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EFFICACY OF TARGETED MIST-NETTING TO CAPTURE NORTHERN BOBWHITES DURING THE NON-BREEDING SEASON IN OHIO

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ABSTRACT
Baited funnel traps and nightlighting are well established northern bobwhite (Colinus virginianus) capture techniques, but their use is not always appropriate, particularly on private land where cooperating landowners may place constraints on research activities. Alternative capture techniques may be more effective under conditions considered to be unfavorable for established techniques (e.g., periods with abundant natural food). Targeted mist-netting, where mist nets are erected near the known location of specific individuals, has been used to capture gallinaceous species and may be an effective alternative to established bobwhite capture techniques. We evaluated the effectiveness of using targeted mist-netting to capture bobwhites during the non-breeding season in Ohio. We tested for differences in survival and age and sex ratios of individuals captured with targeted netting and baited funnel traps. We captured 257 individuals with targeted netting during 1 October–28 February 2009–2011 and concurrently captured 253 individuals with baited funnel traps. There was a short-term influence of capture and handling, but there was no significant difference in post-capture survival of bobwhites captured with targeted netting or trapping. Capture rates of age and sex classes were similar (P = 0.488 and P = 0.973, respectively) between targeted netting and trapping. Body mass of bobwhites captured by targeted netting was less than that of bobwhites captured by trapping (P = 0.009) suggesting that netting may provide more accurate estimates of body mass. We used targeted netting to capture bobwhites in a variety of situations where use of funnel traps was ineffective or problematic. Targeted netting was effective and often more compatible with constraints of working on private land than established capture techniques.

INTRODUCTION
Northern bobwhites have been studied for > 80 years (Scott 1985, Brennan 1999), but capture techniques used during the non-breeding season are largely unchanged. The 2 most commonly used, baited funnel traps (Stoddard 1931: 422) and nightlighting (Labisky 1968), have been effective in a variety of habitat types and seasons making use of alternative capture techniques generally unnecessary (e.g., Hernández et al. 2006). However, their use is not always compatible with working on private land. Both techniques require frequent investigator presence that could disrupt alternative activities on private lands (e.g., hunting, farming) and cause landowners to deny or rescind permission for access to their properties (Hilty and Merenlender 2003). The effectiveness of traditional techniques can vary with environmental conditions (e.g., periods with abundant food). Capture techniques that minimize investigator presence and are effective in a variety of environmental conditions may be more compatible with working on private lands and provide researchers with an alternative to traditional capture techniques.

Mist nets have been used to capture gallinaceous species in conjunction with audio lures (Cink 1975, Lohr et al. 2011), pointing dogs (Skinner et al. 1998), radiotelemetry (Schladweiler and Mussehl 1969), and researchers directing the path of flushing birds (Silvy and Robel 1968, Campbell 1972, Browers and Connelly 1986). Schladweiler and Mussehl (1969) used a mist-netting technique to capture specific radio-marked individuals. Skinner et al. (1998) used a comparable technique to capture juvenile willow ptarmigan (Lagopus lagopus) over pointing dogs. Investigators knew the location of birds in both applications, and placed mist nets to intersect the predicted flushing direction, effec-
tively targeting specific individuals for capture (i.e., targeted netting). Targeted netting for bobwhites is not new, but the relative convenience of mist nets has made it far more practical than early attempts with clap nets (Stoddard 1931: 441). Mist nets have been used to capture bobwhites, but investigators passively netted individuals attracted by an audio lure during the breeding season (Cink 1975, Lohr et al. 2011). Targeted mist-netting should be an effective way to capture bobwhites during the non-breeding season because of their gregarious behavior during this period and their relatively low and short flight trajectories (Kassinis and Guthery 1996). Coveys can be located and targeted for capture by following previously radio-marked individuals, using pointing dogs, or after incidental flushed.

We evaluated the effectiveness of targeted mist-netting to capture bobwhites during the non-breeding season on private lands in southwestern Ohio. Our objectives were to: (1) evaluate the efficacy of targeted netting to capture bobwhites; (2) compare body mass, age, and sex ratios of individuals captured with baited funnel traps and mist nets to test for potential capture-related biases; and (3) test for differences in post-capture survival of individuals captured with baited funnel traps and mist nets.

