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Capturing Woodpecker Nestlings with a Noose -- a Technique and Its Limitations

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A woodpecker's eyes are closed for approximately the first ten days of its life, but it can still sense changes in light intensity through its translucent eyelids (Jackson 1970, 1976). During this time the nestling's begging response is innate and triggered by a change in light intensity from light to dark as a parent puts its head in the entrance. When the light is blocked, the nestling raises its head and leans back on a tripod formed by its calloused heels and the fleshy part of its tail, using tiny wings to balance itself (Figure 1). During these ten days the woodpecker nestling has no emergent feathers. The researcher can use this innate response as an aid to capture nestlings for banding and study without the nest damage that other techniques require (Erskine 1959). During the past fifteen years I have developed and used the noose described below to capture woodpecker nestlings of most species found in eastern North America.

Constructing the noose

The noose is constructed from a piece of flexible plastic or rubber tubing through which monofilament nylon is threaded and attached at one end (Figure 2). I have successfully used tubing of a number of different sizes, but tubing of about 1 cm external diameter with about 3 mm thick walls works best. Smaller diameter tubing tends to be too flexible; larger diameter tubing is sometimes not flexible enough and can be so cumbersome to use that injury to the young could result. Monofilament line of 20-40 pound test works best. Weaker nylon tends to form "looser" loops and may cut the thin skin of the birds; stronger nylon lacks the flexibility needed and can cause bruises if pulled too tightly. Plastic and rubber tubing both have some disadvantages. The plastic tubing tends to hold a curve (as a result of the tubing coming rolled up) such that the end of the tubing is forced against the front wall of the nest cavity; rubber tubing often holds a curve less, but flexes to follow the contour of the back wall of the cavity. Positioning of loops as the noose is inserted into the cavity can compensate for these problems (e.g., with plastic tubing keep the loops "up" as the noose is inserted; with rubber tubing keep the loops "down" as the noose is inserted). The desired effect is to place the loops so they will slip over the head of a nestling in the center of the nest.

The length of tubing needed depends on the depth of the cavity in which the noose will be used. Since most woodpecker cavities range from 15-30 cm deep, a tube 25-45 cm long is adequate. The tube needs to be long enough to reach the bottom of the cavity while leaving enough extending from the cavity entrance for the investigator to have a firm hold. Longer tubing is undesirable because of friction between the nylon line and the interior of the tubing.

In constructing the noose, cut a piece of nylon line about 2½ times the length of the tubing to be used and thread this through the tubing. Sometimes a long wire or knitting needle is needed to push or pull the line through. Next thread one end of the nylon on a large sewing needle and push the needle and line through one wall of the tubing from the inside out about 0.5 cm from the end of the tube (Fig. 2A). Remove the needle, tie a large knot in the line at the outside of the tube to prevent the line from pulling back through the tubing wall, and trim excess line. While only a single nylon line is needed, the effectiveness of the noose is increased with additional lines. I generally use three lines. Once the lines have all been "sewn" to the end of the tubing, use the needle to "pull" each line partially from the tube to form a loop with an opening of 7-10 cm.

At the opposite end of the tube, tie a knot in the line or lines such that the knot is right at the end of the tubing (Fig. 2B). This knot will mark the maximum extent to which you will open the nooses. Next pull the lines from the end just knotted to close the loops to an opening of 0.8-1.0 cm. Tie another knot in the lines at the opposite end of the tube from the loops (Fig. 2C). This knot will mark the maximum extent to which you will close the loops. Positioning of this knot is particularly important, since when in use the noose will be out of sight and the knot will be the major cue that the loops have been closed sufficiently, but not too tightly.

