooden dowels, ½" or 5/8" diam.), either in the back corner of the box, or along one side. These perches are about 6" above the floor, and spaced an inch or two away from the wall. Although interior perches would not be a feature of natural tree cavities, the owls seem to use them frequently to reduce crowding on the floor of the box, and to facilitate peering at the outside world (the maturing owlets competed for this coveted vantage point (**photo 3**).

Owls do not bring any bedding materials into their cavity nests, but use whatever happens to be on the floor. In a natural tree cavity, this might include partially rotted wood debris, and/or leaves introduced by a squirrel. In our boxes, we placed several inches of fine wood shavings (an abundant byproduct of our woodworking shop), and chose shavings which were short and light, rather than long and stringy. Flying squirrels also liked our wood shavings: we have caught one "on camera" in the act of absconding with a mouthful. However, natural leaf litter (leaves crunched and shredded, rather than whole) would be a fine alternative for the owls.

At the end of a successful nesting season, the owls will abandon the box for the summer. This is good time to empty out the old nesting material, which will be a somewhat smelly mix of bedding, feathers, some dried feces from the owlets, together with a good population of tiny beetles and acrobat ants. The owls do some house-cleaning, especially after big dinners, and we have seen them take bunches of feathers out of the box after the owlets have dined on a bird. We

have read that they also attempt to pick up feces from the owlets and dump them outside the box, but have not been able to see this.

Squirrels: Squirrels utilize natural and artificial cavities (i.e., nest boxes), although they also construct sturdy nests of leaves in the tree canopy. We don't hate squirrels, but having invested much time and interest in our owls, we preferred to keep the nest boxes available for owls during the times when they were scouting for nest sites. This meant that we had to think of ways to humanely evict squirrels when they tried to take up residence in our owl box. We first tried various noise-makers, activated by pulling a string. The "Hammer of Doom" (**photo 2**) was effective for several days, although its heavy impacts tended to cause pieces of the owl box to fall off. "Doom Lite", a tuna-fish can suspended by bungee cords, enjoyed an even briefer spell of effectiveness, before the squirrels learned to just ignore its clopping noises. "Magic Fingers" (**photo 4**) emerged as the most successful device for squirrel management: a string attached to lever arm raises a carriage beneath the box, causing four slender sticks of bamboo to rise up through the drain holes in the bottom of the box. The sticks are not sharp, and their rise may be gentle; however, squirrels definitely do NOT like the sudden feeling that something is alive and moving beneath their bedding. The psychological effectiveness of "Magic Fingers" is enhanced when it can be triggered remotely, without revealing the presence of a human operator (a long piece of monofilament fishing line, led inside a window of our house, allows this "stealth" trigger). Our friend, Michael, devised an ingenious ploy which probably works similarly on squirrel psychology: he added a lever-operated door (also actuated by pulling a string from the ground) which simply seals the entrance. A squirrel which has been forced to spend a day "trapped" inside the nest box is probably not going to return very soon! On Bellewood St., Lloyd and Margie took a more direct approach to squirrel control, by live-trapping about 13 of them on the ground in a "Have-A-Heart" trap and deporting them to a suitably remote city park.

Bees: At the Bellewood box, honey bees took up residence as soon as the owls left, in both 2007 and 2008. In 2007, I relocated the bees to a box of their own within a week, but in 2008, I made the mistake of leaving bees in the Bellewood owl box all summer. During this time, they packed the owl box with about 40 lbs of wax and

honey, thoroughly entombing the camera. Relocating this colony to a new bee box was messy and involved, but was eventually accomplished.

"Boy Box": During 2008, we noticed that as soon as the female owl started sitting on eggs, the male owl moved his daytime roost location so as to be closer to the nest box. He did this in spite of the fact that nearby trees offered little or no shelter, either from the weather or from scolding bluejays. To make life easier for him, we tried the experiment of installing a second wooden box, in a hackberry tree about 25 feet from the nest box (**photo 4**). We were gratified when the male owl started using this box immediately for the 2008 "egg vigil". He moved into it again in 2009 when it was time to keep watch over the sitting female, and continued to use it even after the eggs were hatched. We suspect that he might prefer to be roosting in foliage, but he seems to resort to his box whenever he is harassed by mobbing birds.

The "Boy Box" contains an internal perch (wooden dowel) across its interior, and has its entrance hole oriented so as to provide a direct view toward the nest box. Since it has no camera, we really did not want the female to choose this box for nesting, so we made it small and cramped, installed no nesting material, and as the crowning disincentive, cut big holes in the floor (bigger than owl eggs!).

Because one wall of the "Box Box" faces west and is subject to heating by afternoon sun in late Spring, we installed a white-painted panel to shade the west side of the box (**photo 4**). The shade panel is set off from the box wall by spacer blocks, allowing convective circulation in the intervening air space. (No, we absolutely do not indulge in "lily-gilding" on Euclid St.)

