

Scarlet Macaw Nest Box Design

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Based on work by Eduardo Nycander

Rainforest Expeditions

August 2000

The nest boxes described here were originally designed by Eduardo Nycander, Rainforest Expeditions and used at Tambopata Research Center. The design has evolved slightly since the original boxes designed in 1992. This report includes the changes added since that time. These boxes are currently being used by Scarlet Macaws in TRC.

The boxes described below should weigh from 30-40 kg empty. The total weight will depend on what types of substrates are used to fill the bottom of the box.

Design Specifications

PVC Tube: 14 inch or greater diameter, with a wall thickness of 7 - 10 mm. Any color is ok but light (white or light gray is probably the best). Length, 1.6 meters or greater.

Wire mesh: line the entire inside of the tube with #10 or #12 gauge 2inch x 2 inch galvanized wire mesh. Make sure to leave no sharp ends on the wire when you cut it.

Top and bottom: Use 1/8th or 1/4 inch steel circles to cover the top and bottom of the pipes. Paint with an anti-rust paint on both sides. Attach them by drilling 4 small holes in the metal and 4 equally spaced matching holes in the PVC tubes and use a medium gauge wire to wire the top to the PVC. If you want you could use a caulk to fill in the holes around the wires on the top. Alternatively, flat pieces of PVC pipe can be cut and fit to cover the top and bottom and joined with PVC glue. This option is more expensive.

Door: Cut a square opening about 15 cm x 15 cm about 20 cm up from the bottom of the box. The boxes I just built used this same piece of PVC that you cut out as the door. I used hinges and hinged on the door. This leaves a little room for light to get in, so I don't know if this will cause any problems for the birds. The old boxes at TRC (that we know work) use a piece of PVC that is about 20 cm x 20 cm. This is mounted so that it can slide up and down over the 15X15 opening. I will try and draw this in a computer file so you can see how it works. See the attached document in Word Format. If you can't read it, let me know (I just checked my entire system for viruses with the brand new virus software so don't worry about virus).

Entrance Holes: I use holes about 17cm high by 15 cm wide. I use two entrance holes placed at right angles. The first is about 10 cm from the top of the box and the second is about 20 cm from the top of the box. See illustration in Next box picture file attached.

Drainage. Drill 6-8 holes in the sides of the pvc pipe about 1/2 an inch up from the bottom to allow water drainage the holes can be about 3/16ths or 1/4 inch in diameter. Then drill another set of drainage holes up at about 3 inches just in case.

Filling the box: You can use a variety of things: saw dust, sand, rotten wood, etc. What I suggest is a little bit of gravel in the bottom (to keep the bottom set of drainage holes from getting clogged up), then on top of that a mix of sand and sawdust. The sand is nice because it doesn't rot away, so regardless how fast the sawdust rots away, there will always be something for the eggs to sit on. Some people recommend putting a piece of very rotten wood in the box for the birds to chew on (Carlos Yamashita pers. com.). We have never done this but you could try it if you want. I would fill the bottom of the box right up to the bottom of the door. This way it will be easy to take the chicks out, and provide a nice deep layer for the birds.

Hanging the boxes: Use climbing webbing or heavy-duty synthetic rope. I drilled 4 holes in the sides of the box near the top and attached 2 independent rope loops through the top of the box. These rope loops are then used to tie the box to the tree. You can tie the box to the tree using climbing webbing or heavy-

duty rope. I suggest using two different independent attachments to the tree. If the attachments are done correctly, they will help keep the box from spinning in the wind and when macaws arrive and depart.

Box locations: They should be hung on the tallest emergent trees available. They should be located in exposed branches or on tree trunks, below or at the level of the lowest foliage. See illustration. It is also good to have the tree isolated as much as possible from other canopy trees. This should reduce monkey visitation. The macaws may prefer trees with low epiphyte and vine load as well.

Equipment Used: The boxes are hung using professional quality tree/rock climbing gear. The following is a partial list of the gear needed. It does not include all the gear needed for the individual climber as each climber will have their preference for the exact gear they use.

Static rope: Two, one for the climber and one for the box. NOTE never raise the box using a rope that will ever be used for a climbing person. Hauling heavy loads like the box can permanently damage the rope making it unsafe for people.

Pulleys: 2 One is used at the top of the tree and one at the bottom during box raising.

Jumar or equivalent ascenders: 3, One pair for the climber and one extra to secure the box rope.

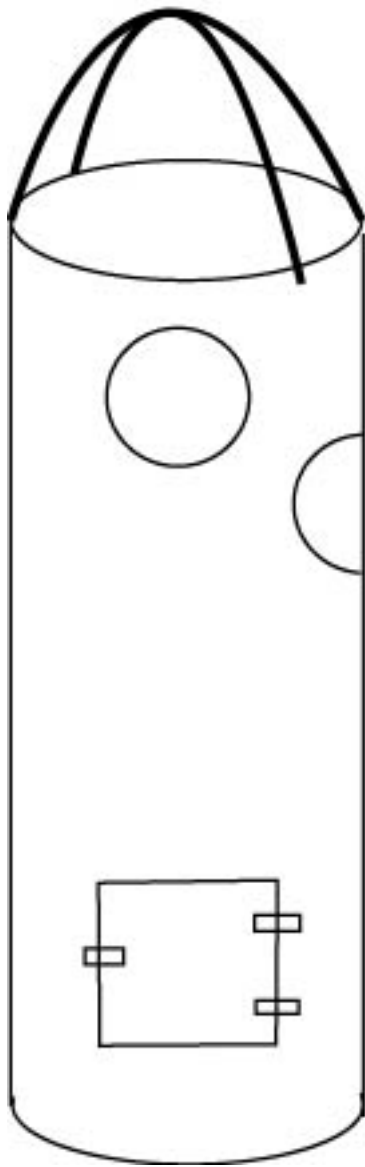
Figure 8 descender or equivalent: for the climber to descend from the tree.

