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Received 15 July 1994; accepted 15 July 1995

J. Raptor Res. 30(1):31–32

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A MECHANICAL OWL AS A TRAPPING LURE FOR RAPTORS

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KEY WORDS: *Bubo virginianus*; capture technique; great horned owl; lure; mechanical owl; mist net.

A live great horned owl (*Bubo virginianus*) used as a decoy is an effective method for capturing several species of breeding raptors (Hamerstrom 1963, Bloom et al. 1992, Steenhof et al. 1994). Similar techniques were practiced by Arab and Persian falconers (Meredith 1943). Taxidermy mounts of great horned owls have also been used successfully to capture breeding raptors, but are not as effective as a live owl (Bloom 1987). Gard et al. (1989) reported breeding American kestrels (*Falco sparverius*) responded less aggressively to a mounted great horned owl than to a live owl, suggesting that the lack of movement or some other subtle cue by the mounted owl may account for the lower response rate. However, logistics (e.g., weather conditions, remote nest sites, maintenance of owl, legal constraints) sometimes warrant the use of a mounted owl as a substitute for a live great horned owl. Here, I describe the materials used to construct a moving mechanical owl and compared the results of my trapping efforts with this lure to other studies using a live and mounted (taxidermic) great horned owl.

METHODS

Materials and Assembly. A two-channel remote control unit (transmitter, receiver, battery pack, and two servo mechanisms) designed for a model car was slightly modified to provide movement to a mounted great horned owl. The owl's head and body were separated and mounted independently using standard taxidermy procedures. The mechanical owl's body was attached to a horizontal wooden perch (9 cm dia. × 20 cm). A piece of styrofoam was excised from the body of the mechanical owl at the top center and fitted with servo A (Fig. 1). Two vertical pins (3 mm dia. × 10 cm) were glued into the control arm of servo A and two corresponding sleeves were glued into the

styrofoam head of the mechanical owl. Servo A supported and provided movement to the mechanical owl's head. Servo B was placed in a holding bracket constructed of sheet metal and attached to an aluminum rod (7 mm dia. × 1 m) used to support the mechanical owl's perch. In the underside of the mechanical owl's perch, I inserted a copper sleeve (9 mm dia. × 12 cm) into the center and a pin (4 mm dia. × 11 cm) at one end with approximately half of the pin exposed. To provide movement to the entire mount, servo B's control arm was modified with a piece of tempered wire (3 mm dia. × 30 cm) bent in half and attached at both ends to the control arm. The mechanical owl and perch assembly were positioned on top of the aluminum rod, elevating the owl 1 m above the ground and allowing rotation of the mount. Servo B provided movement to the entire mount, allowing the observer to control movement of the entire mount and the mechanical owl's head independently.

Method of Use. From 1989 through 1995, the mechanical owl was tested on breeding sharp-shinned hawks (*Accipiter striatus*), red-shouldered hawks (*Buteo lineatus*), and Cooper's hawks (*Accipiter cooperii*). A response was considered to have occurred when the target species stooped at least once within 1.5 m of the mechanical owl's head. During the nestling stage the mechanical owl was centered <1 m from the net, in view of and <50 m from the nest. An observer concealed <25 m from the net activated the owl (via transmitter) when at least one of the adults was detected near its nest.

RESULTS AND DISCUSSION

Overall, the mechanical owl was successful in eliciting a stoop from 79% (75/95) of the nesting adults. This response was slightly lower than the 93% Gard et al. (1989) reported when using a live great horned owl on American kestrels, but considerably higher than the 33% they found with a mounted great horned owl. Fifteen of the 20 adults that did not attack the mechanical owl vocalized for >15 min before leaving the area. The remain-

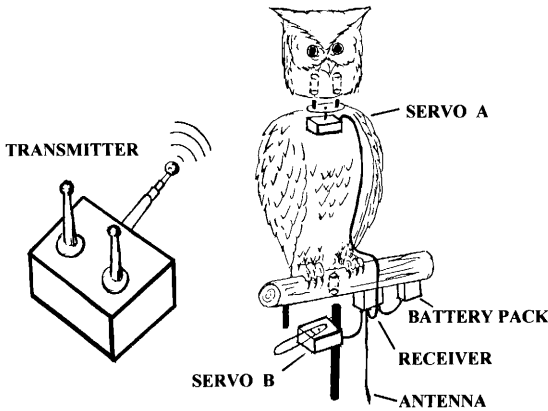


Figure 1. Mechanical owl, transmitter, battery pack, receiver and servo assembly.

ing five individuals did not show any aggressive behavior toward the mechanical owl and left the area after a few minutes.

While trapping red-shouldered hawks in California, Bloom et al. (1992) reported a higher capture rate using a live great horned owl than I experienced using a mechanical owl in Wisconsin (Table 1). Of the 13 red-shouldered hawks not captured with my technique, three stooped at the mechanical owl but escaped after hitting the net.

In general, Bloom et al. (1992) found larger raptors were more difficult to capture than smaller ones. I experienced similar results with the mechanical owl on the three species I tested. The sharp-shinned hawk was the most aggressive, occasionally hitting the net and escaping ≤ 4 times in < 10 min. On six occasions the adult(s) apparently saw the net and avoided it on each stoop. The mechanical owl and net were then moved a short distance (< 15 m), resulting in four captures.

The mechanical owl was an effective decoy for capturing these three raptors. Even though attack and capture rates were slightly lower using the mechanical owl than in studies using a live great horned owl, I recommend its use when logistics render the use of a live owl difficult.

Table 1. Comparison of capture rates of a mechanical owl to a live owl as a trapping lure.

	MECHANICAL OWL (THIS STUDY)	LIVE OWL (BLOOM ET AL. 1992)
Red-shouldered hawk	54% (15 of 28)	75% (199 of 264)
Cooper's hawk	60% (3 of 5)	52% (32 of 62)
Sharp-skinned hawk	77% (48 of 62)	^a

^a Not given.

RESUMEN.—Un búho preparado taxidermicamente fue equipada con mecanismos radio-controlados en la cabeza y percha que permitan movimientos al búho. Este ingenio mecánico y una red de niebla fue usada como técnica de captura durante siete estaciones reproductivas de tres especies de rapaces. Este método fue exitoso atrayendo a un 79% de adultos reproductivos. Setenta y siete por ciento de *Accipiter striatus*, 60% de *A. cooperii* y 54% de *Buteo lineatus*, fueron capturados por este método. El movimiento del búho mecánico pareció ayudar a las especies blanco a localizarlo y verlo como una amenaza hacia sus juveniles. [Traducción de Ivan Lazo]

ACKNOWLEDGMENTS

I am grateful to L. Semo, L. Ayers, T. Hoppa, P. Hnilicka, R. Jacobs, G. Wolf, D. Grosshuesch, S. Braun, G. Proudfoot, and S. Lind for their field assistance. J. Runke supplied the drawing in Fig. 1. J. Jacobs, L. Semo, R. Rosenfield, D. Evans, P. Bloom and P. Schempf provided helpful comments and suggestions on the manuscript.

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Received 14 April 1995; accepted 1 September 1995