

A NEW METHOD OF CAPTURING BUTEONINE HAWKS

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Trapping raptors from roads (Watson 1985, Bloom 1987: 103) has been accomplished commonly by using bal-chatri traps (Berger and Mueller 1959), harnessed pigeons (Webster 1976:155), portable phai (Bloom 1987:115), and carrion wrapped with noose carpets (Watson 1985). Although popular, road-trapping by these methods presents several disadvantages: (1) raptors are often wary of "gift-wrapped" food (Bloom 1987:103); (2) harnesses, cages, and monofilament nooses remain visible to target raptors; (3) construction and maintenance of noose traps is time consuming; (4) hawks striking noose traps often do not become entangled (Watson 1985).

To date, trapping raptors with steel leg-hold traps has been aimed almost exclusively at capturing bald (*Haliaeetus leucocephalus*; Harmata 1984) and golden eagles (*Aquila chrysaetos*; Bloom 1987), but leg-hold traps have also been used to capture buteonine hawks (Imler 1937). Herein, we detail our use of leg-hold traps for capturing ferruginous (*Buteo regalis*), red-tailed (*B. jamaicensis*), and Swainson's hawks (*B. swainsoni*) from roads.

METHODS

Use of live bait and padded and weakened leg-hold traps was approved by the University of Minnesota Animal Care Committee prior to initiating this work. Size 3 and

3N double-spring leg-hold traps with offset jaws were used (Oneida Victor Animal Trap Co., Lititz, PA U.S.A.). Traps were greatly weakened by repeatedly striking each spring near the bend with a hammer (Bloom 1987:114), taking care not to misshape springs. Alternately, traps were used that had springs too weak for use as described by Harmata (1984:15) and Bloom (1987:114). Once weakened, traps closed with greatly reduced force and slightly reduced speed. Jaws were first padded with 5-mm-thick adhesive-backed foam rubber, and then wrapped with cloth friction tape. Traps properly weakened and padded still closed quickly, but were capable of being sprung repeatedly on a single human finger without inducing injury or pain. Traps were thoroughly tested in this manner prior to use. The "V" cutout in the trap pan was filled with epoxy for better concealment, and the pan, jaws, and springs were spray-painted either white or brown for use in snow or soil, respectively. No additional weights were used when trapping Swainson's hawks, but a lead weight or short length of chain weighing about 0.3 kg was attached to the trap when used for red-tailed and ferruginous hawks. A wire loop tightened diagonally around the trap base served as a point of attachment for the bait harness (Fig. 1 top).

Deer mice (*Peromyscus* spp.) and domestic laboratory mice (*Mus musculus*) were used as bait. A harness to hold the bait mouse onto the trap pan (Fig. 1 middle) was made as follows: a 24-ga. steel wire was formed into a loop, onto which were threaded the cylindrical portion sawn from a pop-rivet and a leader for attachment to the base of the leg-hold trap. The loop was placed over the head and behind the ears of the mouse, and tightened just enough to prevent escape by the mouse. The cylindrical portion

of the pop-rivet was then flattened using pliers, and the ends of the collar were clipped off. The leader of the harness was passed through a 2-mm hole drilled through the center of the pan, and anchored to the wire around the trap base, providing enough excess for some movement by the mouse. Anchoring the harness to the base of the trap instead of to the pan helped minimize missing birds that attempted to take the bait while in flight, lifting the mouse clear of the closing jaws. Attaching the harness to the trap base maintained the mouse at a consistent height beneath the jaws, independent of the position of the pan.

As with *bal-chatris*, the trap was placed on the ground from the side of the vehicle opposite the perched hawk to minimize suspicion (Watson 1985). A trap bed was dug for soil sets, but was not needed in snow. Springs were rotated toward the trigger side of the trap, to permit the jaws to lie as flat as possible. Traps were arranged with the springs perpendicular to the hawk's anticipated line of travel, so that the jaws would close on the sides of the leg of the approaching hawk. This was done to lessen the chance of the jaws pushing the hawk's leg clear during closure. A thin covering of snow or sifted soil was used to camouflage the trap. While unnecessary for snow sets, brown polyester batting was used when making sets in soil to help support concealing soil at the height of the pan (Fig. 3 bottom). Once the trap set was completed, vehicles were driven out of sight of the perched hawk, or to a distant point (0.5–1 km) that offered a view of the perched hawk. Traps were left in place for ca. 20 min.

RESULTS AND DISCUSSION

From November 1992 to February 1994, we trapped six red-tailed, ten ferruginous, and seven Swainson's hawks. This technique was also successfully used to retrap three ferruginous and two Swainson's hawks originally captured by this and other methods. This method was most effective when used to capture nesting adult and recently fledged Swainson's hawks, with seven captures from 11 traps set (64%). No nontarget species were captured.

As in the case with *bal-chatris*, hawks would often approach the trap several times, but not take the bait when the mouse failed to run. However, they often returned or alighted nearby and walked into the trap. Bait mice were either killed by the hawk, or were untouched by the trapped hawk and reused or released. No injuries of any kind were observed on any of the hawks captured by this method.

One disadvantage in our method not inherent in several other forms of road-trapping is that vehicles must be stopped, and often exited, when setting this trap. However, this method offers the advantages of having no components visible to the target raptor, rapid initial construction and set up time, and virtually no maintenance. The importance of properly weakening trap springs, adequately padding trap jaws, and testing the force exerted by the closing trap before use on hawks cannot be overemphasized. This trap is not suitable for species smaller than those mentioned.

RESUMEN.—Una trampa de acero atrapa-patas con un ratón vivo como cebo fue usado para atrapar vivos a individuos de *Buteo jamaicensis*, *Buteo regalis* y *Buteo swainsoni*. La activación de la trampa fue debilitada y sus dientes

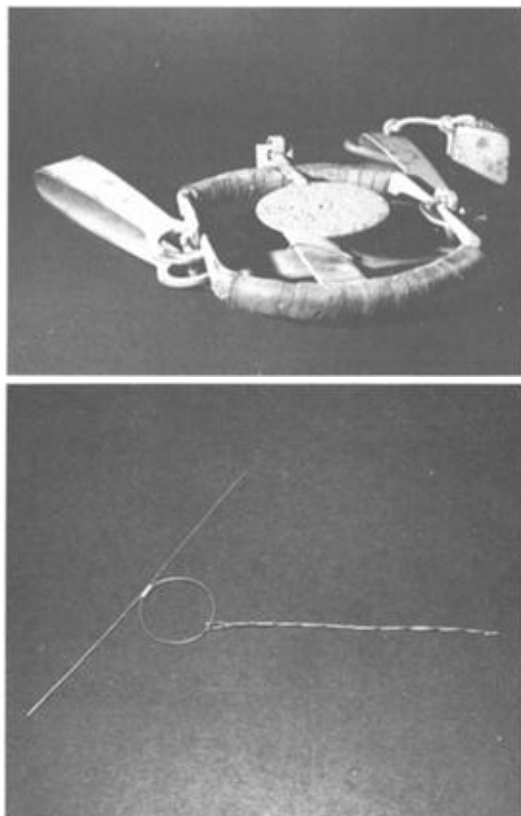


Figure 1. Top: Modified leg-hold trap showing jaw padding and anchor wire around base. Middle: Harness for securing the bait mouse. Bottom: Bait mouse harnessed to the trap and polyester batting.

fueron forrados para evitar dañar a los aguiluchos. El mayor éxito fue obtenido con *B. swainsoni*, logrando un 64% de los intentos de captura ($N = 11$).

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