



2008

## USE OF CLAP TRAPS IN CAPTURING NONMIGRATORY WHOOPING CRANES IN FLORIDA

Jeannette M. Parker  
Martin J. Folk  
Stephen B. Baynes  
Kristen L. Candelora

---

Parker, J. M., M. J. Folk, S. B. Baynes, and K. L. Candelora. 2008. Use of clap traps in capturing nonmigratory whooping cranes in Florida. *Proceedings of the North American Crane Workshop* 10:141-145.

---

*The North American Crane Working Group provides free and open access to articles in Proceedings of the North American Crane Workshop. No additional permission is required for unrestricted use, distribution, or reproduction in any medium, provided that the original work here is properly cited. Visit <http://www.nacwg.org> to download [individual articles](#) or to download or purchase [complete Proceedings](#).*

# USE OF CLAP TRAPS IN CAPTURING NONMIGRATORY WHOOPING CRANES IN FLORIDA

JEANNETTE M. PARKER<sup>1</sup>, Florida Fish and Wildlife Conservation Commission, 600 Ohio Avenue, St. Cloud, FL 34769, USA

MARTIN J. FOLK, Florida Fish and Wildlife Conservation Commission, 1475 Regal Court, Kissimmee, FL 34744, USA

STEPHEN B. BAYNES, Florida Fish and Wildlife Conservation Commission, 2250 W. Martin Street, Kissimmee, FL 34741, USA

KRISTEN L. CANDELORA<sup>2</sup>, Florida Fish and Wildlife Cooperative Research Unit, Box 110485, Building 810, University of Florida, Gainesville, FL 32611, USA

**Abstract:** Between March 2001 and April 2005 we captured 28 nonmigratory Florida whooping cranes (*Grus americana*) with clap traps. Out of the 6 different capture methods we employed, the clap trap accounted for 42% of our birds captured. Its ability to safely capture one crane or multiple cranes simultaneously, flexibility in size and placement, and low cost make it an important tool to facilitate transmitter replacements and health checks among the experimental Florida whooping crane population.

**PROCEEDINGS OF THE NORTH AMERICAN CRANE WORKSHOP 10:141-145**

**Key words:** capture, clap trap, Florida, *Grus americana*, whooping crane.

Whooping cranes have been released into Florida annually since February 1993 in an effort to establish a nonmigratory flock of whooping cranes in the state (Nesbitt et al. 1997). Because this project entails extensive long-term monitoring and because whooping cranes can be highly mobile, it is necessary to regularly capture birds within the population for routine transmitter replacements and health checks. A variety of capture techniques (the trough blind, hoop net, multiple snares, simple snare, drop-door walk in trap, drop net, net gun, night-lighting, and clap trap) have been used during the course of the project, with varying success. Each of these methods is best suited for a certain set of conditions, and none are well suited for all conditions (Folk et al. 2005).

The clap trap was first demonstrated in 1998 to the Mississippi Sandhill Crane National Wildlife Refuge staff by Ali Hussain, a bird trapper from India whose traditional trapping techniques proved to be successful and safe for trapping Mississippi sandhill cranes *G. canadensis pulla* (Hereford et al. 2001). We first used the clap trap in Florida on a whooping crane in 2001 to capture an injured bird that had a spent shot gun hull stuck on its mandible. Since then, it has become a routine capture technique used within the nonmigratory whooping crane population. Herein, we describe the clap trap method and its effectiveness in capturing whooping cranes.

## STUDY AREA

Our study was conducted throughout peninsular Florida, principally from Dunnellon south to Lake Okeechobee. Most areas frequented by whooping cranes consisted of large, privately owned cattle ranches with a wide variety of vegetation types, often dominated by nonnative, sod-forming forage grasses such as Argentine bahia (*Paspalum notatum*). We trapped cranes in Lake, Sumter, Osceola, Polk, Volusia, and

Marion counties. We placed all traps in open areas located within grazing pastures, residential areas, and once in native lakeshore habitat. Specific placement of the clap trap was on low-growing, grassy areas free of woody vegetation.

