

An Efficient Method for Capturing Barred Owls

Todd M. Whiklo

Department of Biological Sciences
University of Manitoba
Winnipeg, MB R3T 2N2
twhiklo@shaw.ca
present address: 30 Humber Road,
Winnipeg, MB R2J 1L6

James R. Duncan

Wildlife & Ecosystem Protection Branch
Manitoba Conservation
Box 24, 200 Saulteaux Crescent
Winnipeg, MB R3J 3W3
James.Duncan@gov.mb.ca

ABSTRACT

*Published trapping techniques were tested to capture, mark, and release Barred Owls (*Strix varia*) from 2009 to 2011 in southeastern Manitoba. These proved to be inefficient; therefore, we developed and are reporting an improved method. A simple setup consisting of one mist net, two extended sectional mist net poles, high visibility string, two carabiners and a remotely controlled electronic game caller with recorded Barred Owl calls was developed and used in conjunction with a live Barred Owl lure bird. Our setup differed from other mist net setups used for Barred Owls by its height (6.1 m) and its shape (a straight line). We achieved a 77% success rate when using this setup and experienced few disadvantages in its operation. We strongly encourage published research that involves the capture of wild animals to better report the effort and efficiency (success rates per unit time) of capture methods so that researchers using them to initiate research on species new to them can avoid inefficient methods.*

Barred Owl (*Strix varia*) is a relatively understudied species of owl in North America. Difficulties in capturing this species for measurement, banding and/or radio marking may contribute to the scarcity of published data. Published accounts on capture techniques for Barred Owls often lack details about how trapping methods were implemented or omit time requirement per owl (Nicholls and Warner 1972, Hamer et al. 2007, Singleton et al. 2010). Furthermore, the success rate of each trapping technique is seldom reported (Berger and Mueller 1959, Mazur et al. 1998). This disparity leaves novice Barred Owl researchers with little information on how to capture Barred Owls efficiently and what equipment is most effective.

We describe here an efficient method of capturing Barred Owls, developed largely through trial and error while implementing published techniques (Stewart et al. 1945, Berger and Mueller 1959, Olsen et al. 2006, Bierregaard et al. 2008).

METHODS

We constructed a mist net setup consisting of one (61mm mesh, 12 m x 2.6 m) mist net, one set of mist net poles, one FoxPro® Spitfire electronic game call, one spool of high-visibility string and two threaded carabineers. Our initial set-up was altered by purchasing a second set of mist net poles and adding the extension pieces (with female-male joining ends) to our existing set, increasing the height from 3.7 m to 4.9 m. We finalized the setup by removing the male/male fitting, found on the stake (bottom) section of the second set of mist-net poles, and inserting it into the top (female-female) extension and added in that section, giving us a final height of 6.1 m. We used a piece of geotextile cloth (12m x 1m) to store the mist net during transporting and set up. Thus, we could fold the mist net tightly while remaining tangle-free for transport and quickly unravel the mist net on a rough substrate while keeping debris out of the mist net.

We used a live rehabilitated but unreleaseable Barred Owl lure bird tethered to a portable bow perch centered in front of or underneath the mist net; though one female Barred Owl was captured successfully without a lure bird present. We placed the FoxPro® Spitfire game call next to the lure bird

and remotely operated it from an average distance of 10 m. We did not use camouflage or other concealment to hide the mist net poles, game call unit or ourselves. We used customized playback loops designed by TMW to imitate either a solo male, solo female or a territorial pair interacting. These playbacks were spliced together using audio files available on the internet and in a sequence determined to be "natural" sounding and similar to vocal series heard during our research as well as found in other studies (Odorn and Mennill 2010).

Once a pair of Barred Owls was located using playback surveys (Whiklo 2011), a suitable trapping site was selected. This was usually a cleared roadside right-of-way or clearing with no structure that an owl could perch on, causing owls to fly by the set-up to inspect the source of calls. The mist net was erected by wiring the carabineers to the top end of the top mist net pole (female-female) extension, fastening the high visibility string to the top loop of the mist net and through the carabineer, hooking the mist net attachment loops around the mist net poles and simultaneously drawing the mist net up. Added height, from the addition of the extra mist net pole extension pieces, allowed us to adjust the mist net height, as required, to match the flight trajectory of a target owl. This setup differs from other Barred Owl mist net setups by being configured in a straight line instead of a "V" or "A" formation (Elody and Sloan 1984); therefore a direct "attack" on the lure is not required to entangle the bird. The majority of owls captured using this set-up were not "attacking" the lure but performing a fly-by or investigative pass over the setup.

RESULTS

We captured 10 Barred Owls in 13 trapping attempts using this setup, giving us a success rate of 77%. Nine of 10 owls were captured at night, with the remaining one being captured just prior to sunset. In two failures, Barred Owls continually missed the net. In one case, our setup was on a hillside where the owl was flying much higher than normal; the second was a solo male that made a few passes beside the mist net, after which the trapping

session was disrupted by traffic. Both failures were believed to be due to poor trapping location, not the owls evading the net. In the final case, a female owl hit the mist net but failed to become entangled, possibly because high wind conditions created too much slack in the mist net. We encountered no mortality or injuries in association with our setup. On only one occasion the lure bird appeared to be struck by another owl, but there was no injury to either bird. We estimate an average time between the location of a Barred Owl, set-up assembly and successful capture of 30 min.

