

A Method for Trapping Prairie Grouse Hens on Display Grounds^{1,2}

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Abstract: This paper describes a method for trapping prairie grouse hens on display grounds. The basic principle of the trap is a drift fence which funnels visiting hens into traps. The trap has been used successfully in at least 6 states and 2 provinces and on 4 species of prairie grouse. This method is less expensive and less disruptive than rocket or cannon nets.

INTRODUCTION

One of the most difficult and time consuming aspects of studying prairie grouse is capturing hens for marking and radio-tagging. Rocket and cannon nets placed on the display grounds have been used but they are cumbersome, and if used too often may disrupt normal breeding activities. This paper details a simple, inexpensive method for trapping hens on display grounds and if used properly creates only a minor disturbance to the displaying cocks.

The basic principle of this trap is that of a drift fence placed on the display ground. It's basic concept is not new since similar traps have been used to capture a wide variety of birds (Wilbur 1967 and McClure 1984). The "cloverleaf" trap (Dorney and Mattison 1956) used the same principle to capture ruffed grouse hens and their broods. Mussehl (1960) and Tomlinson (1963) used drift fences and funnel traps to capture blue grouse on the breeding grounds.

METHODS

This trapping system consists of a series of traps and wire leads placed to intercept hens as they walk across the display grounds. Two systems of deploying the leads were used: (1) a circle and (2) a "W" (Figs. 1 and 2). The circle was initially developed by John Monarch and associates to capture Columbian sharp-tail hens (Tympanuchus

phasianellus columbianus). The circle system consisted of a series of 5 chicken wire leads and traps placed around the dominant cock, thereby intercepting and trapping hens as they visited the display ground for breeding (Fig. 1). One or more of the traps in this system should have a funnel opening facing the center to capture hens as they leave because some hens will jump the wire to get near the dominant cock. Placement of the leads is critical in the circle system because if it does not encircle the dominant cock, hens will walk by or around the leads.

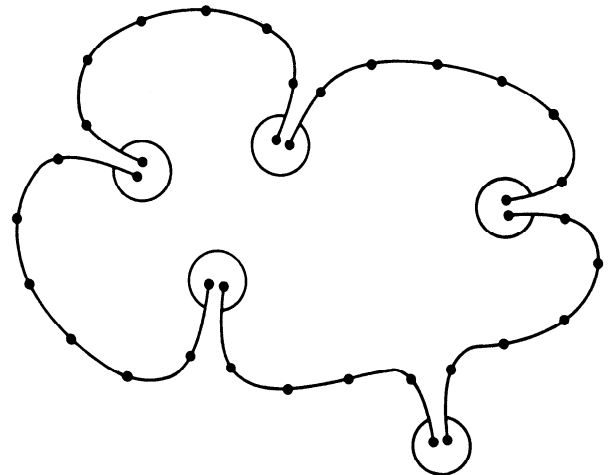


Figure 1. --Circle system of deploying traps and wire leads to capture sharp-tail hens.

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Greater prairie chicken (Tympanuchus cupido pinnatus) cocks on booming grounds are more widely spaced than sharp-tails. Consequently the circle method does not cover enough of the booming ground to intercept hens. The circle system, also requires knowing the location of the dominant cock, which will limit trapping early in the

booming season. In order to cover more of the booming ground and trap earlier in the season Toepfer and Newell developed the "W" method of deployment (Fig. 2).

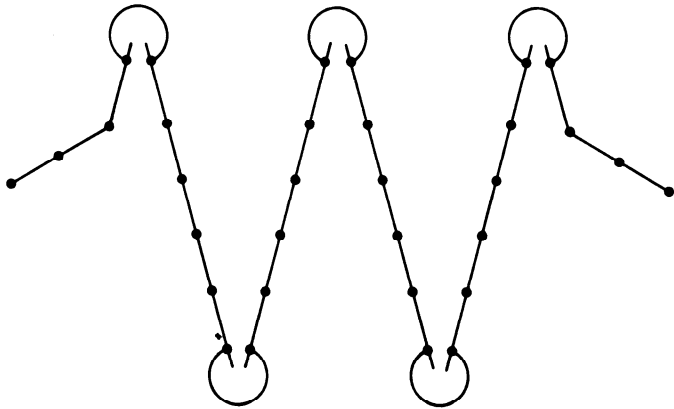


Figure 2.--"W" system of deploying traps and wire leads to capture prairie grouse hens.