STUDY AREA

We worked on 4 private land sites in Highland and Brown counties in southwestern Ohio (centered at 39°04′59″, 83°39′10″). The sites were in the glaciated till plains physiographic region (Ohio Division of Geologic Survey 1998). The predominant land-use in the area was agriculture (39% row crops and 17% pasture/hay fields; Homer et al. 2004). Mean annual temperature was 11.1 °C and mean annual precipitation was 110.2 cm (NCDC 2011).

Habitat composition on the study sites was primarily row crop agriculture (55%) planted in soybeans and corn. Forests covered 13% of the study sites and were dominated by oak (Quercus spp.) and hickory (Carya spp.), although some bottomland forests were primarily ash (Fraxinus spp.) and black walnut (Juglans nigra). Early successional vegetation, including grasslands, oldfields, fencerows, and ditches covered 19% of the study area. Grasslands were generally dominated by fescue (Festuca spp.) or Indiangrass (Sorghastrum nutans). The most common shrub species used by bobwhites were blackberry (Rubus allegheniensis) and black raspberry (R. occidentalis).

METHODS

We captured bobwhites during 1 October–28 February 2009–2011 using baited funnel traps or targeted netting. Trapping, handling, and marking protocols were reviewed and approved by the Animal Care and Use Committee at Ohio State University (protocol # 2007A0228). We did not use nightlighting because of the proximity of study sites to areas where people unfamiliar with our research might have been alarmed by activity after sunset. Implementation of capture methods was non-random and opportunistic, dictated by expediency and necessity. We used both capture methods concurrently throughout the study period to maintain ≥ 1 radio-marked individuals in each known covey within the study sites.

Funnel traps were 30 × 40 × 45 cm and were baited with cracked corn. Traps were covered with burlap (Stoddard 1931: 443) to reduce trap-related injuries. We placed traps in areas where use by bobwhites was evident. We pre-baited trap sites with cracked corn for 1 week before traps were used. We positioned traps within cover and concealed them with vegetation to protect bobwhites from predators and weather. We checked traps ≥ 2 times per day after sunrise and at sunset. We documented trapping effort (i.e., trap-days) during the 2010–2011 field season.

We used 61-mm mesh 4-shelf mist nets for targeted netting (AFO Mist Nets, Manomet, MA, USA). Each net measured 2.6 by 12 m and was suspended between 2, 3.05-m aluminum conduit poles (1.9-cm diam). We used homing or triangulation from short distances to locate coveys with previously radio-marked individuals (White and Garrott 1990). We identified the apparent location for coveys that did not contain radio-marked individuals using cues from pointing dogs and by visually marking the location of bobwhites that were flushed incidental to other research activities. Nets were erected near the anticipated covey location and positioned to intersect the most likely flight path of flushing bobwhites. We identified the most likely flight path based on characteristics of nearby cover, position of pointing dogs, and direction of investigator approach. We typically used 1–2 nets during each attempt, although up to 4 nets were used within expansive homogenous cover (e.g., grass fields) where flight direction was less predictable. Investigators flushed bobwhites toward the standing nets and extracted entangled birds. We defined netting attempts as events where ≥ 1 bobwhite was flushed after ≥ 1 mist net was fully deployed. We documented all netting attempts including date, method of bobwhite location, habitat type, number of bobwhites captured, and reasons for failure. We defined successful attempts as those that resulted in capture of ≥ 1 bobwhite.

We recorded age and sex of each bobwhite (Rosene 1969: 44–54), and weighed birds to the nearest gram. We leg-banded all captured bobwhites and radiomarked a subset of individuals weighing ≥ 165 g with pendant-style mortality-sensing radio transmitters (6.6 g; Advanced Telemetry Systems, Isanti, MN, USA). We released bobwhites at the capture site immediately after processing and marking. We located each radio-marked individual ≥ 6 times/week by homing or triangulation (White and Garrott 1990). We immediately located the transmitter after detecting a mortality signal and inferred the cause of mortality based on field signs at recovery sites or condition of the transmitter.

