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A TRAP FOR DUCKS USING ARTIFICIAL NESTING STRUCTURES

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Abstract.—I designed a trap to catch incubating hens that use artificial nesting structures. Thirty-four incubating Mallards and nine incubating Redheads were trapped successfully during the summers of 1993–1995. Success rate was 95% with no injury to females. I experienced no post-trap nest abandonment, however, trap attempts resulted in 2% nest abandonment prior to successfully trapping the hen.

TRAMPA PARA ATRAPAR PATOS UTILIZANDO ESTRUCTURAS ARTIFICIALES PARA ANIDAR

Sinopsis.—Se diseñó una trampa para capturar, durante el periodo de incubación, a hembras de patos que utilizaron para anidar estructuras artificiales. Nueve individuos de *Aythya americana* y 34 de *Anas platyrhynchos*) fueron atrapadas, mientras incubaban, durante los veranos de 1993–1995. El éxito de captura fue de 95% y no les causó daño a ninguna de las hembras. No hubo abandono de los nidos postcaptura. Sin embargo, una hembra (2%) abandonó el nido durante el periodo de colocación de las trampas, previo a que fuera capturada.

Artificial nesting structures are used by waterfowl managers to provide additional nesting habitat and to increase waterfowl production by increasing nest success. Several monitoring programs across Canada and the United States have documented use patterns and nest success of female Mallards (*Anas platyrhynchos*) nesting in artificial nesting structures (Bishop and Barratt 1970, Doty 1979, Sidle and Arnold 1982). Cylindrical nesting structures, such as the Henhouse™ developed by Delta Waterfowl Research station, have been successful in attracting nesting Mallards and improving nest success. On a 6.4-km^2 site in Minnedosa, Manitoba (50°15′N, 99°50′W), Mallard use of the Henhouse™ increased from 36% in 1993, the first year structures were present, to 57% and 51% in 1994 and 1995. Nest success varied from 73–80% (T. Yerkes, unpubl. data). These studies rarely incorporate other aspects of the reproductive biology so trapping females in artificial nesting structures is not common (but see Doty and Lee 1974).

During the summers of 1993–1995, I trapped incubating female Mallards and Redheads (*Aythya american*) nesting in artificial structures as a part of two independent studies. To do this, I developed a trap for use on cylindrical artificial nesting structures.

The trap is portable, inexpensive, and easy to use. There are three components to this system: two 45 cm × 45 cm trap doors constructed from 2.5 cm × 2.5 cm, 14-gauge wire fencing, two pieces of 9–18-m nylon rope as the trigger, and three 7.5-cm swivel hooks. The length of the rope

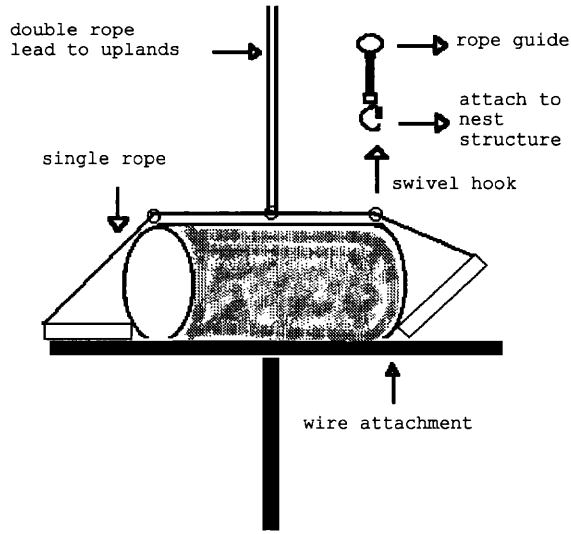

FIGURE 1. Trap for cylindrical nesting structures.

depends upon the distance of the structure from upland cover. The swivel hooks anchor the nylon rope to the structure, serve as guides for the rope trigger, and simplify set up and removal of the trap. Additionally, at least four pieces of 7.5-cm, 16-gauge wire are required to attach the trap doors to the nesting structure. In 1995, the construction of one trap cost between U.S. $12–20.

I assembled and set-up the trap as follows. Both pieces of rope were fed through the closed end of one swivel hook and then each rope was individually fed through another swivel hook. I tied the lead end of each single piece of rope to the top, center of each trap door and anchored the double lead swivel hook to the top, center of the structure with the clip end. I then anchored each single lead swivel hook to the top, at the opened ends of the structure. The trap doors were anchored at the bottom of the entrance of the structure with the 7.5-cm wire (Fig. 1). It required approximately 5 min to set the trap and test the triggering mechanism. It was essential that the trap doors fit tightly over the structure openings when the trap was triggered, otherwise the hen would escape.

Once the trap doors were attached to the structure, the double lead ropes were fed to the upland cover perpendicular to the artificial nesting structure, anchored in the upland vegetation, and marked for easy relocation. To spring the trap, I approached the marked trigger perpendicular to the structure and quickly and firmly pulled the double leads simultaneously. Simultaneous triggering was aided by attaching both leads to a single piece of lathe. Once triggered, I maintained pressure on the leads to prevent the hen from escaping while one or two other individuals waded into the wetland to remove the hen from the trap.

I generally set traps one day and triggered them the next. To minimize stress to the hen, cylindrical structures can be remotely monitored and the trap can be set while the female is on an incubation recess. In 6 of 43 cases, when hens were flushed from the nest prior to setting the trap, the trap was left in place for 2–3 d before triggering.

I successfully trapped 34 incubating Mallards in 1993 and 1994, and nine incubating Redheads in 1995. Once the trap was perfected, trap success rate was 95%. No hens were injured during trapping. I experienced no post-trap abandonment. However, one Mallard abandoned her nest in 1993 after the trap was set, accounting for a 2% pre-trap nest abandonment rate.

In the process of developing this trap, two other models were tested. One device was spring loaded and triggered when the hen walked across a treadle door. The trap door in this device projected above the top of the structure and closed down on the opening of the structure. A second device, also triggered by the hen walking across a treadle door, projected above the top of the basket and slide-down leads to cover the structure opening. In both devices, the opposite end of the trap was sealed. Both were unsuccessful. Hens escaped frequently and many abandoned their nests prior to being trapped.

The trap described in this paper, given its inexpensive construction and high success rate, may be useful in studying populations of waterfowl nesting in artificial nesting structures. Additionally, the device can be easily modified to structures of varying sizes by altering the dimensions of the trap doors.

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