

**Project Perch's mission is to protect and nurture the Burrowing Owl in SE Florida.
A real life HOOT, join now!**



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The Artificial Burrow Design Used by Project Perch

The artificial burrow design that we use, comes from Dr. Mealey; he is locally known as the Burrowing owl expert as he consulted on the movie Hoot. He has been our technical consultant at Project Perch for years and generously donates 2 out of every 3 hours he works for the schools and we're pretty lucky to have him. So per his instructions, we bought 10' runs of 6" PVC pipe and cut them into 3 artificial burrows, each a little more than 3' in length. The bottom of the entire pipe is removed so that the owls have dirt under their talons, can dig and scratch and have traction the length of the pipe. One end of the pipe is cut at an angle so the entrance to the burrow is wide open. We use a file to smooth all the edges of the pipes to keep the owls from hurting themselves.



Dr. Mealey teaches these Pompano Elementary school students about burrow design. Photo courtesy of Bob Saley.

We install artificial burrows at a slight angle and also excavate out some space for the owls at the buried end of the pipe. To save the school's turf, we cut the turf and pull the grass back, install the burrow and then lay the turf back over the top of the pipe. Most burrows get a perch and at least 25lbs of sugar sand around the burrow entrance. Dr. Mealey calls this sand the "For Sale Sign" and owls spot this white sand pretty quickly. The students are taught to watch in the sand for owl prints to see how quickly the owls move in.

There were suggestions in the beginning to change our design and use 4" PVC pipe so that would save us some money, but Dr. Mealey had seen an owl damage its wing on the edge of the pipe as a cluster of owlets raced back down into the burrow. So we always use 6" PVC, always angle the opening of the burrow and try to get it flush with the ground and file away any sharp edges. Later on in the project we had some 4" PVC elbows and Ts donated and we are able to use those and fit them to the end of the pipe that is buried.



Dr. Mealey gives the principal a tour of the owl's new artificial burrow. He likes to say "Build it and they will come."

Artificial Burrow Design and How that Impacts Burrow Flooding

So the question was immediately asked "Does the artificial hole also add to some of the problems due to lack of soil absorption of the water?" This was a good question. The answer we sent back was:

"The artificial burrow actually helps them as it prevents a total burrow collapse. They may have excavated further to create additional tunnel and a nesting chamber, but they could use the artificial part like a "safe room" down there. The bottom of the pipe is removed so the water can easily be absorbed into the soil if the soil is not already saturated. This burrow is not too far from a designed swale area with a storm drain at the bottom, so we are hoping that helps the drainage locally for them."

A lot of our school projects involve installing artificial burrows in designed swale areas for several reasons. These areas are out of the way, on the edges of the school's property and they are not used by students. These areas are usually enclosed by a chain link fence and a locked gate and are accessed only by the lawn crew from time to time for lawn maintenance. At the center of these areas are storm drains. We always ask at schools if these areas ever flood and the answer is no because their very design is to drain. The outer edges of the swale are built up to keep the water in and when the owl burrows are installed, they are put in at the top of these artificially elevated outer areas. A burrow on the high ground in a swale area is a good design. We never realized how good until we watched the owls try to weather Tropical Storm Andrea.

Hopefully, these locations minimize burrow flooding and buffer the owls from this primary type of nest failure. Dr. Mealey found the second largest known cause of nest failure in his study to be collapse of the burrow (16%) with an associated mortality rate of 11%.¹ The artificial part of the owl's burrow, helps protect them from that too. In Dr. Mealey's study the collapse is caused by cow trampling but in urban burrows it is due to large lawn equipment. We hope that school owls with artificial burrows will have higher nesting success and lower mortality rates because the artificial part of their burrow will not collapse and the burrows are installed in high ground and are less likely to flood.

Sources:

¹ Mealey, Brian. 1997. Reproductive Ecology of the Burrowing Owls, *Speotyto Cunicularia Floridana*, in Dade and Broward Counties, Florida. Falcon Batchelor Bird of Prey Bird of Prey Center, Miami Museum of Science, Florida. <http://www.instwildlifesciences.org/Mealey.BUOW1997.pdf>