The "W" consisted of 5 or more chicken wire leads oriented perpendicular to the path of visiting hens with funnel traps at the ends (Fig. 3). Trapping success was enhanced when the general movement patterns of hens were observed before placing the trap. Movement of hens varied between booming ground and often changed from day to day necessitating some adjustments in the positioning of the leads. Frequently the best location for the "W" was across the center of the display ground. The advantages of the "W" are that it covers more of the display ground and it can be effective when placed across the center of the display ground prior to observing the movement of hens.

Wire leads and traps were the same for both methods of deployment, and consisted of 18-24 inch, 1 inch mesh chicken wire. The number and length of the leads in the "W" system varied with the size of the booming ground. Five leads, 50-75 feet long, were usually used. The chicken wire leads were supported with metal or wooden stakes, although metal rods woven through the wire were the best. Early in the season a hammer was necessary to pound stakes into the frozen ground and a vice grips pliers was necessary to remove the stakes. Rigid chicken wire (1 inch mesh, 16-18 gauge) was used for leads so the cocks did not bend them over when using them for perches.

Catch traps were made of separate 8-10 foot long by 2 feet wide lengths of 2 x 2 inch or smaller mesh welded wire turned into a horseshoe-shaped coil with the two ends forming an entrance approximately 6 inches wide (Fig. 3). Larger traps can be used, but removing trapped birds becomes more difficult. Wire leads were fastened to the trap entrances so the leads went partway

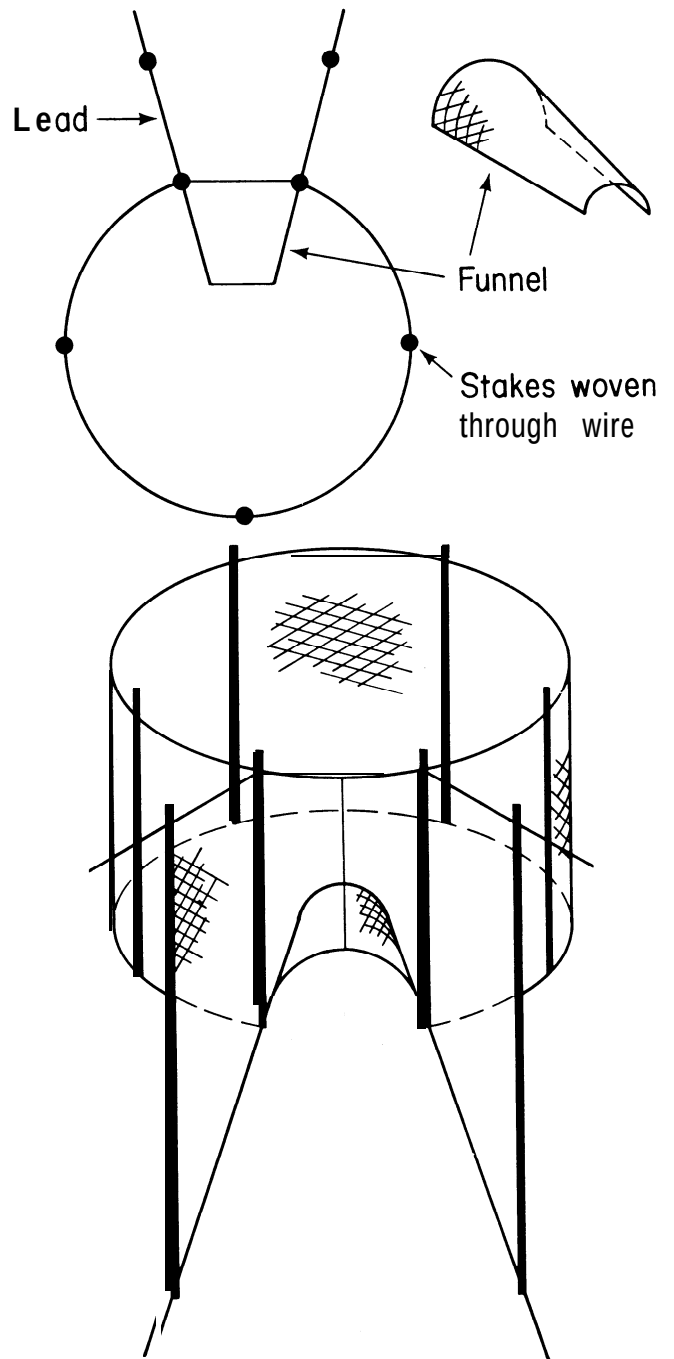


Figure 3.--Traps, wire leads and funnel.

into the trap (Fig. 3). The leads were held in place by two 2-3 ft. rods woven through the end of the chicken wire leads and sides of the entrance to form a "V" into the trap.