We used a Chi-square test to examine differences in age and sex ratios of individuals captured. We used a t-test to examine differences in body mass potentially
considered all models with $D$ interpreted the influence of each parameter in the top equivalent support (Burnham and Anderson 2002). We
Table 2. Total number of targeted netting attempts on bobwhites

<table>
<thead>
<tr>
<th>Location method</th>
<th>No. of attempts</th>
<th>Success rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiotelemetry</td>
<td>155</td>
<td>67.7</td>
</tr>
<tr>
<td>Pointing dog</td>
<td>30</td>
<td>76.7</td>
</tr>
<tr>
<td>Incidental contact</td>
<td>16</td>
<td>81.3</td>
</tr>
</tbody>
</table>

caused by consumption of bait after capture in funnel
traps. We excluded individuals < 150 days of age based
on molt of primary flight feathers (Rosene 1969) in body
mass comparisons. We assumed potential influences
associated with handling and radiomarking were equal
between capture methods and tested for differences in
post-capture survival between the 2 techniques. We used
funnel traps and targeted mist-netting concurrently and
assume captured individuals were exposed to the same
natural mortality factors. We used the nest survival model
in Program MARK to compare post-capture survival over a
21-day interval starting at the day of the initial capture.
We assumed mortalities after a 21-day interval were
unrelated to the initial capture. Abbott et al. (2005)
detected differences in survival between 45 and 62 days
but we assumed that such differences would be difficult to
detect in our data set, because of the low survival
observed in the population (Janke and Gates 2012).
We compared 8 models with age and temporal (i.e.,
year and time) effects (Holt et al. 2009). We used the most
parsimonious baseline model to examine the influence of
capture technique (netting or trapping) and linearly
decreasing effects representing days since capture
(DSC). The DSC covariates represented a decreasing
linear trend from day of capture through 3, 7, 14, or 21
days. Day values represented a range of traditional
censoring periods used in radiotelemetry studies to control
for short-term acute effects of capture and handling (Holt
et al. 2009). We developed a candidate model set that
included a model for each DSC covariate alone, each DSC
covariate with a capture technique effect, and their
interaction. Interaction terms were used to test for
differences in DSC influences between capture tech-
niques. We compared models with Akaike’s Information
Criteria corrected for small sample sizes (AIC$_c$), and
considered all models with $\Delta$AIC$_c$$<2.0$ as having
equivalent support (Burnham and Anderson 2002). We
interpreted the influence of each parameter in the top

Table 2. Total number of targeted netting attempts on bobwhites

<table>
<thead>
<tr>
<th>Habitat type</th>
<th>No. of attempts</th>
<th>Success rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural field</td>
<td>13</td>
<td>53.8</td>
</tr>
<tr>
<td>Grassland and old field</td>
<td>56</td>
<td>76.8</td>
</tr>
<tr>
<td>Woody ditch and fencerow</td>
<td>103</td>
<td>69.9</td>
</tr>
<tr>
<td>Woodlot</td>
<td>17</td>
<td>47.1</td>
</tr>
<tr>
<td>Unknown (not recorded)</td>
<td>12</td>
<td>91.7</td>
</tr>
</tbody>
</table>

models based on model-averaged coefficients and 95% confidence intervals.

RESULTS

We captured 257 individuals with targeted netting
(137 in 2009-10 and 120 in 2010-11) and 253 individuals
with baited funnel traps (105 in 2009-10 and 148 in 2010-
11). A single successful netting attempt generally captured ≤ 4 birds, whereas a successful trap was capable
of capturing as many as 18 in a single event. We captured
0.306 birds/trap-day in 484 trap-days during the 2010–
2011 field season. We made 201 targeted-netting attempts
of which 141 (70.1%) were successful. Success rates were
similar among covey location methods (Table 1) and
habitat types (Table 2). We incorrectly predicted flight
path in 56.7% of all failed netting attempts for which
reason for failure was recorded ($n = 30$). Flight in the
predicted direction but over standing nets contributed to
36.7% of recorded failures. Other reasons for failure
included bobwhites breaking through or striking the net
without becoming entangled. There were no differences in
age ($\chi^2 = 0.480, df = 1, P = 0.4884$) or sex ($\chi^2 = 0.001, df = 1, P = 0.973$) ratios of birds captured between the 2
techniques (Table 3). Mean body mass of bobwhites
captured by targeted netting (mean = 185.6 g, 95% CI = 183.5-187.6 g) was less than bobwhites caught in traps
(mean = 191.4 g, 95% CI = 188.7-194.1 g; $P = 0.009$).
Bobwhites or non-target passerines died in funnel traps in
≥8 events during the study period, all of which resulted from
predation while in the trap. Trapped bobwhites
occasionally sustained visible injuries (e.g., scalp lacer-
ations) from striking the top of the trap. No bobwhites
died during capture with mist nets although 2 (0.8%) were
visibly injured by pointing dogs following entanglement
in the net.

