A Portable Drop Net for Capturing Urban Deer

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Abstract: A free-standing, portable drop net was developed and used in the capture of 82 Florida Key deer (*Odocoileus virginianus clavium*). The net was efficient, easy to set, inexpensive, and non-invasive (e.g., no blasting caps, no destruction of private property). Of 82 trapping attempts, 74 (90%) resulted in the capture of at least 1 deer, 3 (4%) resulted in net malfunction (e.g., net hung), and 5 (6%) resulted in deer escaping. The net can be used to trap deer and other animals in urban areas and can be effective in other areas where wildlife are susceptible to baiting.

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A wide variety of traps and trapping techniques has been used to capture free-ranging white-tailed deer (Rongstad and McCabe 1984). Many conventional capture techniques are inappropriate for capturing deer in an urban environment because such trapping techniques are noisy, difficult to set, and/or unsafe. Cannon/rocket nets (Hawkins et al. 1968) and net guns (Rongstad and McCabe 1984) have been used to capture deer, but these traps are extremely noisy and their use is prohibited or discouraged in many urban areas.

Glazener et al. (1964), Ramsey (1968), and Silvy et al. (1990) described the use of drop nets for animal capture. Although these drop nets were effective in animal capture, they were relatively expensive to construct, involve an explosive tripping mechanism, and were difficult to set. Silvy et al. (1990) described a mechanical drop net that was inexpensive and easy to set, but required corner poles to be driven into

the ground, which is difficult in areas with little or no soil or where use of substitute structures (e.g., trees, poles) are lacking. Moreover, use of drop nets (Glazener et al., 1964, Ramsey 1968, Silvy et al. 1990) requiring substantial set-up time or placement of semi-permanent structures (i. e., corner posts) is limited in residential areas. Problems include difficulty in determining land-ownership and requesting permission to trap within a short time-frame and the potential for property disturbance (e. g., digging holes). All of these variables are often compounded in urban settings.

We developed a drop net to capture deer in an urban environment that is free-standing, portable, easy to set, inexpensive, and non-invasive (i.e., no blasting caps, no destruction of private property).

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Methods

Construction

The self-supporting frame of our drop net was constructed of light-weight, 16-gauge tubing (chain link fence top rail tubing) (Fig. 1). Tapered segments (3.5 cm) of tubing welded at corner posts were used to allow simple and rapid frame set-up. The frame weighed approximately 40 kg and could easily be moved by 2 people when fully assembled.

A 5.2 m × 5.2 m square net (25.4 cm stretch mesh, No. 504 knotless nylon, Nichols Net and Twine Co., East St. Louis, Ill.) was used to construct the drop net. A braided nylon perimeter rope (0.75 cm) was threaded around the net perimeter and tied to a washer (corner pole 1). The net perimeter rope looped around corner poles 2 and 4 of the frame to an oversized ring at corner 3. The oversized ring at corner pole 3 fell freely when net tension was released. To suspend the net on the frame, the net was raised and pulled toward corner 1 (net strictly held up with tension) and fastened to corner pole 1 with a pull-pin and washer mechanism. The corner of the net at corner pole 1 was secured to the frame with a 1-m safety rope and ring. Release of the pull-pin from corner pole 1 was accomplished with a piece of baling twine (preferred over nylon due to limited stretch), which resulted in the net falling freely. A 0.5-m piece of twine was attached to the pull-pin and looped over the top of corner pole 1 to prevent the pulled pin from springing back and hitting the person pulling the pin. Material cost for the net was approximately $85 (1998 prices), including frame material, net, and rope/twine.

Field Operation

Use of the portable drop net involved driving roads in search of Key deer. Once a target animal was sighted, the net frame was assembled (2–3 minutes with 2 people,

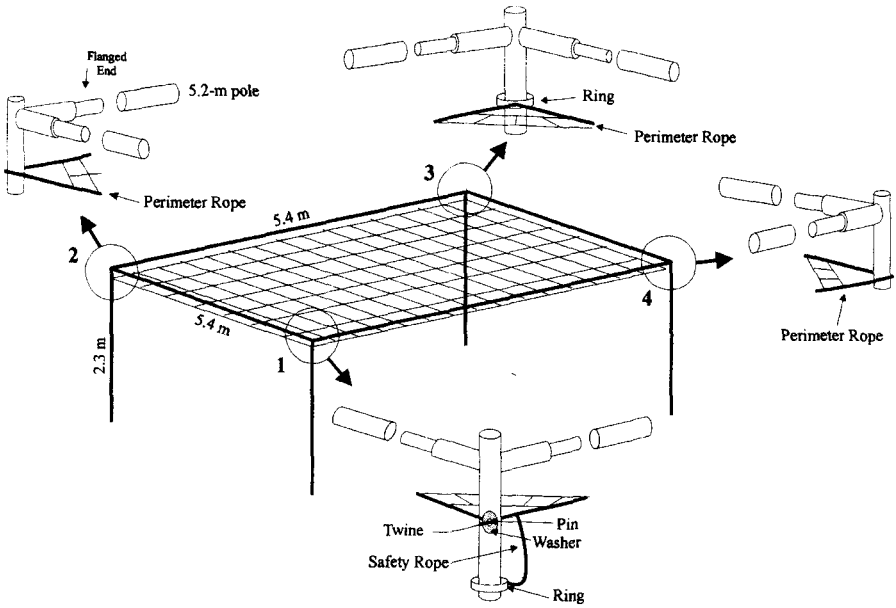

Figure 1. Portable drop net for capturing Key deer, Big Pine Key, Florida, 1998.

no tools required) and deer were lured under the net with bait (vegetation clippings, bread). The net was released with a pull-pin mechanism when the target animal moved under the net. We trapped Key deer along roadsides, in empty subdivision lots, and other areas clear of vegetation and debris to prevent net entanglement.

In trapping wild Key deer, the drop net was assembled as described above. A blind was set and the trap site baited (horse and mule sweet feed) 1–2 weeks prior to trapping. During baiting, the net was wired to the frame to prevent accidental tripping. Wild deer were trapped between 1700–0800 hours.

Results and Discussion

From January to April 1998, 82 Key deer (15 adult males, 33 adult females, 13 yearling males, 15 yearling females, 1 male fawn and 5 female fawns) were captured using this technique over approximately 85 hours of trapping-time (excluding baiting time). Had we not selected for deer of a particular age and sex in each subdivision, many additional deer could have been trapped. Sixty-four urban and 18 wild deer were captured both at a rate of 1 deer/hour.

The most taken with a single drop was 3 deer. Usually, only selected individuals were trapped in a given set and efforts were made to make sure other deer were not under the net when tripped. Of 82 trapping attempts, 74 (90%) resulted in the capture of at least one deer, 3 (4%) resulted in net malfunction, and deer escaped in 5 attempts (6%). Escapes usually occurred when one side of the net hung or the deer was

not centered under the net when it was tripped. No injuries or serious problems occurred during trapping. The 3 net malfunctions occurred early in the study and were attributed to the net being stretched too tight within the net frame.

Drop net effectiveness increased if 1 side of the frame was adjacent to areas with overstory cover (i.e., use of "edges"), as Key deer were not as reluctant to go under the net. As Key deer were wary of the net when it was being whipped by wind speeds above 25 km/hour, effectiveness also was increased by trapping on calm days.

The major advantages of this net were simplicity, portability, safety, low cost, quiet, and non-invasive. By altering its size (larger net dimensions for larger animals), this design could potentially be used for other animals (e.g., dogs, turkeys) that are easily baited.

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