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The Effectiveness of Individual Identification of Bobcats using Automatically Triggered Cameras in Michigan

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The Effectiveness of Individual Identification of
Bobcats using Automatically Triggered Cameras
in Michigan

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Abstract

Through the research of bobcat (*Lynx rufus*) populations a better understanding of their range in lower Michigan can be found. The use of automatically triggered cameras is an effective way to obtain bobcat range and status information. Automatically triggered cameras allow for population studies to be executed without having to trap any animals.

Introduction

Bobcats were once a species that was abundant throughout the United States and Southern Canada. As habitat loss and alteration increased the bobcat became less populous in the United States. In recent years the bobcat has begun making its way back into the lower peninsula of Michigan (Knopf, 2000).

Bobcats are solitary hunters that use the same hunting pathways repeatedly to obtain prey such as eastern cottontails (*Sylvilagus floridanus*), squirrels (*Sciurus spp*.), domestic cats (*Felis catus*) and other small to medium sized mammals. Bobcats are capable of killing white-tailed deer (*Odocoileus virginianus*), yet only do so when other prey options are scarce.

According to Heilbrun et.al.'s study, the use of automatically triggered cameras has proven an effective means of bobcat identification. Being able to individually identify bobcats will provide better evaluations of the population. Bobcats are one of a few species that has variation in color and patterns of the pelt (Heilbrun et.al.2003). Of seventy-six photographs taken, eighty-eight percent were used in individual identification of bobcats. Bobcats in northern regions tend to have light

colored spots on their coat which may make it more challenging to identify them individually (Rolley, 1987). A lower density of bobcats also could make gathering adequate numbers of images to generate a population estimate more challenging (Preuss and Gehring, 2006).

Bobcat studies using automatically triggered cameras to identify individual bobcats has only been done in Texas (Heilbrun et.al.,2003). There could be potential problems with individual identifications in Michigan due to the color variations across the range. Bobcats tend to be more grey in color the further north that they are. This color difference could negatively affect the results of individual identification (Knopf,1996).

Methods

Study Area

Trail cameras were placed on state land in Roscommon County in 5 locations. This study area included mixed deciduous and coniferous forests (105 acres total), wetlands, streams and were located around Houghton Lake. Dominant tree species in the area include tamarack (Larix laricina), trembling aspen (*Populus tremuloides*), big-tooth aspen (*P. grandidentata*) and white cedar (*Thuga occidentalis*).

Three cameras were placed in Isabella County on private land. The study area has mixed coniferous and deciduous forests (10 acres), 2 wetlands (2.5 acres each) and 2 agriculture fields (20 acres each). One agriculture field is used for corn and one for hay production. The dominant tree species in the area are white pine (*Pinus strobus*), red pine (*P. resinosa*), tamarack, sugar maple (*Acer saccharum*), white oak (*Quercus alba*), black oak (*Q. velutina*), swamp white oak (*Q. bicolor*), yellow birch

(*Betula alleghaniensis*) and white birch (*B. papyrifera*).

Equipment

We used HCO Scoutgaurd SG550 and Cuddeback Capture trail cameras. Both models are passive cameras which use an infrared flash for night pictures. Cameras were placed on wildlife trails that were associated with bobcat habitat. The cameras were programmed to take 3 pictures each time the camera was tripped by movement. We used a combination of olfactory and auditory lures to attract bobcats to the cameras. These techniques had been used in other studies with success.

Results

From mid July to the current date we have had a total of 1,210 pictures taken. Of those the majority were white-tailed deer, or pictures with no animals in them. There were a total of 19 pictures of bobcats. There have been six individual bobcats photographed. To date we have not captured enough images of bobcats to determine whether individual cats can be identified, or to develop a population estimate.

None of the lures that we used were effective in attracting bobcats. We found that the bobcats tended to avoid the cameras when scent placed in front of them or an auditory lure was present. Currently we are not using any lures. We have had more success with obtaining pictures of bobcats without lures.

Discussion/Future Research

A main concern with this study was the theft or tampering of cameras on public land. There were initially few cameras placed on public land to avoid theft and tampering. This reduced our chances of capturing pictures of bobcats, although we did not have any

cameras stolen or tampered with. Beginning in autumn 2009 we focused the placement of cameras on private land in Isabella County.

Camera trapping continued through the winter and will continue throughout the year in 2010. This gives more opportunity to collect sufficient images to determine whether individuals can be identified and to develop a population estimate in the study area.

Through experimentation with camera location and orientation we are obtaining more pictures of bobcats. We also plan to try new techniques for attractants such as staking whole chicken or turkey in front of the cameras or placing cotton batting near the cameras to mimic a rabbit's tail. With continued effort we feel that we can obtain enough data to identify individual bobcats, and get an approximate estimate on the population.

Literature Cited

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