J Raptor Res. 33(2):168–169

IMPROVING THE SUCCESS OF A MOUNTED GREAT HORNED OWL LURE FOR TRAPPING NORTHERN GOSHAWKS

JON T. MCCLOSKEY[1] AND SARAH R. DEWEY

USDA, Forest Service, Ashley National Forest, Vernal Ranger District, 355 North Vernal Avenue, Vernal, UT 84078 U.S.A.

KEY WORDS: *Great Horned Owl*; Bubo virginianus; *Northern Goshawk*; Accipiter gentilis; *trapping.*

Dho-gaza nets with live Great Horned Owl (*Bubo virginianus*) lures are one of the most effective ways of capturing raptors during the breeding season (Bloom et al. 1992, Steenhof et al. 1994). However, the rigors of field conditions, stress on the owl during handling and transport and risk of injury or death to both the owl and intended capture bird should be considered and may preclude use of a live owl. Mounted Great Horned Owls have been used to capture raptors but they are typically not as effective as live owls (Bloom 1987). Using a mounted owl, Gard et al. (1989) reported that the lack of movement resulted in a less aggressive response by breeding American Kestrels (*Falco sparverius*). Jacobs (1996) constructed a mechanical owl using a remote control unit to capture three species of hawks. Although his method was relatively successful, he did not provide detailed assembly instructions or mention factors (e.g., cost or mechanical failure) that may limit the use of this technique. Here, we describe a simple technique to improve the success of mounted Great Horned Owl lures and report the success of this method for trapping breeding Northern Goshawks (*Accipiter gentilis*).

METHODS

Trapping was conducted at 14 goshawk nest sites within Ashley National Forest located in northeast Utah. We used a modified dho-gaza (as described by Clark 1981) with a taxidermic mount of a Great Horned Owl as a lure to capture breeding goshawks during the nestling period. We placed the dho-gaza (net size 139.5 cm high × 256.5 cm long with 4.5 cm mesh) within 30 m of nests, selecting areas where natural vegetation provided flyways that would funnel goshawks into the net. Subsequently, one person laid face up on the ground <1 m in front of and toward the center of the net (between the net and the nest) covered by camouflaged netting. This individual held the owl upright on their chest and after the crew was out of sight, voiced the 5-note territorial hoot of the Great Horned Owl while moving the owl with their hands. Once an adult goshawk was captured, we reset the dho-gaza and attempted to capture the mate.

During the nestling period, male goshawks frequently forage away from the nest for extended periods. In contrast, females remain relatively close to nests and will aggressively defend against potential predators (Palmer 1988). For these reasons and because we did not always attempt to capture mates, we separated success rates into two categories: (1) birds caught first at each nest site and (2) capture of the mate. Trapping success was determined by calculating captures per attempt and we considered multiple trapping attempts at the same nest site as one attempt (see Bloom et al. 1992, Jacobs 1996) When attempting to capture mates, the individual with the owl was not placed under the net until we heard or observed the bird, thus minimizing discomfort to the individual. Because we were evaluating the effectiveness of the lure (not the net) to incite the bird to stoop at the net, we considered it a success even if a goshawk hit the net and escaped (i.e., this was our failure, not that of the lures).

RESULTS

Between 24 June–4 July 1995, we captured a total of 15 adult goshawks. We had an 86% (12/14) success rate for capturing goshawks during our initial attempts (category 1) and a 60% (3/5) success rate for subsequent attempts to capture mates (category 2). All but one (11/12) of the initially captured birds were females and all (3/3) subsequently captured birds were males. The remaining birds that were not captured during initial attempts vocalized but never stooped at the lure. Of the five attempts to capture mates, two were actually caught, one bounced out of the net, one vocalized but never stooped and one never appeared. Overall, there was a 79% (15/19) success rate using our technique to capture nesting goshawks.

DISCUSSION

Using a mechanical owl to capture breeding Red-shouldered Hawks (*Buteo lineatus*), Cooper's Hawks (*Accipiter cooperii*) and Sharp-shinned Hawks (*Accipiter striatus*), Jacobs (1996) reported a 54% (15/28), 60% (3/5), and 77% (48/62) success rate, respectively. Gard et al. (1989) reported 21 of 24 (87%) American Kestrels either vocal-

[1] Present address: Caesar Kleberg Wildlife Research Institute, Campus Box 218, Texas A&M University–Kingsville, Kingsville, TX 78363 U.S.A.

ized or dove at a live Great Horned Owl placed 10 m and 50 m from nests. The same study reported that only 8 of 24 (33%) kestrels responded aggressively to a mounted owl placed at the same distance from the nest. Our technique enables trappers to simulate the natural movement of the owl while hooting from the same location. These factors improved our success compared to techniques that used a mechanical or mounted owl alone.