Locking Carabineers: Many. I use two to attach the ropes tied to the box to the ropes tied to the tree. This can be accomplished as well with knots.

Tubular or Flat Webbing: Has many uses in the climbing set up, but I also use it to attach the nest box to the tree.

Webbing ladders and extra webbing anchors: These are useful for the climber to change locations and angles while in the tree.

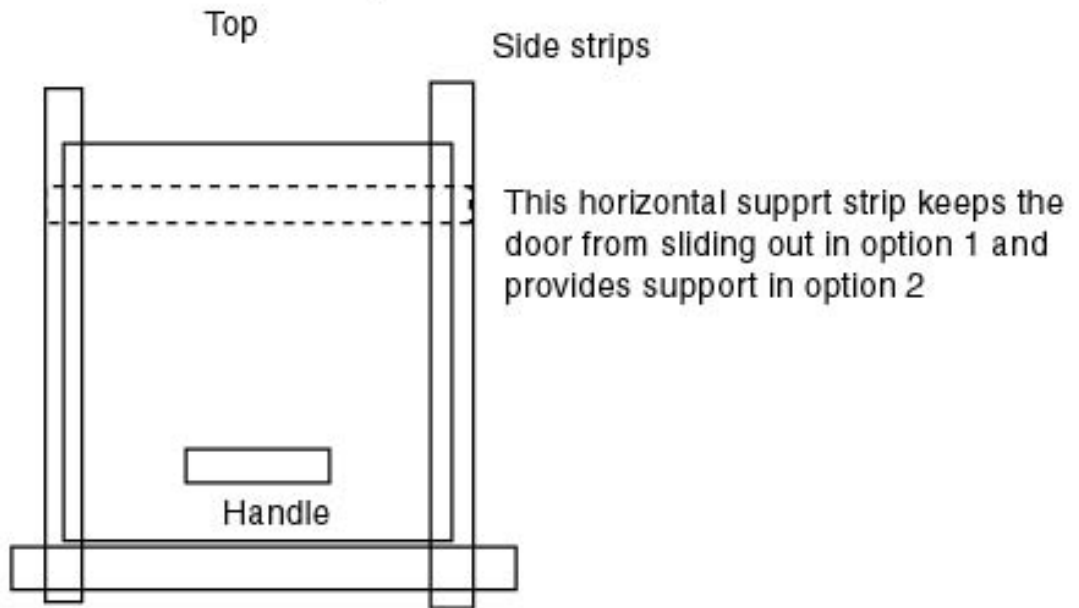
General Nest Box Design



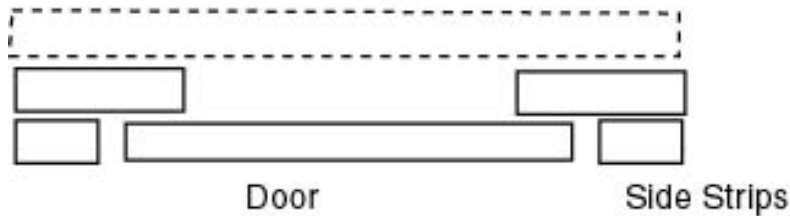
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Door Options for Macaw Nest Boxes

Front View Option 1 and 2

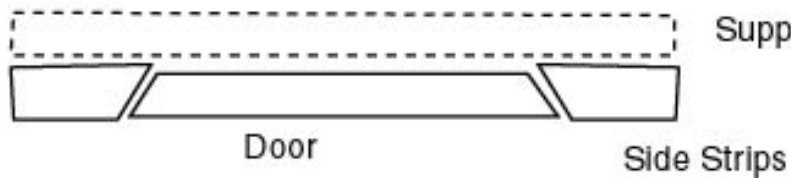


Side View Option 1



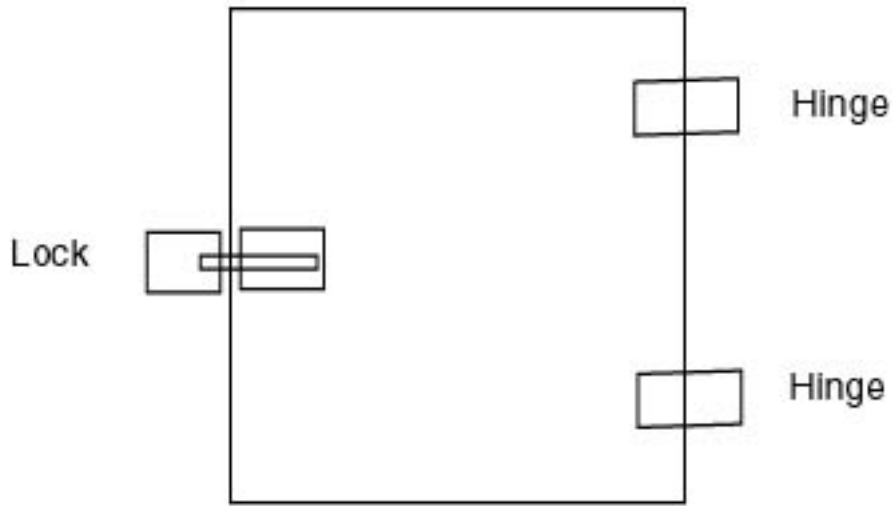
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Side View Option 2



Support Strip goes across top

Macaw Nest Box Door Design Option #3



Use Brass or other non rustable hardware

Suggested Nest Box Placement