"Walkaway branch": It's good to do a little planning about how the owlets will actually exit the nest box, on the night when they finally fledge. At this time, they can't really fly, although they can climb well. If they have to bail out into space from the nest-box entrance, they can flap their wings enough to sort of parachute safely to earth, but then they will have to quickly climb back up a tree trunk to avoid becoming cat bait. Following a suggestion from Chris Johnson, we arranged a piece of dead branch ("walkaway" branch) to connect the exterior perch of the nest box with a large limb of the nest-box tree. I used baling wire to fasten both

ends of this branch, but wire can be squeaky and in hindsight a soft cotton rope would have made a quieter lashing for the "walkaway". In 2008, three of the four owlets walked right up this branch into the haven of the oak tree, and then proceeded to climb out of sight into its highest branches. The fourth and last owlet, who was the weakest climber, made a death-defying leap to the roof of the nest box, and then stepped safely into the same oak.

Box placement: Nest boxes should not be easily accessible to cats or other predators. We have two boxes, with cams, on Euclid St. The owls use one of them, and resolutely ignore the other one. Although this could be chance, we suspect that the "reject" box is too close to our own house roof. We frequently see stray cats on the roof of our house, and the "reject" box would be an easy leap for an athletic cat.

To mitigate overheating in the Houston climate, we have attempted to install nest boxes with the entrances facing more or less north, in largish trees which will provide seasonal shade. However, an equally important consideration is to position the box so that it can be viewed from your favorite station, such as a particular window of your house.

We have usually hung boxes more than 25 feet above the ground, but we have read that 10 feet may be adequate. Owls typically approach natural roosts in "J-hook" flight pattern (steep climb at the last minute), so we have tried to choose box locations where the tree limbs were open enough to permit this flight pattern. Our owls do not seem greatly perturbed by human noises or lights. Their winter oak-tree roost is directly over our neighbor's trampoline, always a locus of screaming kids and barking dogs. Their summer roost is only about 9 feet from my upstairs woodworking shop above the garage. So it appears that proximity to houses does not seem to be a negative factor (provided the box is out of cat-leaping range, as noted above). The trunk of the oak tree with our "popular" nest box (used for nesting in 2008 and 2009) is only about four feet out from the eave-line of the neighbor's house, although the box itself is almost ten feet above their roof level .