In practice, the nylon lines often do not slide smoothly

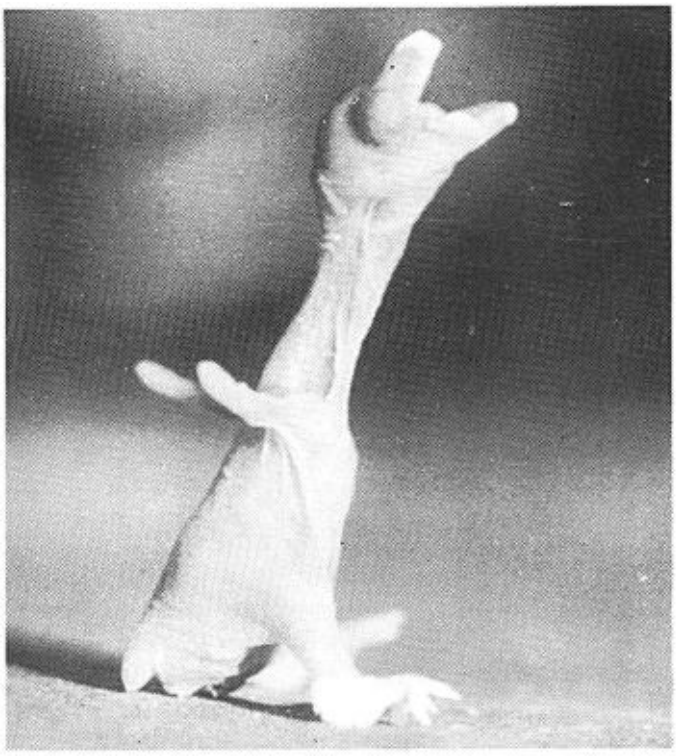

Figure 1. A six-day-old Red-headed Woodpecker *(Melanerpes erythrocephalus)* in the begging posture in response to "turning out the lights." The heavily calloused "heels" and the tail support the bird; the outstretched wings help it keep its balance. (From Jackson 1970.)

