

1994-2004



Minnesota Frog & Toad Calling Survey (MFTCS)

NONGAME WILDLIFE PROGRAM

2004 Results

The Minnesota Frog and Toad Calling Survey (MFTCS) was developed in response to concern over the potential for population declines in Minnesota's fourteen frog and toad species. The MFTCS uses the USGS's North American Amphibian Monitoring Program (NAAMP) methods, which are designed to detect trends in the state's frog and toad populations over time. The results of this ongoing study will provide information on where species are located throughout the state, and how their populations change in abundance and distribution. Many frog and toad species are indicators of habitat quality. Their presence in, or disappearance from, an area may provide information on the condition of Minnesota's wetland habitats.

The MFTCS owes its ongoing growth and success to a large base of participants from throughout the state. Without the interest and dedication of these generous volunteers, this project would not be possible. We want to thank them, and provide this report to demonstrate how their efforts are contributing valuable information that will help manage Minnesota's natural resources.

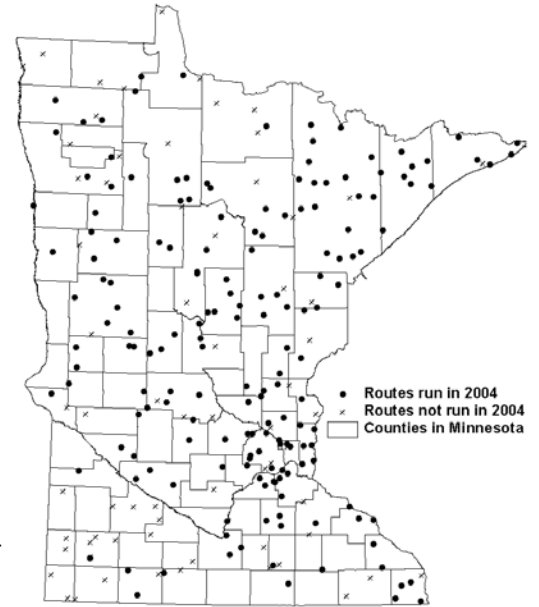


Figure 1. MFTCS Routes 2004.

Methods

Before the annual survey season begins, every volunteer is assigned a route and is provided with instructions, route maps, survey route descriptions, and field datasheets. New volunteers are given the *Call of Minnesota's Frogs and Toads* cassette tape or CD. Each route is run three times within designated time periods ("early spring," "spring," and "summer") to encompass the variation in calling periods among frog and toad species. Surveys are run after dark, under favorable weather conditions (water temperature is above a preferred minimum value, and wind is less than 8 mph). Frog calls are noted at each stop (10 stops/route, stops are a minimum distance of 0.5 miles apart). Volunteers listen at each stop for at least 5 minutes to distinguish all of the frog and toad calls heard, and record their data on the field datasheet.

Rare or unusual records such as the endangered northern cricket frog or species outside of their distribution range are tagged for verification by tape recording, testimony of 2 experienced observers, or a photo. Unusual calls that are not verified may not be counted. Once the route has been completed for all three runs, the datasheets and maps are sent to the Nongame Wildlife Program of the Minnesota Department of Natural Resources (DNR) to be compiled and analyzed.

This year, statistical trend analyses were performed on the 1998-2004 data (excluding the 1994-1997 data due to the small sample size of routes surveyed during that time period). Trends were assessed statewide, as well as within each of the four Ecological Classification System (ECS) Provinces in Minnesota (Fig. 2). The ECS Provinces were used since they delineate Minnesota's major ecological regions, and many of Minnesota's frog and toad species distribution ranges follow these boundaries.