## METHODS

We chose trapping sites within the target crane's daily activity area and set traps in desirable locations the birds would notice. We used corn to lure birds to the specific area. If vegetation was more than 24 cm high, we mowed it to make placement and performance of the trap more efficient. We removed vegetation that could impede trap performance. As soon as the birds discovered the trap site, we placed a mock clap trap and all blinds to be used during capture at the site. This was always done prior to capture day to acclimate wary birds to new objects or disturbances to the ground. We also placed corn inside the mock clap trap on a regular basis. Once birds developed a predictable feeding routine and became accustomed to eating from inside the mock trap (typically within 1-3 weeks), we attempted a capture.

Normally we set up the clap trap and baited it with corn on the morning of the capture attempt, prior to the bird's arrival. Most often, capture attempts occurred in the early morning when birds were hungriest and temperatures coolest. We camouflaged the trap by dyeing and painting all of its components to reduce detection by target birds. We also made efforts to minimize and hide human presence. An observer, who manually triggered the trap, hid inside a blind (1.2 m x 1.2 m x 1.2 m) built large enough to allow them to comfortably and quietly pull the trap shut. Additional handlers hid inside smaller blinds or vehicles, usually within 9 to 50 m of the trap, close enough that they could reach the trap quickly to prevent injury or escape of the bird. The observer made sure that no birds were standing on trap components when the trap was triggered. When the target bird was in the appropriate position (Fig. 1) with its head down and feeding, the observer would trigger the trap.