We included 259 individuals in the survival analysis
(netting: $n = 153$, trapping: $n = 103$). The best fitting
baseline model in the survival analysis represented an
across year quadratic relationship with time (Table 4).
The addition of DSC covariates improved the fit of the
baseline model but models with a capture technique term
were not competitive (Table 5). Model averaged coeffi-
cient for the technique term was $\beta_{\text{net}} = 0.002$ (95% CI =
$-0.214, 0.219$) and the odds ratio was $1.002$ (95% CI =
$0.807, 1.244$) indicating there was no difference in
Table 4. Baseline temporal models used to control for seasonal variation in survival of bobwhites captured with baited funnel traps and targeted mist-netting during October-February 2009–2011 in southwestern Ohio.

<table>
<thead>
<tr>
<th>Modela</th>
<th>k⁰</th>
<th>AICc</th>
<th>ΔAICc</th>
<th>wiᵦ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Across year quadratic time</td>
<td>3</td>
<td>624.28</td>
<td>0.000</td>
<td>0.385</td>
</tr>
<tr>
<td>Within year time</td>
<td>2</td>
<td>625.96</td>
<td>1.684</td>
<td>0.166</td>
</tr>
<tr>
<td>Null</td>
<td>1</td>
<td>626.39</td>
<td>2.111</td>
<td>0.134</td>
</tr>
<tr>
<td>Age</td>
<td>2</td>
<td>627.29</td>
<td>3.014</td>
<td>0.085</td>
</tr>
<tr>
<td>Across year time</td>
<td>2</td>
<td>627.43</td>
<td>3.148</td>
<td>0.080</td>
</tr>
<tr>
<td>Year + within year time</td>
<td>3</td>
<td>627.82</td>
<td>3.544</td>
<td>0.065</td>
</tr>
<tr>
<td>Year</td>
<td>2</td>
<td>628.28</td>
<td>4.005</td>
<td>0.052</td>
</tr>
<tr>
<td>Year + age</td>
<td>3</td>
<td>629.26</td>
<td>4.983</td>
<td>0.032</td>
</tr>
</tbody>
</table>

a Time = linear trend increasing from 1.

b k = number model parameters; AICc = Akaike's Information Criteria corrected for small sample sizes; ΔAICc = change in AICc from lowest model; wi = Akaike’s weight.

The model averaged coefficient for the 7 DSC covariate was \( b = 0.002 \) and for the 14 DSC covariate was \( b = 0.119 \) respectively; Table 5. The model averaged coefficient for the 21 DSC covariate was \( b = -0.049 \) (95% CI = -0.095, -0.002).

**DISCUSSION**

Targeted netting was a versatile technique that we used effectively in situations where traditional bobwhite capture techniques were ineffective or not feasible. The high ranking of the DSC covariate models and the negative coefficients illustrates there was a short-term effect of capture, handling, or radiomarking in this study but odds ratio near 1 showed there was no difference in post-capture survival among the 2 capture techniques. Low ranking of the models with a technique by days since capture (DSC) interaction term also demonstrated the influence of capture was consistent among the 2 techniques. There was a short-term influence of capture and handling, but there were no significant differences in post-capture survival of bobwhites captured by targeted netting or in baited funnel traps. Targeted netting was unbiased in capture rates of age or sex classes. Targeted netting may have advantages over trapping in some situations because it provides a more accurate estimate of individual body mass (not biased by bait consumption) and can be used to quickly target specific individuals.

Targeted netting exploits the flushing behavior and flight characteristics of bobwhites. The tendency for bobwhites to remain motionless within concealing cover when approached allowed time to place nets near their position. The average maximum height of bobwhite flight is fairly low (2.4 m; Kassinis and Guthery 1996; Schorger 1946) observed that bobwhites in flight are generally incapable of avoiding objects with unnatural dimensions. The flight path of a flushing covey was typically through pathways free of obstruction in the direction opposite the position of a pointing dog or approaching investigator. Flight was often toward patches of dense vegetation in areas with patchy or fragmented cover and parallel to nearby woody cover (e.g., fence-rows, woodlot edges). The generally predictable nature of bobwhite flushing directions coupled with their low and straight flight trajectories made targeting netting effective in areas with linear features. Flight path was generally less predictable within homogenous cover (e.g., grasslands).

