

# American Bittern Survey

1994

by

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and  
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The American bittern (*Botaurus lentiginosus*) is a species of special concern in Minnesota. Special concern species are those that are "...extremely uncommon in Minnesota, or have unique or highly specific habitat requirements and deserves careful monitoring of its status," (Coffin & Pfannmuller, 1988). American bitterns are listed as endangered in Illinois, Indiana, and Ohio and rare in Missouri of the midwestern states (Hands, et. al., 1989). Bitterns feed and nest in shallow wetlands and have likely been affected by wetland drainage and the loss of native prairies. There is very little information about the American bittern population in Minnesota. For these reasons a survey of the occurrence of this species was initiated in the forested part of the state.

#### METHODS

Natural resource managers recorded American bittern calls heard while making ruffed grouse (*Bonasa umbellus*) drumming counts in the forested areas of the state. Each route is at least 10 miles long with 10 stops per route. (Appendix I). The state is divided into five different count areas (Figure 1). The raw data from these counts are on file with the DNR Forest Wildlife and Populations Research Group in Grand Rapids.

#### RESULTS

A total of 119 routes (1,190 miles) were completed, and a total of 215 bitterns were heard (Table 1). Bittern calls were heard on 51 (43%) of the 119 routes. Examining American bittern numbers by grouse count area, the observers in the northwest

recorded hearing bitterns most frequently (94% of routes). In the north and northeast bitterns were heard on 41% and 45% of the routes, respectively. Information from the breeding bird survey from 1966-1987 showed .81 bitterns/route (n=39) (Hands, et. al., 1989). In this survey the average was 1.81 bitterns/route. The northwest area of the state is a mix of wetland, grassland, and forest habitats. This may account for the high occurrence of bitterns here. Bitterns are present in the heavier, forested region (north and northeast), but apparently at a lower frequency. The low percent of routes where bitterns were heard in the central hardwood area may be due to habitat changes in this part of the state where many of the wetlands and grassland areas have been altered. No bitterns were heard in the southeastern area, and this may reflect a lack of suitable habitat.

#### RECOMMENDATIONS

Record bitterns heard on ruffed grouse drumming count routes in 1995. After completion of the 1995 counts, determine whether these counts should be continued.

#### Literature Cited

Coffin, B. and L. Pfannmuller, 1988.

Minnesota's Endangered Flora and Fauna. University of Minnesota Press, Minneapolis, 473 pp.

Hands, H.; R. Drobney; and M. Ryan, 1989.

"Status of the American Bittern in the Northcentral United States," U.S. Fish and Wildlife Service Report, 13 pp.