1 Present address: 5840 Forrests Edge Lane, Gloucester, Va 23061, USA

2 Present address: UF/IFAS Extension, Arcadia, FL 34266, USA

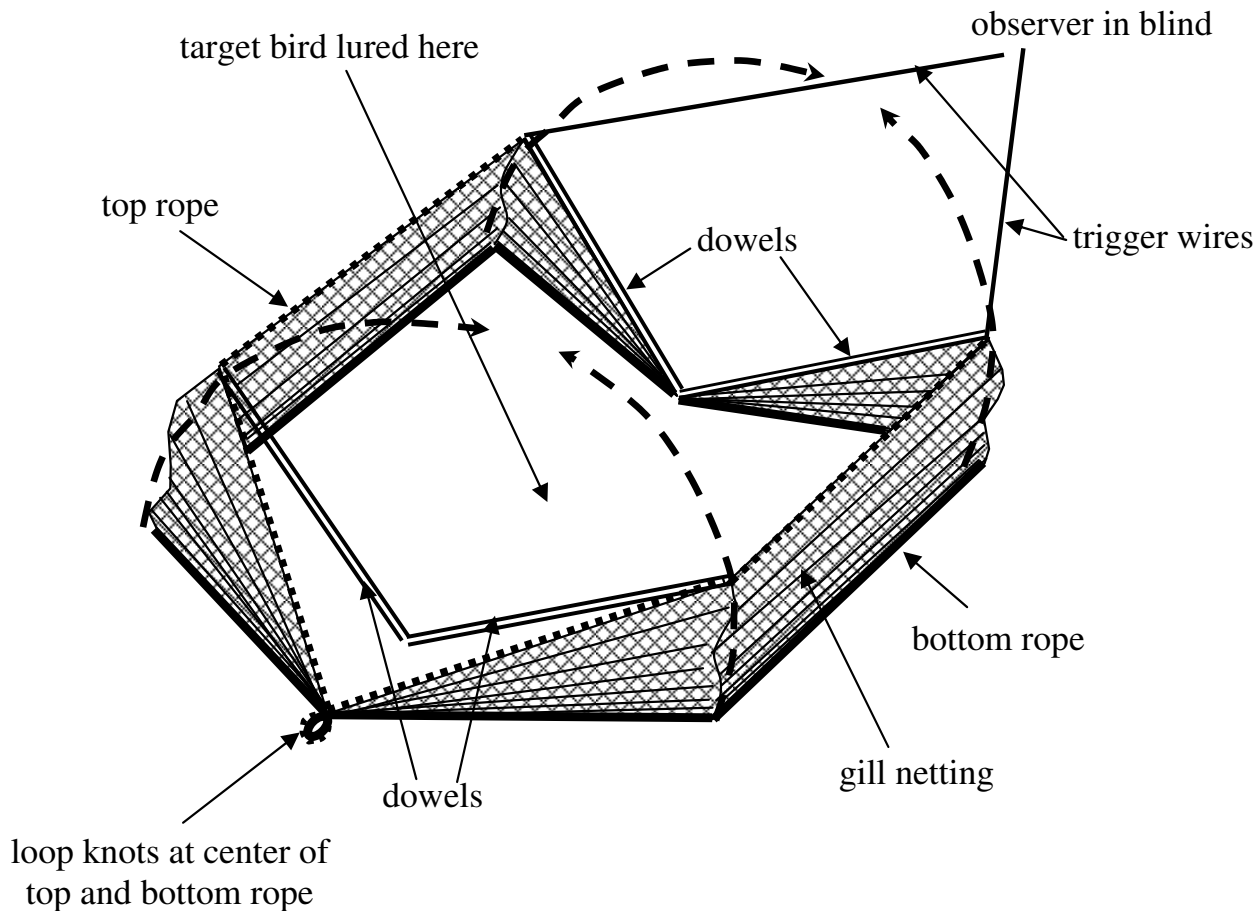


Figure 1. Drawing of clap trap closing.

We modified each clap trap that we made to meet specific needs and varied each slightly in its proportions and components. The number of cranes (1-3) to be captured determined the trap's dimensions, with larger traps being made to target more than one crane.

A clap trap for 1-3 cranes consisted of 22.9 m x 1.2 m of multifilament nylon gill netting with a mesh size of 89 mm and a string diameter of 0.55 mm (Memphis Net & Twine Co., Inc.). We threaded 2 15.2-m x 5-mm braided nylon ropes, one on each side, lengthwise through the gill netting along its edge. About 30 cm from each free end of the 2 ropes, we tied the rope in a half hitch knot around the end of the gill netting to prevent the netting from slipping off of the ropes. We then arbitrarily designated one of the ropes the top rope and the second as the bottom rope (Fig. 1). We laid the two ropes with the netting attached, touching lengthwise and parallel to each other and folded them both at their center points, always keeping the top rope lying above the bottom rope. Where the ropes and net were folded at the midpoint, we tied a small loop knot in each rope and anchored them together to the ground with a 30.5-cm stake. We did this part of the assembly prior

to capture day, and it usually took one person approximately 1-2 hours to complete.

We laid 4 wood dowels, each 1.2 m long and with a 1.3 cm diameter, within the ropes (Fig. 2). One end of each dowel was anchored into the ground with a 22.9-cm stake (Fig. 2). The dowel and stake were attached to each other by a small secure string about 5.1 cm long, allowing the dowels to pivot while remaining secured to the stake. The free end of each dowel was tied to the top rope (Fig. 2). The entire bottom rope was then anchored to the ground using 22.9-cm stakes spaced every 60 cm. We took care not to accidentally stake any gill netting or the top rope to the ground, which would prevent the trap from opening. Two experienced people could do this part of the assembly between 1 and 2 hours. Often we would do this step the evening before a capture attempt, to save time on the capture morning. If this step was done prior to capture day we would stake all netting to the ground so birds would not inadvertently tangle themselves while we were not present. On capture day the stakes securing the netting would be removed.