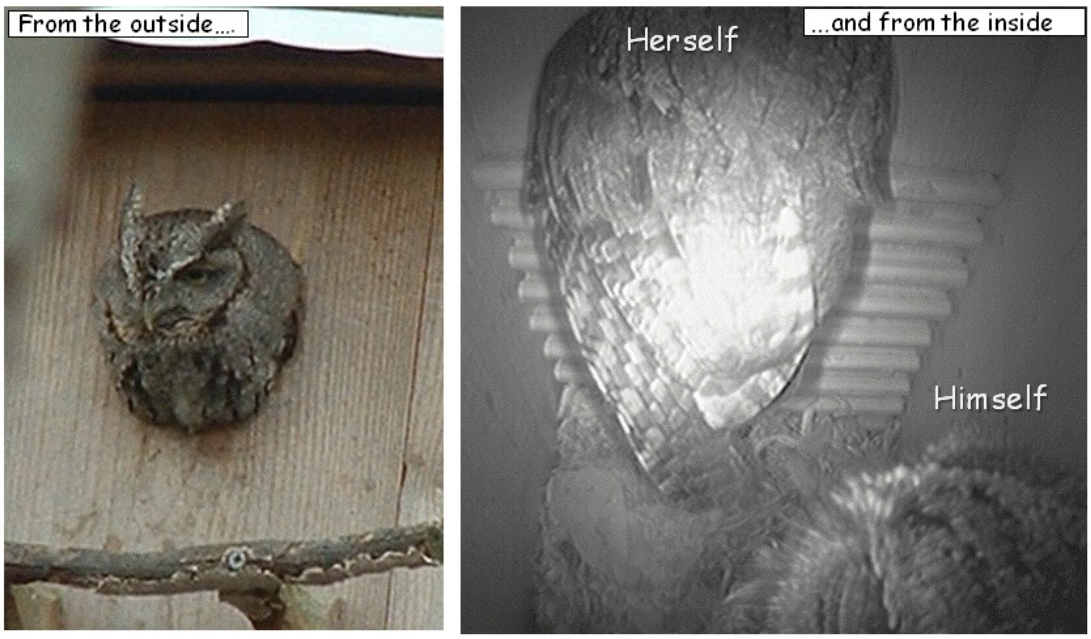

PHOTO 1

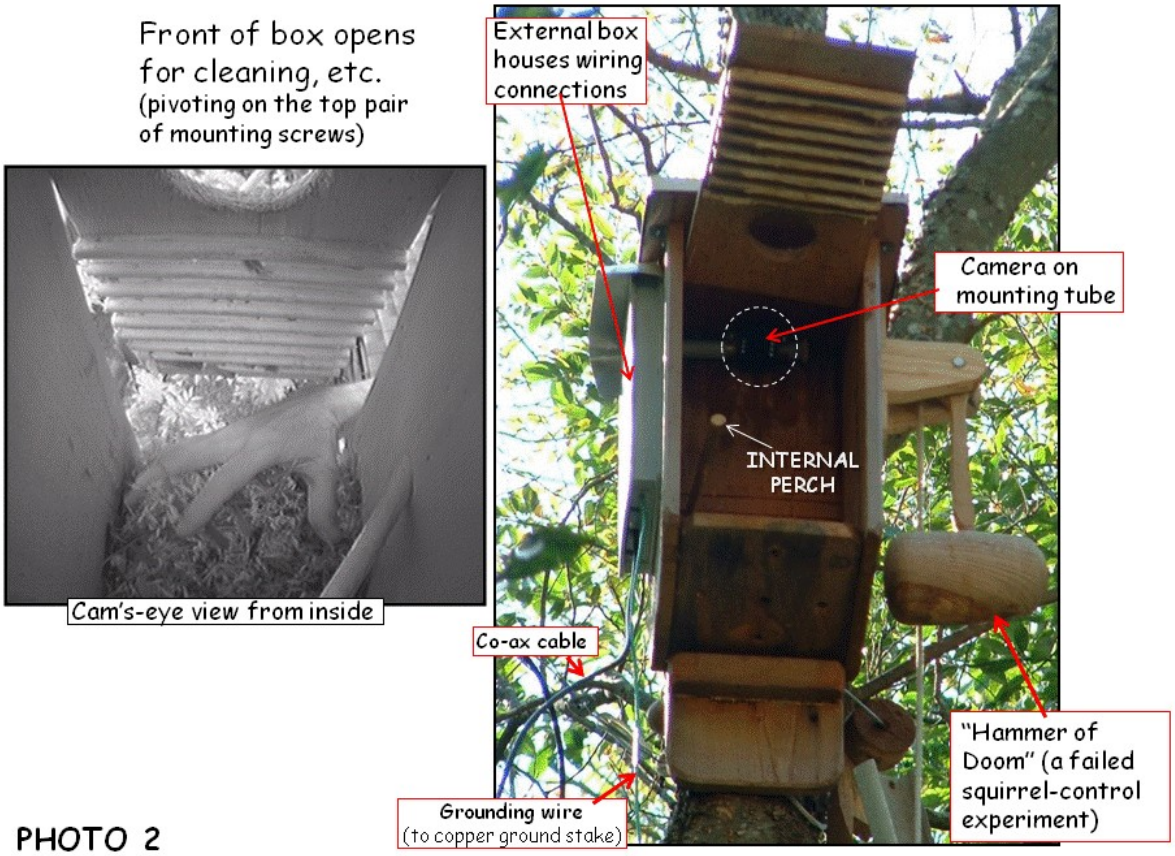

PHOTO 2

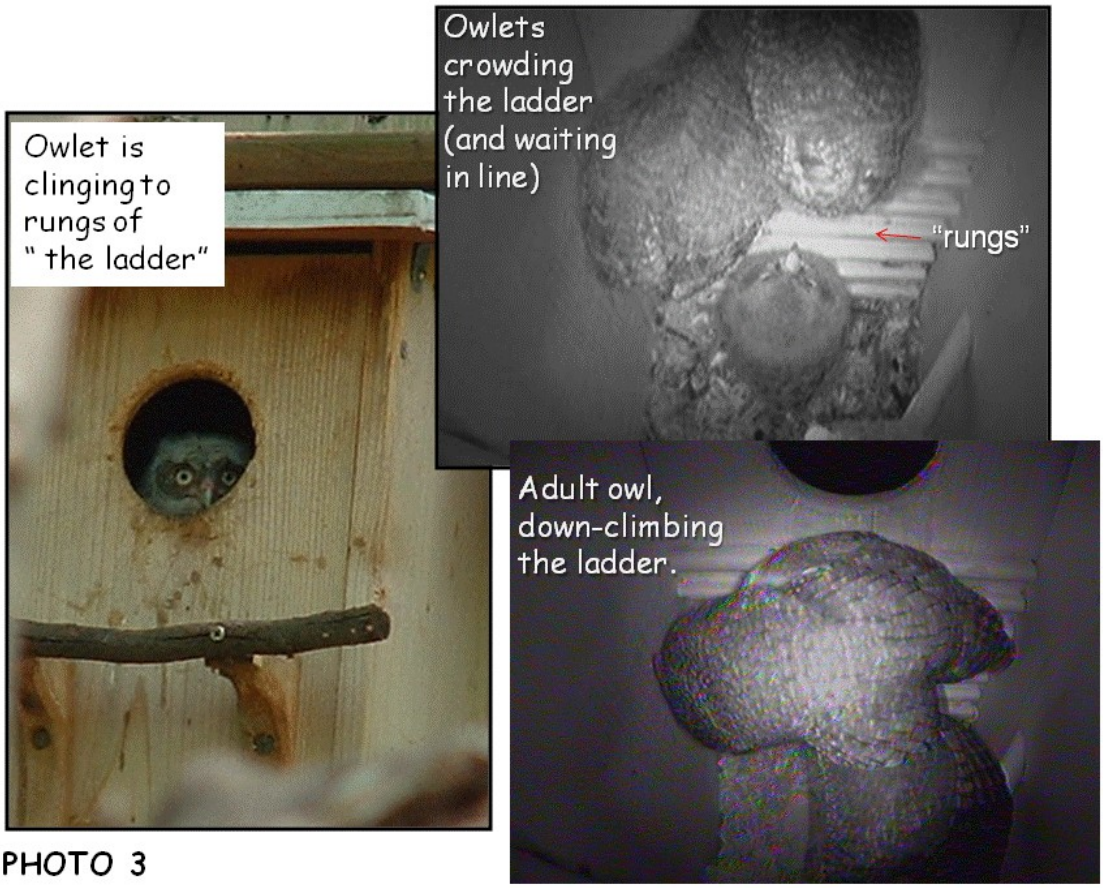

PHOTO 3

The "Boy Box" : not intended