ANNUAL REPORT OF ACTIVITIES IN 1994

Project No. **94-MFO-Using Barn Owls to Control Pocket Gophers in Almond Orchards**

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This project has a number of objectives related to barn owls and the relative control of gophers that those bird predators can achieve. It has become very apparent that agriculture and people residing in rural areas have a major problem with controlling gophers. During the past year, over 300 people across the state have called about the project. Unfortunately, some of the callers have received wrong information about barn owls and the control of pocket gophers. Some people believe that owls can remove all the gophers in a particular area and thus, they can stop trapping or baiting gophers. Some people believe there are not any barn owls in their area and must have owls released near them to control gophers on their property. Some people believe that only a certain nesting box design will attract owls. Some people believe the owls will control all rodent pests including ground squirrels and rabbits. In summary, there is a huge need for education to extend known information about barn owls and controlling pocket gophers, as well as research to answer some unknown questions.

I. Owl Release Program--Modification and Approval

We started working on a modified system of raising and releasing barn owls in April with the **Fresno Wildlife Rehabilitation** (FWR) organization. This volunteer group is one of many across the state that are licensed and recognized by CA Fish and Game and the US Fish and Wildlife Service to accept, treat (or raise), and release wild animals. Previously, this group would release barn owls directly into uninhabited areas without a transition time or feeding due to the lack of volunteer help. Our first goal was to design a release cage through which birds would be protected, fed for a period of time, and allowed to adjust to their new surroundings. In addition, the cage must be practical for growers to build and maintain.

FWR started receiving immature owls from March through June from the general public. A number of volunteers cared for each bird for about 60 days at which time the birds were ready for release. During this time period, we located grower cooperators who were willing to make the release cages and care for the owls during a four week transition period. The modified release cage design requirement was 8′ by 8′ by 8′ with two windows and a door. Through grower

innovations, we were able to compare many different designs. The most promising design is a cage which can be easily taken apart into 4' by 8' sections and thus easily transported to another site (as seen in Figure 1). In total, we released 76 owls over 10 locations in Fresno and Madera Counties. All birds were safely released in good health after spending two weeks inside the release cage and then released with food provided on top of the cage for an additional two weeks. In December, 1994, Dave Garner (of FWR) and Mark Freeman received approval from CA Fish and Game to use this design. This approval is significant because the new International Wildlife Federation guidelines stipulate that release cages must be significantly larger. Due to our cooperative work, we received an exception to use our release cage.

In 1995, we plan to use the approved cage design and release more birds in agricultural areas. The material costs to build a release cage exceed $150, so we will investigate further ways to lower the building cost and encourage re-use and sharing of cages. We will also investigate some research questions such as:

1. whether placing a nesting box inside the release cage will encourage habitation of a nesting box (with a similar design) in nearby areas;
2. whether the released owls will reside in the nearby areas (as evidenced by color tags on the wings of released owls);
3. and what the released owls feed on (as measured by owl pellets) versus what native owls feed on.

II. Attraction of Owls to Agricultural Areas

There were numerous parallel projects along with the release cage design. First, we are collecting information already known about barn owl biology, behavior, and feeding on prey such as gophers. Second, we attempted to involve any interested biologists in this project, but very few researchers are working with barn owls in California. Dr. Desley Whisson, the new vertebrate control specialist at UC Davis, in now assisting us. Third, we are strongly encouraging growers to attract native barn owls to agricultural areas.

Due to the huge demand for information, we are focusing on extending known information. First, there is demand about construction of nesting boxes. Chuck Ingels with the SAREP program at UC Davis, is compiling different owl box designs and commissioned an artist to re-draw the plans. A grower with the drafting department at Fresno Community Junior College is drawing plans for an owl box which use raisin trays and sweat boxes (see Figure 2). Both the trays and boxes are no longer used and are in plentiful supply in the Fresno area. Second, we are compiling directions on methods to support the nesting boxes such as the poles and connectors (from poles to boxes). Limited number of power poles are available from PG & E and possibly phone companies. The

contact personnel from PG & E who can authorize the release of used poles are listed in Table 1.
Those poles which are pressure treated are considered toxic waste and can only be disposed of in toxic dumps. So, we are encouraging recycling of unused materials. Fresno area growers are using other materials to support the boxes and we are compiling those ideas. Third, we are compiling information on maintenance of boxes and helpful accessories (such as perches and internal dividers). Finally, we have developed a questionnaire to be sent to growers with owl boxes. We will attempt to measure the success rate of attracting native owls to man-made boxes.

Because of the informational needs listed above, we postponed the research project which would compare the attractiveness of different box designs.