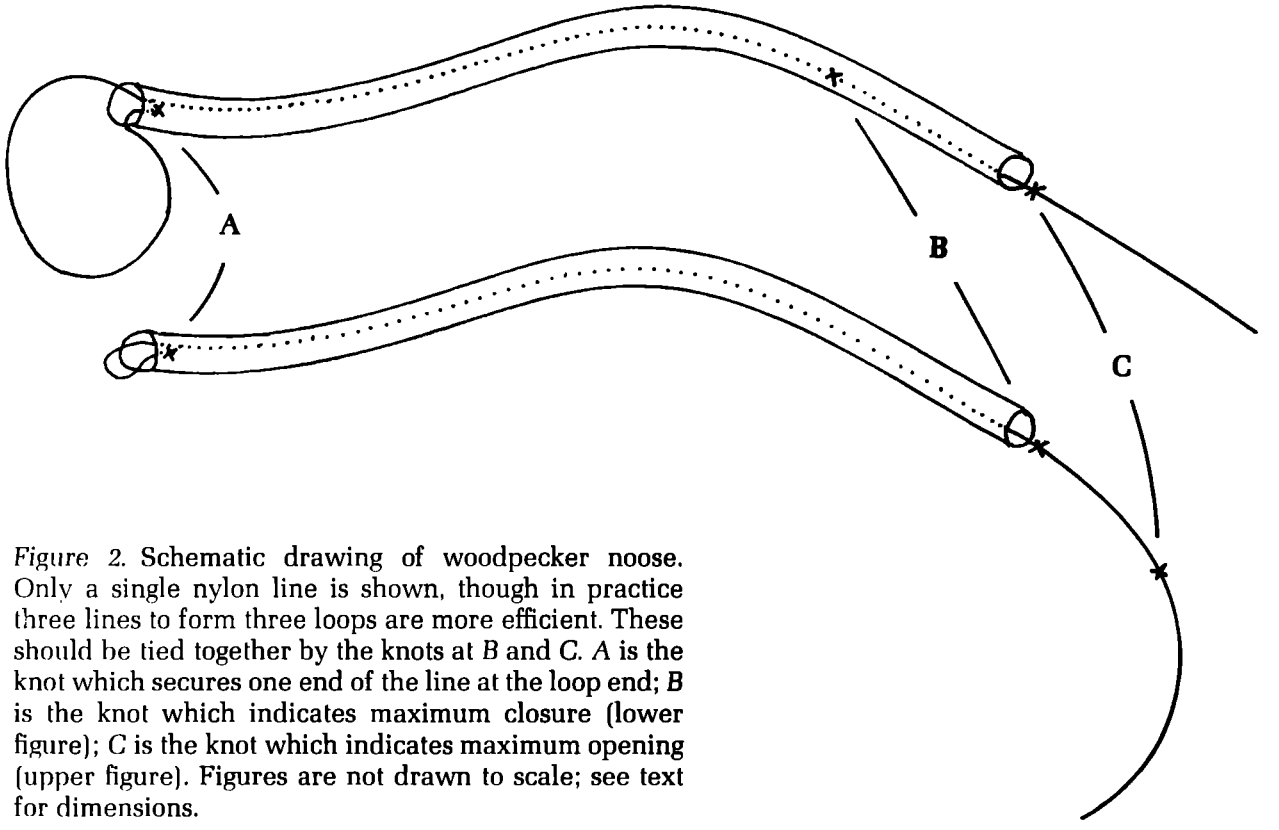

Figure 2. Schematic drawing of woodpecker noose. Only a single nylon line is shown, though in practice three lines to form three loops are more efficient. These should be tied together by the knots at *B* and *C*. *A* is the knot which secures one end of the line at the loop end; *B* is the knot which indicates maximum closure (lower figure); *C* is the knot which indicates maximum opening (upper figure). Figures are not drawn to scale; see text for dimensions.

along the interior of the tubing and a lubricant is needed. It is essential to keep movement of the nylon lines free, since undue force could result in injury to the young. I have used baby oil, automobile oil, powdered graphite, and a silicon aerosol as lubricants. The latter worked best, though all were acceptable. Only a small amount of lubricant is generally needed, and this can be put into each end of the tube. Having forgotten a lubricant on some occasions, I learned that enough oil was usually present on the dipstick from the crankcase of my truck to adequately lubricate the line.

Using the noose

The age of nestlings greatly influences the effectiveness and hazards of using the noose. Nestling age can generally be ascertained using behavioral cues provided by the adults and young (Jackson 1976). In short, young are brooded by an adult much of the time during their first four days and rarely after that. Young respond to the change in light intensity until about ten days of age; after that they become quiet when disturbed.

At an age of 1-4 days, most woodpecker nestlings are too small to retain a band of the specified size for the species. Further, the thermoregulatory ability of the young is not well-developed and prolonged absence of the brooding adult can result in death of the young. Until the age of about 10 days, the noose can be used effectively to capture nestlings by pushing it into the nest with the loops open, placing a hand over the hole to elicit the begging response, and then quickly but carefully pulling the loops closed. Often two or more nestlings will be caught simultaneously and all can generally be pulled safely from the nest. The best age for removing nestlings for banding is between 5 and 9 days. For species in which the plumage of nestlings is sexually dimorphic (generally by extent of red on head), enough color is often present in the feather tracts to allow sexing by the age of 8-9 days — even though the feathers are not emergent. I have found this to be true in Red-cockaded *(Picoides borealis)*, Downy *(P. pubescens)*, and Hairy *(P. villosus)* Woodpeckers.

After the age of about 10 days, the nestlings begin to open their eyes and feathers begin to emerge. With the opening of the eyes the nestlings no longer beg in response to a change in light intensity. Instead they cue in on the appearance of the adult at the entrance and adult vocalizations. When the noose is inserted into the cavity the young typically cower with head held tightly against the bottom. With repeated "snaring" attempts, particularly if the tube is twisted after it is in the cavity but before the loops are pulled closed, individual nestlings may be caught by a wing or foot. At this older age, they are rarely caught by the neck. Such snaring can sometimes result in broken bones and often will result in damaged or destroyed flight feathers. In my opinion, after the age of about ten days, the risks associated with this method of capture do not justify the attempt to remove the young. I have captured several hundred woodpecker nestlings younger than ten days old with no mortality and very few bruises.

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