for nesting, but gives the male owl the option of a sheltered roost, which is close enough (25 ft) to let him watch the nest box.

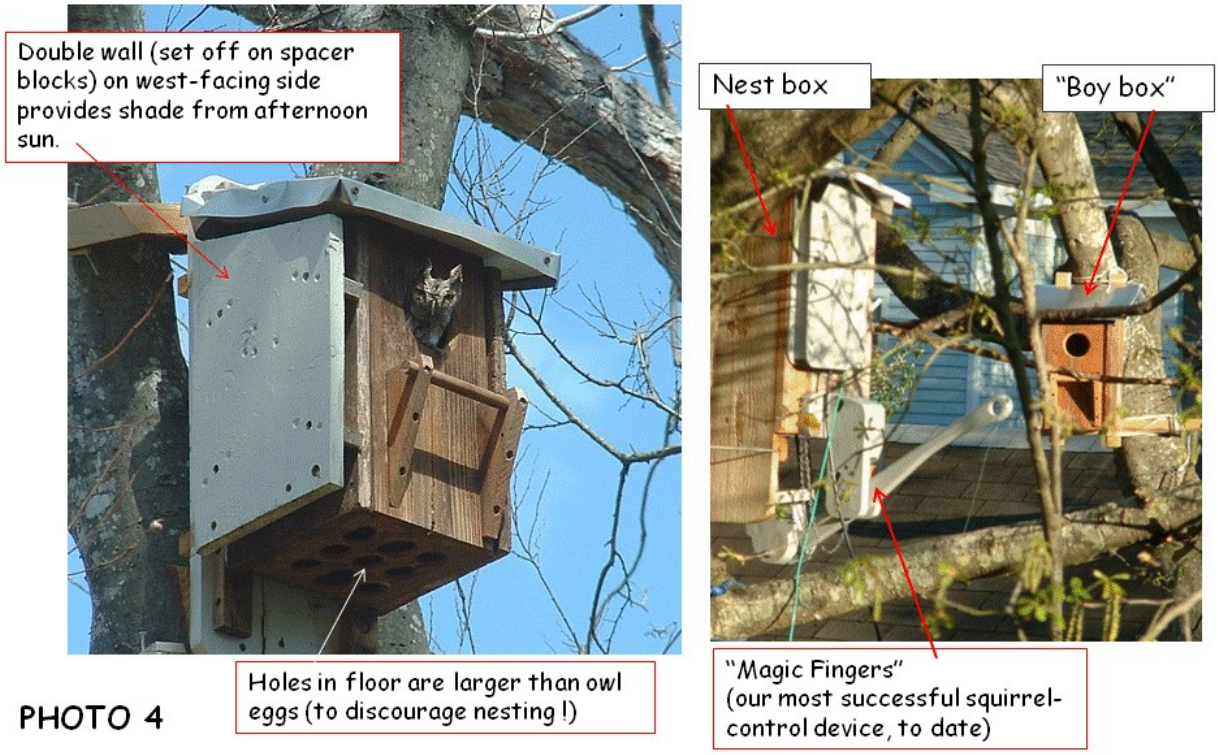

PHOTO 4