III. Research measuring the effectiveness of barn owls reducing gopher populations

The most important question is determining how effective barn owls are at reducing gopher populations. We finally have a wildlife biologist, Dr. Desley Whisson, who is willing to assist us with that effort. Starting in the spring of 1995, we will collect owl pellets from known owl roosts and identify the prey from skulls and bone parts (within the pellet). Volunteers from local elementary schools and FWR are assisting us in the collection of owl pellets and dissection of the pellets. Dr. Whisson will assist us in identifying the prey found.

In addition, we have reviewed numerous papers on gopher monitoring techniques. With assistance from Dr. Whisson, we will initiate field plots to study possible relationships between gopher populations and their behavior (such as numbers of mounds, etc.). We submitted proposals to two different agencies to fund research using radio telemetry on barn owls to determine effectiveness on gopher control. Those proposals were not funded.

Directions for Building Owl Release Cage

1. Cut all 2x4's to specified lengths. Use deck screws to put the 2x4 frame together. Make sure the pressure treated 2x4's are on the bottom of frame.

2. Cut all sheets of plywood to specified lengths. Screw the sheets of plywood to the 2x4 frames using 1 1/2 screws on the 6" spacing.

3. Staple netting on the inside of the wall. Use strips of plywood to secure the netting to the frame. Nail the strips to the frame after netting is stapled.

4. After walls are finished, stand up the back wall and one of the side walls. Make sure the two walls are level and flush. Drill the top hole through the two walls. Place bolt through hole and tighten. Drill rest of holes and place bolts through holes. Repeat process until all walls are together.

5. Make sure door is put on after walls are together. May need three hinges for door. May need three hinges for door. Put a latch on the outside of the door and one on the inside of door. Use latch on inside of the door to clean out house when owls are present in house.

6. After all walls are complete, place 2x4 across the top of the house. Use lag bolts to secure 2x4.

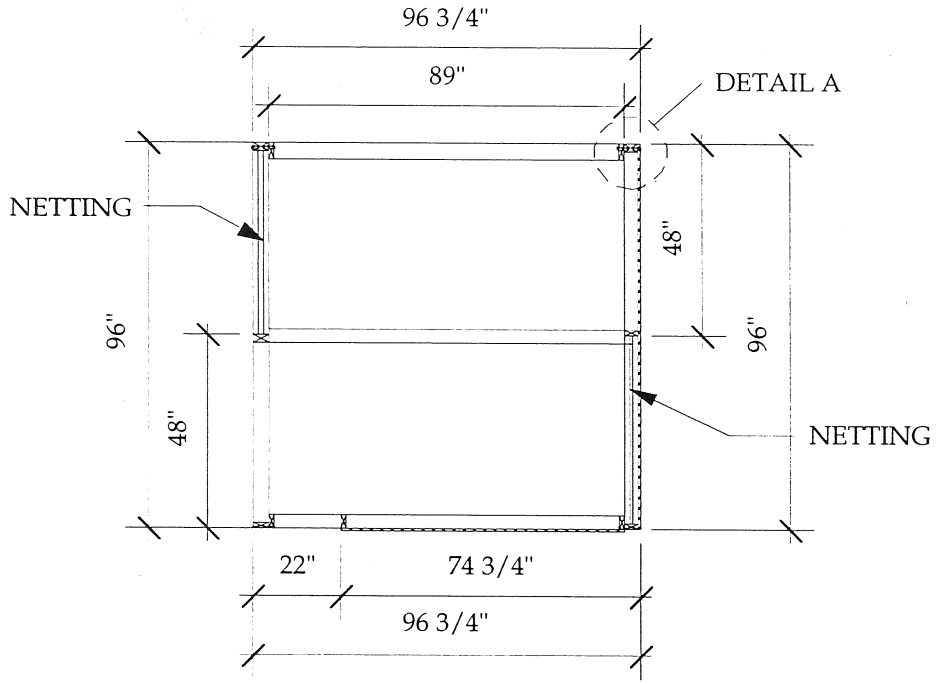
7. Place sheets of plywood across the top of the house and tack down with nails.

8. Print exterior of house with white exterior paint (water based).

9. Place a 1" wooded dowel across the inside of the house. Wrap dowel with 3/8" sesal rope. This will be the perch for the owls.