We tied 2 trigger wires to the free ends of the top rope,

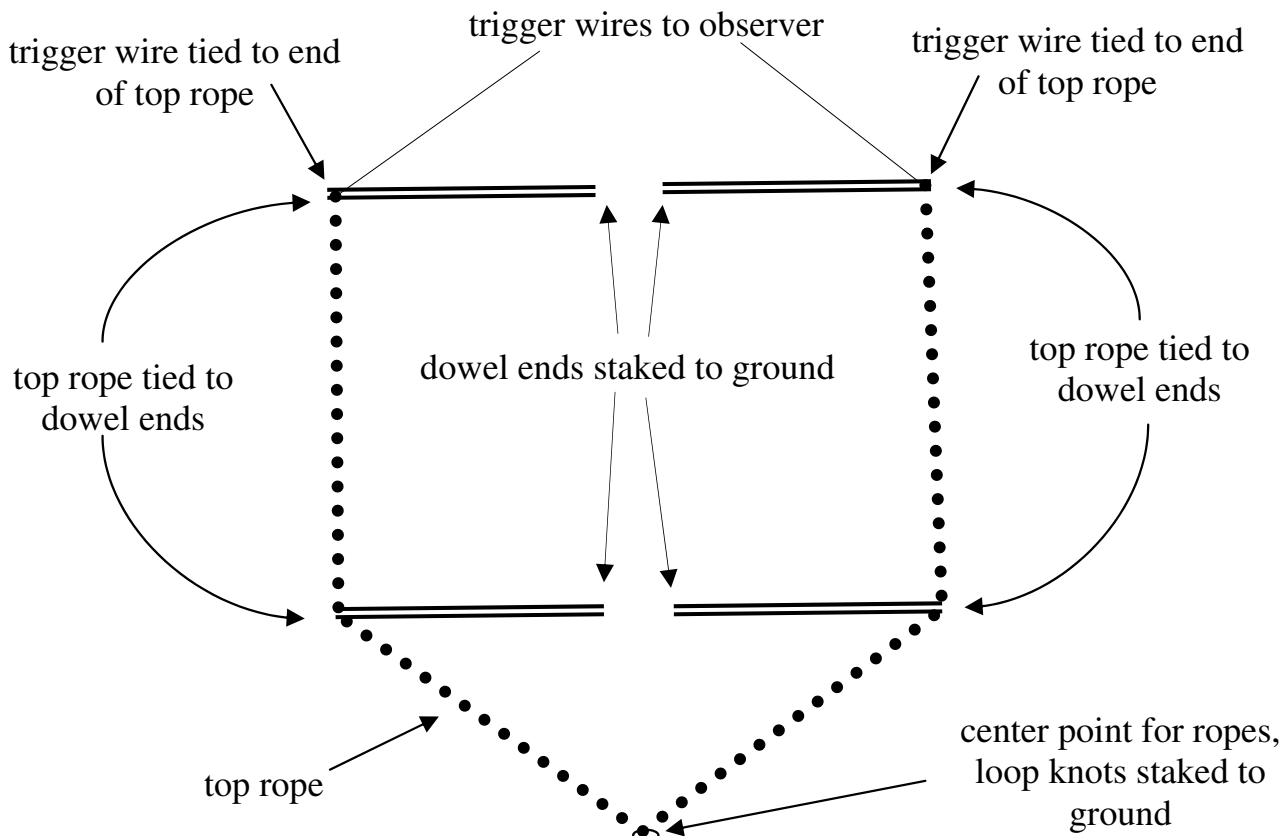


Figure 2. Aerial-view drawing of clap trap before being triggered. The bottom rope and gill netting are lying beneath the top rope.

1 on each end (Fig. 2). A vinyl-coated wire clothesline was used for the trigger wire because it did not sag and stayed taut when pulled. The trigger wires ran from each end of the top rope directly into a blind that was placed approximately 4 m from the trap, at the opposite end of the trap from the anchored loop knots. The trap was then manually pulled closed by the observer inside the blind.

When the observer pulled the trigger wires simultaneously, each dowel pivoted up rapidly, 90 degrees from the ground, carrying the attached top rope and net with it (Fig. 1). The bottom rope remained securely staked to the ground, creating a tent-like enclosure around the target bird (Fig. 3). The observer held the trigger wires taut, keeping the top of the trap closed tightly, until handlers arrived and gained control of the captured bird.

No fewer than 3 people were present for each capture attempt. When a single bird was caught, the observer in the blind held the trigger wires taut while a second handler gained control of the bird and a third person untangled and freed the bird. If a bird was too entangled to be quickly removed from the netting, we would cut the netting with scissors to reduce handling time. When 2 or more cranes were caught simultaneously, 2 handlers were required for each crane.



Figure 3. Demonstration of the clap trap's tent-like enclosure after it has been triggered.



Table 1. Capture techniques used and number of whooping cranes caught between March 2001 and April 2005.

Capture technique	No. of cranes caught
Clap trap	28
Simple snare	18
Hand grab/run down	12
Trough blind	5
Net gun	2
Multiple snare	1
Total	66

When handlers gained control of all birds, the observer came out of the blind and assisted. We took precautions to make sure birds did not overheat by shading them and spraying their hocks with water. We also made sure all gill netting was removed before release.

Capture probability was calculated as the proportion of all captures in which at least one target bird was captured when the trap was triggered. Individual capture success was defined as the proportion of all birds that were in the trap that were captured when the trap was triggered.