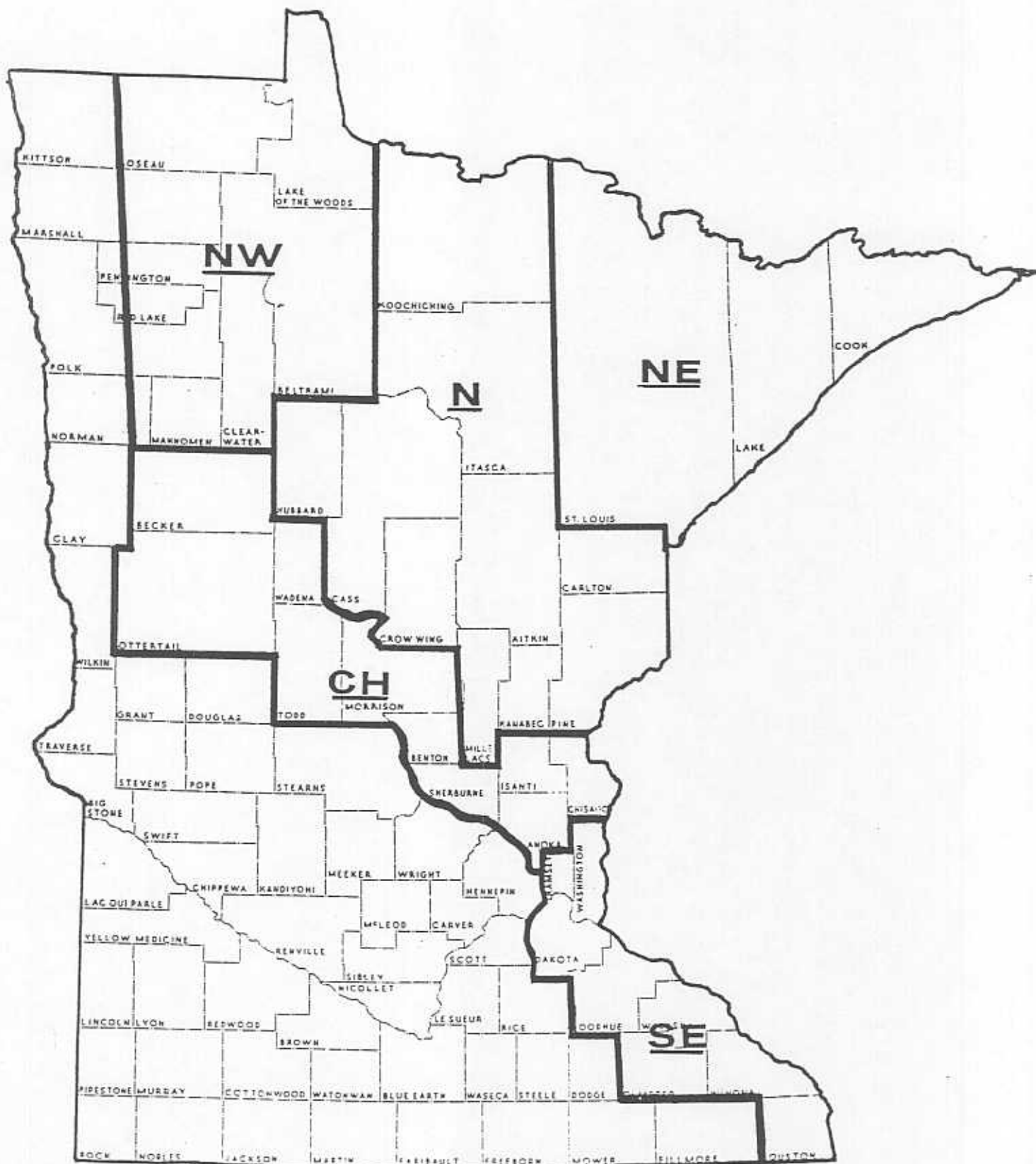


FIGURE 1. Grouse Drumming Count Areas

TABLE 1. American Bitterns Counted on Ruffed Grouse Routes

|                      | Number of<br>Bitterns<br>Recorded | Number of<br>Routes with<br>Bitterns<br>Heard | Number of<br>Routes | % Routes<br>with Bitterns |
|----------------------|-----------------------------------|---|---------------------|---------------------------|
| Northeast            | 26                                | 13  | 29                  | 45%                       |
| North                | 36                                | 19  | 46                  | 41%                       |
| Northwest            | 143                               | 16  | 17                  | 94%                       |
| Central<br>Hardwoods | 10                                | 3   | 9                   | 16%                       |
| Southeast            | 0                                 | 0   | 8                   | 0%                        |
| <u>TOTALS</u>        | 215                               | 51  | 119                 | 43%                       |

## INSTRUCTIONS

1. Run the route on a calm morning during what you believe to be the peak of the drumming period, usually within the following suggested dates. Run the route outside of these dates if the drumming peak occurs much earlier or later than normal.

| <u>Inclusive Dates</u> | <u>Area</u> | <u>Time</u>                         |
|------------------------|-------------|-------------------------------------|
| April 8-30             | South       | Begin counts shortly after sunrise. |
| April 15-May 5         | Central     |                                     |
| April 20-May 10        | North       |                                     |


2. The temperature should be between  $-4$  and  $+5^{\circ}\text{C}$  ( $25-40^{\circ}\text{F}$ ). Otherwise, make your own decision on census conditions. Avoid mornings with wind or precipitation, or when snow coverage exceeds 50%. Fog is permissible.
3. Make a four minute stop. Record exact speedometer reading. Walk 15-20 feet from the car for listening. Count total drums. Record data. Record cover type and size at stop (for example, pole-sized aspen, or alder thicket), if not done in a previous year.
4. Record pertinent phenological and snowshoe hare data.
5. Record weather and census conditions as precisely as possible.
6. Return one completed form for each route to Forest Wildlife Population and Research Group, 1201 East Highway 2, Grand Rapids, MN 55744.
7. Send one copy of each route form to your Supervisor, and keep a third copy for your file.
8. When setting up a new route, choose a back road, preferably graveled, which has little traffic. Establish ten stops in what is apparently good ruffed grouse habitat and mark each stop on a tree, fence post, or power pole with a painted permanent number. Each stop to be not less than one mile apart but it can be more depending upon habitat. Prepare two maps of route, sending one with your forms and keeping one for your file. Give each route a name. A number will be given later.

## APPENDIX I.

DEPARTMENT : Natural Resources - Wildlife

STATE OF MINNESOTA

SF-00006-05 (4/86)

Office Memorandum 

DATE : March 15, 1994

TO : Ruffed Grouse Drumming Survey Cooperators in Region II

FROM : Jeff Hines  
Nongame Wildlife Technician

PHONE : 218/327-4267

SUBJECT : AMERICAN BITTERN CALLS

For the next two years, we will try and use the ruffed grouse survey routes to get an idea of American bittern distribution throughout the region. At this time, I am copying topo maps and will send out a copy to each of you to mark locations of where you hear American bitterns along the grouse survey routes.

I am digitizing the ruffed grouse survey routes and plan to look at these in relation to the wetland inventory maps to get an idea of habitat and where bitterns are found throughout the region.

The Nongame Program received \$1000 from LCMR to get this information. We transferred the money to Ken to help pay for part of the fleet charges incurred while helping us with this project.

Thank you for your help and cooperation with this project.

JH:sk

APPENDIX I. (con't.)