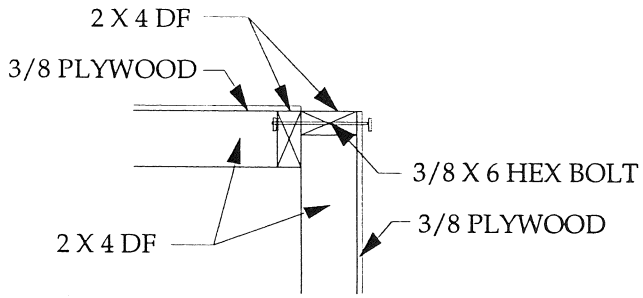
Materials Listing

Item	Number
4' x 8' Panels	11
2" x 2" Frames	37
Sunscreen	9 Linear Feet
Hinges	26
Bolts	-
3/4" Dowel, 6' - 8' length	1
Sesal Rope, 1/4" - 3/8"	

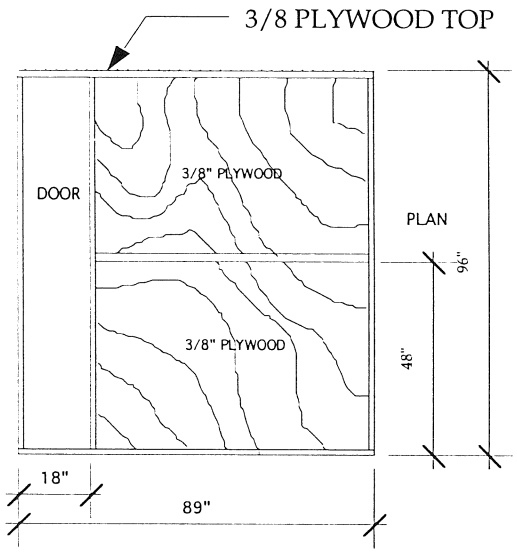


TOP VIEW

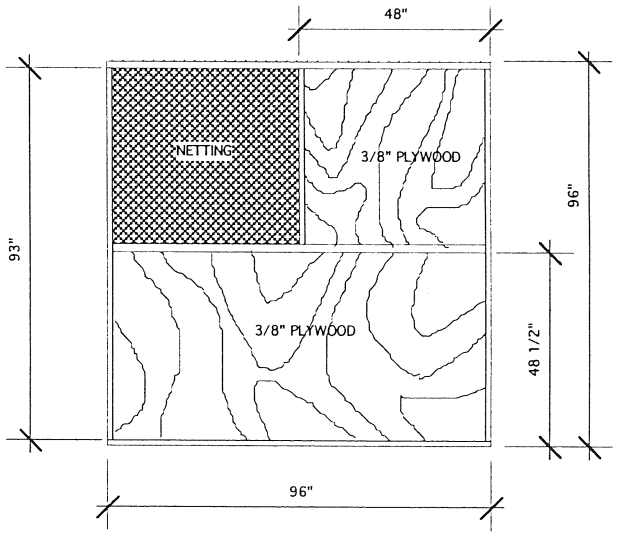
For more information contact
UNIVERSITY OF CALIFORNIA
COOPERATIVE EXTENSION
1720 S. Maple Ave., Fresno,CA93702
(209)456-7285



DETAIL A

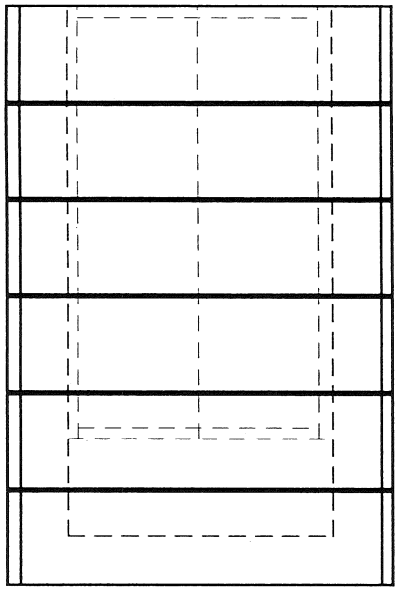


FRONT AND BACK SIDES
(Door on front side only)



LEFT AND RIGHT SIDE

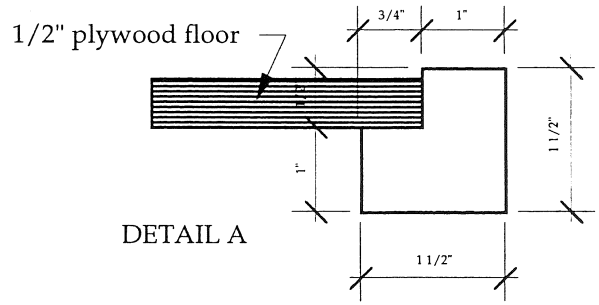
KINGSBURG OWL BOX



NOTES:

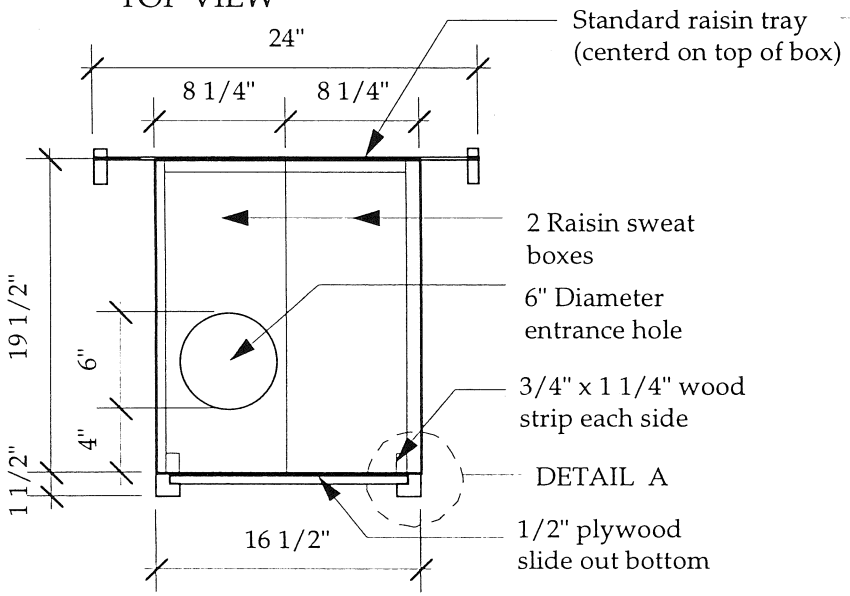
TWO RAISIN SWEAT BOXES ARE PLACED TOGETHER, WITH THE "OPEN" TOPS FACING EACH OTHER. THEN, THE BOTTOM WOOD SIDES OF EACH BOX ARE SAWED OFF TO GIVE A 19 1/2" HEIGHT.

A THIN PIECE OF WOOD 21" LONG BY 19 1/2" HIGH, IS ATTACHED TO THE TOP OF ONE RAISIN SWEAT BOX. THIS WILL CREATE A DOUBLE CHAMBERED BOX WHERE OWLS CAN ENTER, WALK TO THE BACK, AND ENTER THE OTHER CHAMBER THROUGHA SIX INCHWIDE DOOR.

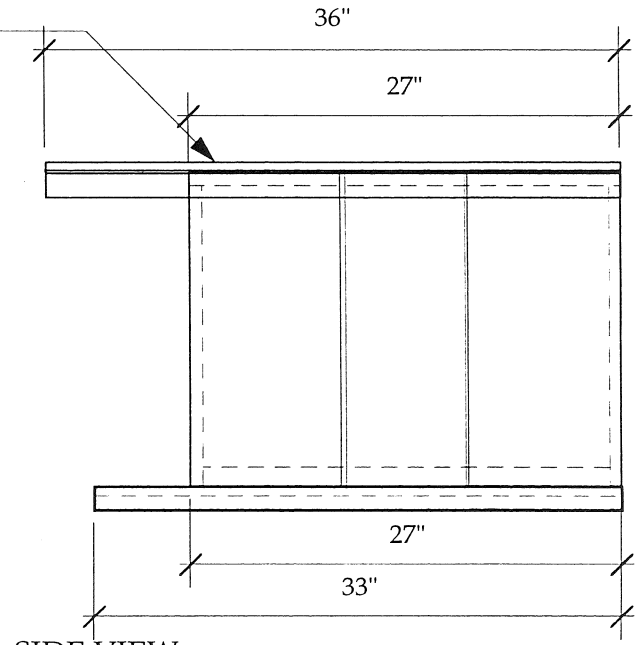


DETAIL A

TOP VIEW



FRONT VIEW



SIDE VIEW

Table 1

PG&E Environmental Services - Field Personnel
To contact about obtaining used power poles

Name	Telephone	Pager	Cellular	Fax
Rudy Promani 1919 Webster St. 5th Floor Oakland	(510) 874-2656	(510) 810-1296	(510) 409-7859	(510) 874-2678
Michael Bennett 650 "O" Street Fresno	(209) 263-5213	(209) 262-5213	(209) 269-5213	(209) 263-5262
Debbie Fudge 111 Stony Circle Santa Rosa	(707) 577-7234	(707) 269-8846	(707) 484-3608	(707) 577-7181
Robert Gray 111 Almaden Blvd. 6th Floor San Jose	(408) 282-7364	(408) 552-8942	(408) 499-2090	(408) 282-7218
Jesus Luna 1919 Webster St. Oakland	(510) 874-2220	(510) 430-5690	(510) 414-1521	(510) 874-2678
David Missall 460 Rio Lindo Ave. Chico	916) 894-4754	(916) 893-7431	(916) 521-1623	(916) 894-4737
Michael Newsom 406 Higuero San Luis Obispo	(805) 595-6308	(805) 542-2560		(805) 595-6310
Raul Ramirez 5555 Florin Perkins Rd Sacramento	(916) 386-5111	(916) 556-8926		(916) 388-7304
Ted Robinson 530 'E' Street 3rd Floor Marysville	(916) 634-6485			(916) 634-6505