The trap was secured at ground level with 2-3 metal stakes pounded into the ground. Metal or plastic tent stakes worked to secure the traps, but are expensive. The top of the trap was covered with soft fish netting which overlapped

the sides. The netting was held in place with open hog rings used as hooks to hold the netting down along the sides of the trap. The mesh of the netting should be small enough so the bird cannot get their wings or head through it. The tops should not be covered with wire as the birds will scrape their heads and wings when trying to escape.

A funnel at the entrance into the trap is essential to prevent trapped birds from finding their way out (Fig. 3). Funnels were made of chicken wire and extended approximately 8 inches into the trap. The opening into the funnel should be 6-8 inches high and drop down to 4 inches.

Hens were captured in both baited and unbaited traps. Some hens were attracted to the bait while others showed no interest. The use of bait can create problems as it will attract cocks to the traps.

Traps set on the booming ground for the first time will capture some cocks. The number of cocks captured can be reduced by leaving the traps closed for at least a day while the cocks learn to avoid the closed entrances. However, some cocks will still be captured usually when they move onto the grounds in the early morning. Cocks should be removed from the traps as soon as possible because their behavior will discourage hens from entering a trap. Hens will go into traps with other hens, but will hesitate to enter a trap with a cock present. We have left cocks and hens in traps up to 45 minutes with no problems. However, if 2 cocks or a hen and a cock became caught in the same trap they should be removed immediately to avoid injury.

To avoid injury and prevent birds from being captured inadvertently the traps should not be left unattended or opened before the cocks go to roost at night. It is best to open the traps in the morning before the cocks begin to display or at least 1 hour after the cocks have gone to roost.

Walk-in traps have been set on the same booming ground from 1 April-10 May. Cocks appeared to adjust to the wire leads and traps usually within a day. For morning trapping it was best to set the trap the day before and let the cocks adjust to the traps and leads during the evening display period. Some cocks that were captured several times were known to shift their territories away from traps and leads. All cocks were banded and none were known to abandon the booming ground.

During the 1983 and 1984 breeding seasons we trapped 46 prairie grouse hens in 60 days using the "W" walk-in traps on 4 booming grounds in North Dakota. The earliest a hen was captured was on 2 April and the latest on 3 May. Most hens (70%) were captured from 17-25 April. In addition to walk-in traps 3 hens were captured with rocket nets and 4 with bownets in 1983.

A comparison of the 3 trapping methods showed that the walk-in traps were approximately 3 times more efficient (0.29 hens/hour) than the rocket nets (0.10 hens/hour) and 6 times more efficient than bownets baited with corn (0.05 hens/hour). The walk-in trap also captured a higher percentage of the hens present on the booming ground than rocket nets (16.7% vs 4.7%). In an earlier study in Minnesota in 1977, it took 4 men, 122 hours to capture 20 hens on booming grounds using rocket nets (0.16 hens/hour and 14.2% of the hens) (Toepfer unpubl. data).

Only 1 of 65 birds captured in walk-in traps died. This mortality was due to 2 cocks getting in the same trap and being harassed by a redtail hawk (Buteo jamaicensis) before the observer could get to the trap. One of these 2 birds suffered a broken wing in the encounter and was collected. By contrast the mortality rate for rocket nets was 3%.

The traps without leads were also used to capture individual prairie chicken cocks by placing a trap baited with corn in a cock's territory. The "W" system with traps baited with corn was also used to trap cocks and hens in winter feeding areas. However, because of the behavior of birds once inside the traps usually only 1, or at most 2 birds were captured at a time. The traps with leads should be effective on the display ground during fall and in intercepting and capturing a few birds in fall feeding areas when food is not limited. Ligon (1946) also felt that wire leads could be used to intercept and trap prairie chickens as they moved to and from feeding areas.

The "W" system has also been used to capture lesser prairie chickens (Tympanuchus pallidicinctus) and sage grouse (Centrocercus urophasianus) hens. No cost figures are available, but several walk-in traps can be purchased for the price of a single rocket net setup.

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