Bloom et al. (1992), using three independent trapping studies of breeding goshawks, reported a 76% (41/54), 54% (27/50), and 67% (68/102) success rate using a live Great Horned Owl as a lure. These results are territory trapping success (TTS) rates (see Bloom et al. 1992 for definition) and are not directly comparable to our definition of success. Using their definition of raptor trapping success (RTS), our success increases to 93% (14/15) or 100% (if we include the one male that escaped). Thus, our definition is more conservative than RTS and more comparable to TTS. We feel our definition is appropriate, considering we targeted both sexes at only 5 of 14 territories. Perhaps a more precise method of evaluating trapping success would be to include time spent for each capture (Steenhof et al. 1994).

Bloom (1987) reported two incidents where female goshawks locked talons with bait owls. With other hawk species he suggests that injury to the live owl lure or attacking hawk is rare. In any case, we agree with Schulz (1990) who suggests that we not forget our moral and ethical responsibility, which includes respect, sensitivity, and compassion for the animal being manipulated. Because our trapping success equals or exceeds those reported by Bloom et al. (1992) and considering the ease of maintaining and transporting a mounted owl compared to a live owl, we suggest that a live owl be used only when absolutely necessary.

The mechanical owl built by Jacobs provides a safe and effective alternative to a live owl. Using our method of placing an individual covered with camouflaged netting (and hooting) at the location where the owl is placed, or using taped vocalizations placed near the owl, may further improve the success of the mechanical owl. However, weather conditions, condensation, wet vegetation, and other logistical considerations (i.e., cost, maintenance, and difficulty of construction) may prevent proper functioning or practical use of a mechanized decoy. Our technique is an easy, safe, and effective method for capturing breeding goshawks. This method should be effective for capturing other raptors that aggressively defend their nest, but it has not been evaluated. We recommend this method or Jacob's mechanical owl, in lieu of a live owl, for capturing breeding Northern Goshawks.

RESUMEN.—Buhos (*Bubo virginianus*) vivos, disecados o mecánicos han sido utilizados como señuelos para mejorar la captura de las redes dho-gaza y atrapar aves rapaces. Los buhos vivos han sido los mas efectivos, pero existen ciertos riesgos para el buho como para la rapaz Los buhos disecados son menos efectivos debido a la falta de monvimiento y vocalizaciones. Los buhos mecánicos son efectivos pero carecen de vocalizaciones, no funcionan adecuadamente bajo ciertas condiciones de campo y son difíciles de construir y mantener. En este artículo, describimos una técnica simple y segura que permite vocalización y movimiento de un buho disecado. Documentamos el éxito de este método para atrapar a *Accipiter gentilis*. Nuestra técnica fue tan exitosa como la de un buho vivo pero sin riesgos y mejor que un simple buho disecado o uno mecánico.

[Traducción de César Márquez]

ACKNOWLEDGMENTS

Funding for this project was provided by the USDA Forest Service, Ashley National Forest. We thank K. Paulin and L. Welch for their support and J. Cook, J. Coop, K. Johnson, S. Lewis, L. Ortiz, D. Roberts, and D. Sedlachek for their field assistance. The manuscript benefitted from reviews by P.H. Bloom, F. Chavez-Ramirez, S. DeStefano, and J.E. Thompson.

LITERATURE CITED

BLOOM, P.H. 1987. Capturing and handling raptors. Pages 99–123 *in* B.G. Pendleton, B.A. Millsap, K.W. Cline and D.A. Bird [EDS.], Raptor management techniques manual. Natl. Wildl. Fed., Washington, DC U.S.A.

———, J.L. HENCKEL, E.H. HENCKEL, J.K. SCHMUTZ, B. WOODBRIDGE, J.R. BRYAN, R.L. ANDERSON, P.J. DETRICH, T.L. MAECHTLE, J.O. MCKINLEY, M.D. MCCRARY, K. TITUS AND P.F. SCHEMPF. 1992. The dho-gaza with Great Horned Owl Lure: an analysis of its effectiveness in capturing raptors. *J. Raptor Res.* 26:167–178

CLARK, W.S. 1981. A modified dho-gaza trap for use at a raptor banding station. *J. Wildl. Manage.* 45:1043–1044.

GARD, N.W., D.M. BIRD, R. DENSMORE AND M. HAMEL 1989. Responses of breeding American Kestrels to live and mounted Great Horned Owls. *J. Raptor Res.* 23. 99–102.

JACOBS, E.A. 1996. A mechanical owl as a trapping lure for raptors. *J. Raptor Res.* 30:31–32.

PALMER, R.S. 1988. Handbook of North American birds. Vol. 4. Diurnal raptors (Part 1). Yale Univ. Press, New Haven, CT U.S.A.

SCHULZ, T.A. 1990. Raptor restraint, handling and transport methods. Pages 97–115 *in* D.R. Ludwig [ED], Wildlife rehabilitation 8.

STEENHOF, K., G.P. CARPENTER AND J.C. BEDNARZ. 1994. Use of mist nets and a live Great Horned Owl to capture breeding American Kestrels. *J. Raptor Res.* 28. 194–196.

Received 1 July 1998; accepted 4 February 1999