## RESULTS

Between March 2001 and April 2005, we captured 66 whooping cranes using 6 different capture techniques. More cranes were caught with the clap trap method than any other individual technique used (Table 1). We made 28 of 66 captures with the clap trap, accounting for 42% of total birds caught. We triggered the clap trap a total of 17 times. Six of those 17 times we caught 1 bird, 5 we caught 2 birds, and 4 we caught 3 birds. On 2 attempts we caught nothing. Of the 17 attempts made, we caught birds on 15, resulting in an 88% capture probability.

On 2 occasions, 1 bird was caught and a second bird escaped. On 1 occasion, 2 birds were caught and a third bird escaped. On 12 occasions, we caught all birds in the trap. Overall, the individual capture success rate was 85%.

The clap trap can be used more than once to capture the same individual. We have caught 3 birds on two different occasions each. In another instance, a bird escaped the trap, and when we made a second attempt 7 days later, it was captured.

Three birds sustained minor injuries during capture or handling. One bled slightly from a cut on the inside of its right toe, probably from the gill netting. The second bird had a minor cut to the right patagium and a broken contour feather near its tail. The third bird was molting and its flight feathers had grown only 5-8 cm in length when it was captured. Its second primary on the right wing appeared floppier than the

others and had a small amount of blood at its base. None of these injuries resulted in any noticeable long-term effects on the birds' health. The time it took for us to remove 1 to 3 birds from the gill netting ranged from 3 to 9 minutes.

## DISCUSSION

The clap trap proved to be an important tool. One of its most appealing features was its ability to safely catch multiple cranes at once. The traps were fairly easy to build and inexpensive (each under \$40), so we regarded them as expendable. This allowed us to cut birds out of nets quickly, reducing their handling time.

Though productive, the clap trap was not perfect. Traps were time consuming to set up, and if we did not take great care to set them up properly, the traps would not trigger correctly. The birds seemed to notice any changes in the trap site, and on numerous occasions, they were reluctant to enter the trap. To ensure a swift trap closure, the trigger blind had to be placed close to the trap site which sometimes alarmed wary birds. Moving this blind farther than 4 m sometimes created a lag time in closure which caused a potential for escape. Often, when capture attempts were arranged, the birds would not enter the trap and sometimes would not even show up at the trap site. On a few occasions, target birds were inside the trap but we could not trigger it because another bird was standing on a part of the rope or gill netting. Sometimes birds would be too close together inside the trap. This prevented us from triggering the trap, to minimize the chance that birds might injure each other while trying to escape. When birds did escape, it was always out the top of the trap because of slow triggering or improper trap closure. Livestock interference was often a problem. Livestock would find the bait sites, eat all of the bait and trample the trap site in the process.

The clap trap's safety, low cost, and ability to catch several birds in one effort were its primary benefits. While it can be difficult to deploy initially, it became very practical after practice and experience.

## ACKNOWLEDGMENTS

We thank the landowners who allowed us access to their properties and all volunteers who helped with captures and provided suggestions for how to improve the trap. We thank T. Dean for helping prepare the figures and with editing. We also thank the Mississippi Sandhill Crane National Wildlife Refuge for introducing the clap trap to us. Funding for this work was supported in part by the USFWS via Cooperative Agreement No. 401814-J-035.

## LITERATURE CITED

- Folk, M. J., S. A. Nesbitt, S. T. Schwikert, K. A. Sullivan, T. M. Miller, S. B. Baynes, and J. M. Parker. 2005. Techniques employed to capture whooping cranes in central Florida. *Proceedings of the North American Crane Workshop* 9:141-144.
- Hereford, S. G., T. E. Grazia, M. Nagendran, and A. Hussain. 2001. Use of traditional Indian trapping methods to capture sandhill cranes. *Proceedings of the North American Crane Workshop* 8:220 (abstract).
- Nesbitt, S. A., M. J. Folk, M. G. Spalding, J. A. Schmidt, S. T. Schwikert, J. M. Nicolich, M. Wellington, J. C. Lewis, and T. H. Logan. 1997. An experimental release of whooping cranes in Florida – the first three years. *Proceedings of the North American Crane Workshop* 7:237-242.