DISCUSSION

There are many advantages to this mist net setup. We achieved a high success rate associated with this setup (77%), when compared to other published reports (Elody and Sloan 1984) and other trapping techniques which we attempted. Costs of materials were relatively low, with the electronic game call unit and mist net poles being the main expenses. There are ways researchers could mitigate the financial burden of these pieces of equipment (Albanese and Piakowski 1999). The need for camouflage, as used in other studies (Elody and Sloan 1984), was eliminated. On one occasion, a female Barred Owl perched on the top of the mist net pole directly above the researchers, before making a fly-by and being caught. Welfare of the lure bird and wild owls was maintained, as captured owls were freed easily from the mist net, unlike our experience using a dho-ghaza, and in the majority of trapping attempts the lure bird appeared to be in no danger, with most captured owls striking the mist net either near the edges or higher than 2 m from the ground. Time requirements for each trapping attempt were lower than in other studies (Bierregaard et al. 2008) and allowed for multiple trapping attempts each night.

There were disadvantages encountered with this setup. Windy conditions are of concern when using any mist net setup; however, because of the height of our setup and the length of the mist net, the setup tended to catch more wind, which caused the mist net poles to lean inward, resulting in slack in the

mist net. Mist net length was not an issue for us, although it may become an issue when trapping owls in more confined areas. A final disadvantage did not concern the setup per se; these were the requirements associated with using a live lure bird. Housing, feeding and permitting were all costly and time consuming.

Researchers must remain vigilant to protect the live lure bird from being injured by target owls as well as both avian and terrestrial non-target species. Care must also be taken when working a mist net of this size to exclude non-target birds from hitting the mist net, and to keep insects and other debris from becoming entangled in the mist net which may hamper trapping attempts or injure target owls.

Our total mist net setup cost (in Apr 2012, 1 CAD = 0.997 USD) \$ (CAD) 591.86; one mist net @ \$65.00 (Association of Field Ornithologists, <http://www.afonet.org/banding>), two mist net pole sets @ \$155.00 (Association of Field Ornithologists), one FoxPro® Spitfire game call @ \$209.99 (FOXPRO Inc., Lewistown, PA, <http://www.gofoxpro.com>), one spool of high visibility string @ \$5.49 (Home Depot, <http://www.homedepot.ca>) and two threaded carabiners @ \$0.69 (Rona Inc., <http://www.rona.ca>).

ACKNOWLEDGMENTS

Our research was supported by Manitoba Conservation, Manitoba Hydro, the University of Manitoba, the Manitoba Model Forest Inc., the Raptor Research Foundation, and the Winnipeg Foundation. Thanks to Dr. Terry Galloway for reviewing drafts of this manuscript and providing comments.

LITERATURE CITED

- Albanese, G. and V. Piakowski. 1999. An inexpensive elevated mist net apparatus. *North American Bird Bander* 24:129-134.
- Berger, D.D. and H.C. Mueller. 1959. The bal-chatri: a trap for the birds of prey. *Bird-Banding* 30: 18-26.

- Bierregaard, R.O., E.S. Harrold, and M.A. McMillian. 2008. Behavioral conditioning and techniques for trapping Barred Owls (*Strix varia*). *Journal of Raptor Research* 42: 210-214.
- Elody, B.I. and N.F. Sloan. 1984. A mist net technique useful for capturing Barred Owls. *North American Bird Bander* 9:13-14.
- Hamer T.E., E.D. Forsman, and E.M. Glenn. 2007. Home range attributes and habitat selection of Barred Owls and Spotted Owls in an area of sympatry. *Condor* 109:750-768.
- Mazur, K.M., S.D. Frith, and P.C. James. 1998. Barred Owl home range and habitat selection in the boreal forest of central Saskatchewan. *Auk* 115:746-754.
- Nicholls, T.H. and D.W. Warner. 1972. Barred Owl habitat use as determined by radiotelemetry. *Journal of Wildlife Management* 36: 213-224.
- Odom, K.J. and D.J. Mennill. 2010. A quantitative description of the vocalizations and vocal activity of the Barred Owl. *Condor* 112:549-560.
- Olsen, B.T., S.J. Hannon, and G.S. Court. 2006. Short-term response of breeding Barred Owls to forestry in a boreal mixed wood forest landscape. *Avian Conservation and Ecology - Écologie et conservation des oiseaux* 1:1. [online] URL: <http://www.ace-eco.org/vol1/iss3/art1/>
- Singleton, P.H., J.F. Lehmkuhl, W.L. Gaines, and S.A. Graham. 2010. Barred Owl space use and habitat selection in the Eastern Cascades, WA. *Journal of Wildlife Management* 74:285-294.
- Stewart, R.E., J.B. Cope, and C.S. Robbins. 1945. Live trapping of hawks and owls. *Journal of Wildlife Management* 9:99-104.
- Whiklo, T.M. 2012. Nest structure and breeding habitat characteristics of Barred Owls (*Strix varia*) in Manitoba, Canada. M.Sc. thesis, University of Manitoba, Winnipeg, MB.