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AUTOMATIC TRAP FOR WATERFOWL USING NEST BOXES

MICHAEL C. ZICUS

Minnesota Department of Natural Resources
Wetland Wildlife Populations and Research Group
102 23rd Street
Bemidji, Minnesota 56601 USA

Abstract.—An easily installed, automatic, inconspicuous, and effective trap for capturing cavity nesting waterfowl in wooden nest boxes was developed. The trap was installed inside the box and consisted of a sliding wooden door spring-loaded with rubber bands, a door-track and stop made from nails, a wire trigger, and a length of twine to trip the trigger. During 676 trap-days, 160 animals including 154 waterfowl were caught and retained in 179 instances in which the trap was sprung. No known trap-related injuries occurred.

TRAMPA AUTOMÁTICA PARA LA CAPTURA DE PATOS QUE ANIDAN EN CAJAS

Resumen.—Se desarrolla una trampa automática, insconspicua y fácil de instalar para la captura de patos que anidan en cajas. La trampa consiste de una puerta deslizante (la cual halan unas bandas de goma) que queda fijada en posición abierta con un gancho de alambre que se safa y permite que la puerta tape el orificio de entrada cuando el pato se posa sobre un pedazo de cuerda. Durante 676 días de atrapar aves se capturaron 154 patos de 179 veces en que se activaron las trampas. Ningún ave resultó herida como consecuencia de su captura.

Numerous types of traps have been devised to capture cavity nesting birds in nest boxes. Some operate automatically (DeHaven and Guarino 1969, Stewart 1971, Stutchbury and Robertson 1986), whereas others are remotely controlled (Dhondt and Van Outryve 1971, Lombardo and Kemly 1983). Although each appears to have functioned well for the intended application, all were inadequate to capture Common Goldeneyes (*Bucephala clangula*) in wooden nest boxes for my study. Other published designs have no means of preventing waterfowl from pushing doors aside or open and escaping. I needed an automatic trap, that was easily installed, inconspicuous to potential vandals or curious passersby, and one that would retain large waterfowl exploring boxes for potential nest sites.

The trap I devised was installed inside the box and consisted of a sliding wooden door spring-loaded with rubber bands, a door-track and a stop made from nails, a wire trigger fashioned from a piece of 2 mm diameter weldwire fencing, 2 screw-in hooks, and a length of twine. The hardware, consisting of 5 nails and the screw-in hooks, was installed in the box first. Two nails were partially driven into the top edge of the box front about 12 cm apart (Fig. 1A, #1). Next, a door track was formed by 2 nails driven into the inside front of the box approximately 4 cm below the entrance and then bent at right angles (Fig. 1A, #2). These nails were spaced about 12 cm apart. The first screw-in hook was placed about 30 cm below the entrance hole and the second was centered in the back of the box about 15 cm higher than the first one. Lastly, a nail above the entrance hole served as a stop for the activated door. Traps could usually

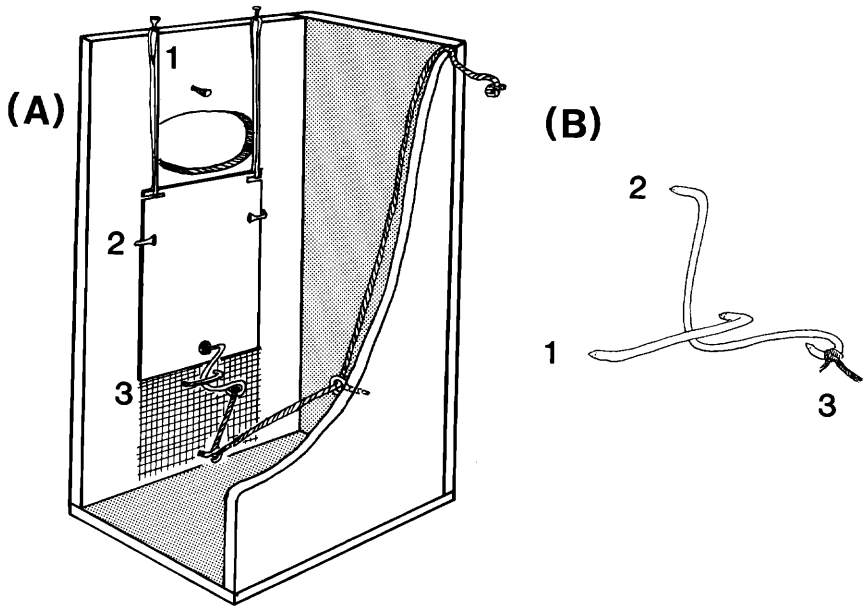

FIGURE 1. (A) Trap set in cut-away nest box with rubber bands attaching door to nails at top of box (1), nails bent forming door-track (2), and trigger in the set position (3). (B) Close-up of trigger showing legs (1), hook (2), and loop (3).

be installed in the field in about 10 min. Less time was needed if traps were fitted before boxes were erected. Rubber bands were attached to two slits cut into the top of the door. The door was approximately 220 × 110 × 3 mm and had a 5 mm trigger hole drilled in the bottom. Natural rubber bands maintained their elasticity better than synthetic rubber bands.

Once in place, traps could be set in less than one minute. To set the trap, the rubber bands attached to the door were placed over the nails on the top front edge of the box. The top hook of the trigger (Fig. 1B, #2) held the door by the trigger hole and was used to draw the door down through the door-track thus stretching the rubber bands. The upward pull of the rubber bands was offset by hooking the 2 trigger "legs" (Fig. 1B, #1) into the wire mesh often placed below the entrance hole in waterfowl nest boxes (Fig. 1A, #3). The twine tied to the trigger loop (Fig. 1B, #3) was run through the screw-in hook located inside the box front, across the box cavity, and through the other hook on the back of the box. The twine continued up to a rear corner at the top of the box where it was anchored, usually by wedging it in the joint between the boards. The trap was sprung when a duck entering the box hit the string thus pulling the trigger hook from the trigger hole and allowing the rubber bands to pull the door up against the stop. The trigger and twine fell loosely into the bottom of the box. The trap was effective once it was

sprung because the door-track and stop secured the door in the closed position.

Traps were checked between 0900 and 1200 and between 1800 and 2100. Traps caught and retained animals on 160 of 179 occasions they were sprung during 676 trap-days. A total of 154 waterfowl were caught. In addition to goldeneyes, Wood Ducks (*Aix sponsa*), Hooded Mergansers (*Lophodytes cucullatus*), European Starlings (*Sturnus vulgaris*), Northern Flickers (*Colaptes auratus*), and Gray Squirrels (*Sciurus carolinensis*) were caught. No known injuries resulted from capture. Waterfowl escaped on eight occasions when they freed the doors from the tracks, presumably by pushing at the doors with their bills. Most failures occurred when doors that varied slightly in size were moved from box to box and the nails forming the original tracks were not repositioned. I believe these failures could have been reduced if more attention had been paid to door/track tolerances. Eleven other failures occurred when doors either jammed or closed accidentally. Although we used the trap to catch ducks before and after the nesting season, the trap could be used to capture specific individuals while nesting if the box did not contain too much nesting material and if checking was frequent enough to minimize abandonment. The trap's inconspicuousness was an advantage where vandalism was a possibility and the automatic operation reduced labor needs.

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