The most common reason for failed net attempts, flight away or to the side of nets, was due in part to incorrect predictions of flight path or inability to place nets in the most likely flight path due to physical obstacles or natural vegetation.


<table>
<thead>
<tr>
<th>Modela</th>
<th>k⁰</th>
<th>AICc</th>
<th>ΔAICc</th>
<th>wiᵦ</th>
</tr>
</thead>
<tbody>
<tr>
<td>TT + 7 DSC</td>
<td>4</td>
<td>619.87</td>
<td>0.000</td>
<td>0.275</td>
</tr>
<tr>
<td>TT + 14 DSC</td>
<td>4</td>
<td>620.68</td>
<td>0.807</td>
<td>0.183</td>
</tr>
<tr>
<td>TT + 21 DSC</td>
<td>4</td>
<td>621.75</td>
<td>1.873</td>
<td>0.108</td>
</tr>
<tr>
<td>TT + Technique + 7 DSC</td>
<td>5</td>
<td>621.86</td>
<td>1.989</td>
<td>0.102</td>
</tr>
<tr>
<td>TT + Technique + 14 DSC</td>
<td>5</td>
<td>622.67</td>
<td>2.796</td>
<td>0.068</td>
</tr>
<tr>
<td>TT + 3 DSC</td>
<td>4</td>
<td>622.70</td>
<td>2.826</td>
<td>0.067</td>
</tr>
<tr>
<td>TT + Technique + 21 DSC</td>
<td>5</td>
<td>623.73</td>
<td>3.860</td>
<td>0.040</td>
</tr>
<tr>
<td>TT + Technique + 7 DSC + Technique x 7 DSC</td>
<td>6</td>
<td>623.86</td>
<td>3.992</td>
<td>0.037</td>
</tr>
<tr>
<td>TT</td>
<td>3</td>
<td>624.28</td>
<td>4.407</td>
<td>0.030</td>
</tr>
<tr>
<td>TT + Technique + 14 DSC + Technique x 14 DSC</td>
<td>6</td>
<td>624.39</td>
<td>4.520</td>
<td>0.029</td>
</tr>
<tr>
<td>TT + Technique + 3 DSC</td>
<td>5</td>
<td>624.68</td>
<td>4.808</td>
<td>0.025</td>
</tr>
<tr>
<td>TT + Technique + 21 DSC + Technique x 21 DSC</td>
<td>6</td>
<td>625.52</td>
<td>5.646</td>
<td>0.016</td>
</tr>
<tr>
<td>TT + Technique</td>
<td>4</td>
<td>626.25</td>
<td>6.378</td>
<td>0.011</td>
</tr>
<tr>
<td>TT + Technique + 3 DSC + Technique x 3 DSC</td>
<td>6</td>
<td>626.64</td>
<td>6.771</td>
<td>0.009</td>
</tr>
</tbody>
</table>

a TT = baseline temporal model; DSC = days since capture.

b k = number model parameters; AICc = Akaike's Information Criteria corrected for small sample sizes; ΔAICc = change in AICc from lowest model; wi = Akaike’s weight.
infrequent or brief visits to their property. Frequent trap
Hilty and Merenlender (2003) suggested landowners may
properties. Specific concerns included possible negative
frequency and duration of investigator presence on their
cooperating landowners in our study regarding the
protectionist attitudes (i.e., exclusive hunting rights, anti-
ceases (i.e., disruptive behavior, property damage) and
experiment with smaller mesh to capture chicks. We found the smaller
mesh nets, and recommend that future investigations
methods and across different habitat types. Success rates
pointing dogs and incidental contact were higher than for radiotelemetry. Our definition of a net attempt
excluded some causes of failure that were more common
with attempts with pointing dogs or incidental flushes,
which likely artificially inflated success rates. We were
more likely to flush bobwhites before nets were deployed
during capture attempts with pointing dogs or after
incidental flushes than when using radiotelemetry. We
occasionally failed to locate and flush any bobwhites after
net deployment for all methods except radiotelemetry.

