

A Mist Net Technique Useful for Capturing Barred Owls

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From May 1980 to August 1982 a study was conducted on various methods of capturing Northern barred owls (*Strix varia*). During this time, 39 owls were caught using various mist net designs and the success rate for each was calculated. Criteria examined included net size and shape, use of live or stuffed decoy(s) and sound recordings. Weather conditions at the time of observations were also recorded and later correlated to the success of individual capture efforts.

Study area

The study area is located on about 23,000 acres near Marquette, Michigan. It is within the Huron Mountains and bordered on the north by Lake Superior and on the south by the Yellow Dog Plains. The rugged topography is primarily vegetated by old growth hemlock (*Tsuga canadensis*) and Northern hardwoods.

Methods

A general survey of the study area was conducted nightly by driving the roads, stopping every (0.8 km) 0.5 miles and playing a commercial recording of the barred owl for 5 to 8 minutes. The tape was played until both members of the pair responded. This spot was marked with colored plastic tape tied around a tree. Once the territories had been located, an attempt to capture one or both members of each pair was made.

Mist nets were erected during the day near the survey points so the birds would not be disturbed. During the three years of the study, various net configurations were tried, but only one proved to be consistently successful. This was the "A"-net, consisting of three mist nets, two long and one short placed to form an "A." The long nets were two-shelved 12 meter (39.4 feet), 121 millimeter mesh nets supported on electrical conduit poles and positioned at angles to each other to form a V shape. The poles at the narrow end were about 1 meter (3.1 feet) apart and about 7 meters (21.3 feet) apart at the wide end. A short net was stretched between the two long ones to form an "A" configuration (Figure 1). A live barred owl was placed in the center of the setup as a decoy and protected from all sides with netting. An out-

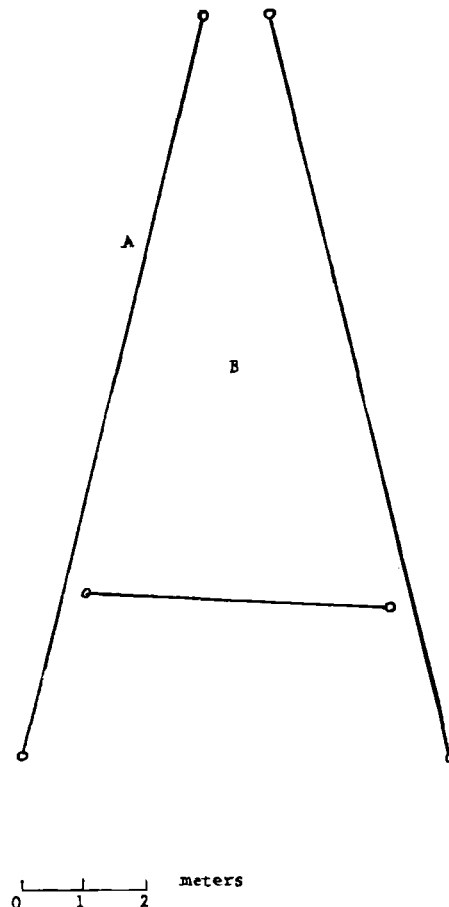


Figure 1. Top view of A-net design with a live decoy

A—Japanese mist net

B—Live Decoy

door megaphone speaker placed under the decoy and controlled from a blind served as the sound stimulus to lure owls to the capture site.

The researchers were positioned in a car blind, which had a green parachute draped over it, about 30 meters (92 feet) from the nets. A long speaker extension cord allowed the observers to control a cassette game caller from the blind for volume adjustment and pauses.

Attempts to capture the owls usually began about half an hour before dark so the decoy could be recognized immediately. Small bells were attached to the net trammels to aid in detecting a captured owl when it became too dark to see. Rubber intertubing was also placed on the trammel loops to give the net more flexibility so that owls would not bounce out when they hit. The researchers ran to the net as soon as a bird was captured to prevent it from struggling free or injuring itself. The sex of the captured owl was determined by listening to the calls of the uncaught owl. Sexual dimorphism occurs in the barred owl's voice and the female is distinguished from the male by her higher pitched call which usually ends in a long trill. This procedure would not be possible with a capture system that relied on periodic inspections of the net.

Results

Of 103 capture attempts using Japanese mist nets, 39 (37.9 percent) were successful. Trapping success dropped sharply after 1980, from 63.3 percent to 27.8 percent in 1981 and 26.3 percent in 1982. Success rates were best for "A"-nets, a live decoy and a recording of a territorial pair (Table 1). The nets were susceptible to weather conditions. Of 48 attempts to capture barred owls during calm weather, 17 were successful (35.4 percent) whereas only three owls were caught out of 28 attempts during windy conditions (9.7 percent).

Table 1. Yearly percent success of various net configurations used during the three years of the study.

Year	Net Type	Total Attempts	Captures	Percent Success
1980	Single net with live or stuffed decoy	6	1	16.7
	Double net with live or stuffed decoy	1	1	100.00
	Net with bait	2	1	50.0
	Net with own recording	6	5	83.3
1981	Single net with live or stuffed decoy	9	3	33.3
	Double net with live or stuffed decoy	5	3	60.0
	Single net with two stuffed decoys	3	1	33.3
	Double net with two stuffed decoys	21	5	23.8
	Net with live decoy	8	4	50.0
	Net with own recording	1	1	100.0
1982	Single net with stuffed decoy	8	0	0.0
	A-net with live decoy	11	5	45.5

Discussion

Barred owls are territorial but will occasionally make incursions into neighboring territories (Nicholls, 1973). Kilham (1972) speculated that territorial boundaries were defined vocally. Nicholls (1973) stated that there is some evidence that home range size and location remain constant despite changing occupants. Utilizing a decoy and sound recordings, the researchers made use of these characteristics to entice the resident owls into the nets.

The live decoy's effectiveness was due to the movements it made in response to the activities of the territorial owls about to be captured. The stuffed decoys were only effective when detected before dark because of their lack of movement. The commercial tape proved to be effective only in calling the resident owls to the capture site. This was primarily due to the frequent repetition of calls without pauses, and thus would not hold the owls in the area for long. Playing a neighboring pair's recording or their own recording back to themselves was the most effective procedure for keeping the owls near the nets and inducing attack. These calls were familiar to the owls either from boundary disputes in the past or mate recognition and thus increased response levels to the point of aggression.

If the attacking owl hits the net and escapes before it is secured, it becomes reluctant to try again that night. Also, the owls learn to recognize the capture setup once they have been caught and handled. This decreased the capture success rate each year as more owls were netted. This, however, increases the chance of capturing the unmarked member of the pair and gives the researcher an opportunity to study pair bond relationships.

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Literature Cited

- Kilham, L. 1972. Caterwauling of the barred owl: A speculation. *N. A. Audubon Quart.* 25 (3):93-94
 Nicholls, T. H. 1973. Ecology of barred owls as determined by an automatic radio-tracking system. Ph.D. Thesis. Univ. Minn. 205 p.