One of the primary benefits of targeted netting was the
ability to capture bobwhites immediately after their
location was known. A single experienced investigator
could deploy a net within 5-20 m of bobwhites with
relative ease in 2–3 min. We typically kept nets in field
vehicles, furled and rolled on net poles, during daily
activities and carried rolled nets while actively searching
for coveys. This allowed us to take advantage of
opportunities when unmarked coveys were encountered
(i.e., dog pointing, incidental contact). Additionally,
we could attempt targeted netting at different locations on
several sites throughout the day, effectively spreading out
capture effort. The area in which a single investigator
could actively use funnel traps was restricted to that
which could be quickly covered during trap checks and
limited to only 1 site/day because of the distance between
sites in our study (≥ 7 km). The time-window for a trap
check at sunset was particularly narrow because traps
needed to be checked sufficiently late in the evening that
bobwhites were unlikely to be captured afterward, yet
sufficiently early that exposure of trapped bobwhites to
nocturnal predators was minimized. Releasing captured
bobwhites after sunset may predispose them to predation
(Palmer and Wellendorf 2007).

Use of baited funnel traps is a well-established and
effective capture technique for bobwhites, but we found it
incompatible with landowner concerns in certain situations.
Landowner acceptance is an important consideration
when planning and conducting research on private
land (Hilty and Merenlender 2003). Studies of recreational
access on private lands indicate negative experiences
(i.e., disruptive behavior, property damage) and
protectionist attitudes (i.e., exclusive hunting rights, antihunting beliefs) were primary reasons for access to be
denied (Stoddard and Day 1969, Brown 1974, Brown et
al. 1984). Parallel concerns were expressed by several
cooperating landowners in our study regarding the
frequency and duration of investigator presence on their
properties. Specific concerns included possible negative
effects of investigator presence during hunting seasons.
Hilty and Merenlender (2003) suggested landowners may
be more accepting of experimental designs requiring only
infrequent or brief visits to their property. Frequent trap
checks, particularly during the hunting season, increased
the likelihood of disturbing hunters or other recreational
activities. Netting however, was used effectively through-
out the day, allowing for more flexibility in our presence
on a particular property. Properties could be avoided
when hunters were present and accessed when the chances
of disturbing hunters were relatively low.

Bait provided for trapping may have biased body
mass estimates and may also have lingering effects on
behavior or survival. We observed that coveys with radio-
marked birds concentrated activities around bait piles
during pre-baiting and trapping periods, which may have
temporarily biased movements or survival (Robel and
Targeted netting captured individuals in situ and resulted
in a quick release into the cover in which quail were found
immediately prior to capture.

We found targeted mist-netting has applications
outside the non-breeding season, when traditional capture
techniques are generally less efficient (Wellendorf et al.
2002). We used targeted netting during summer to capture
calling males, individuals paired with radio-marked
bobwhites, and fledged young associated with a brooding
adult (M. R. Liberati, personal communication). Capturing
post-fledging young before separation from brooding
adults may merit additional research because of the
challenges presented in studying bobwhite chick survival
(Roseberry and Klimstra 1984). Smith et al. (2003) used a
wire fence erected around roosting radio-marked adults
tending a brood in which some or all chicks were captured
in 87% of capture attempts. This technique can be
effective, but it requires that chicks can not fly (1–12 days
post hatch) whereas we used targeted netting to capture
flying chicks ≥12 days of age with a radio-marked adult.
This technique could potentially provide an additional
recapture period for capture-mark-recapture studies that
use both chick-capture techniques. We found the smaller
chicks were more capable of passing through the 61-mm
mesh nets, and recommend that future investigations
experiment with smaller mesh to capture chicks.

MANAGEMENT IMPLICATIONS

Targeted mist-netting is an effective alternative to
traditional capture techniques, particularly when land-
owners place constraints on research activities, specific
individuals are to be targeted, accurate measurements
of body mass are required, or when traditional techniques are
otherwise not feasible. Mist nets are highly portable and
can be effective in all seasons. Researchers can quickly
capture individuals from multiple coveys within a
relatively short period of time using targeted netting in
conjunction with well-trained pointing dogs or radiote-
lemetry. Targeted netting may also provide an effective
capture technique for bobwhite chicks after they are able
to fly. Investigators could use targeted netting concur-
rently with baited funnel traps or other capture techniques
to optimize capture, particularly if their objective is to
quickly capture as many individuals as possible.
ACKNOWLEDGMENTS

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