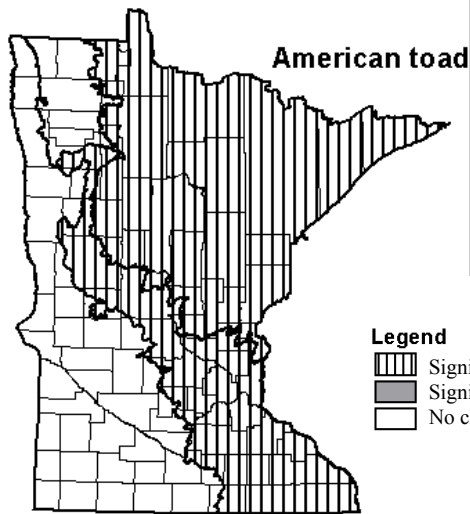


Figure 2. The four ECS Provinces in Minnesota.

Results

In 2004, 233 routes were assigned to volunteers, and we received data sheets for 179 of these routes (Fig. 1). The routes that were run in 2004 were distributed statewide, although we are still lacking volunteers in the southwestern part of the state. Thirteen of the fourteen species of Minnesota's frogs and toads were heard on at least one route in 2004; the only species not heard and verified was the endangered northern cricket frog.

There were no trends observed statewide in species heard within the MFTCS. However, significant trends were found for five Minnesota species within one or more of the four ECS Provinces (Figs. 3-7).



Trends in frog & toad species heard during the MFTCS 1998-2004.

Legend
 [Vertical hatching] Significant increase in locations where heard 1998-2004
 [Gray shading] Significant decrease in locations where heard 1998-2004
 [White] No change 1998-2004

Figure 3. An increase in locations where American toads were heard was detected in both the Laurentian Mixed Forest and the Eastern Broadleaf Forest Provinces.



Figure 4. A decrease in locations where gray treefrogs were heard in the Eastern Broadleaf Forest Province was detected.



Figure 5. A decrease in locations where spring peepers were heard in the Eastern Broadleaf Forest Province was detected.

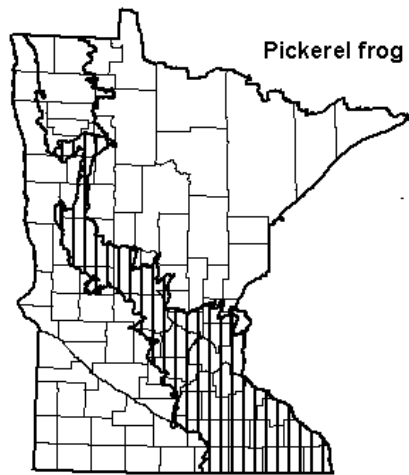


Figure 6. An increase in locations where pickerel frogs were heard was detected in the Eastern Broadleaf Forest Province.

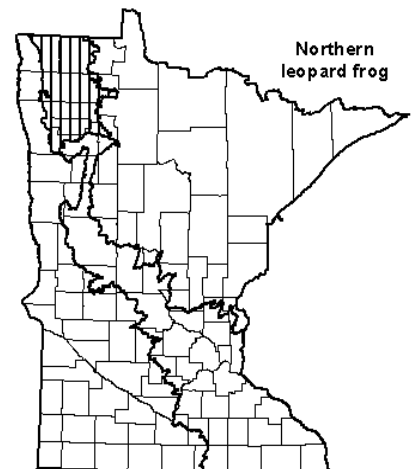


Figure 7. An increase in locations where northern leopard frogs were heard in the Tallgrass Aspen Parkland Province was detected.

In Summary....

The MFTCS is now accumulating enough data to detect trends in species heard. There have been no changes statewide to our thirteen species, although both positive and negative trends among five species have been detected within several ECS provinces. As additional years of data are collected on routes run repeatedly, our ability to detect statewide population trends will increase. There are many possible explanations for the trends described in this report including volunteer experience increasing over the years, and changes in phenology of the species with our variable weather patterns. Additional years of data will either confirm or correct these trends.

Acknowledgements....

THANK YOU MFTCS VOLUNTEERS!!!

We extend our heartfelt thanks to the hundreds of volunteer observers who continue to make the MFTCS a success. Without your persistence and hard work, the DNR would be without a means of reporting on the health of our frog and toad populations. We and Minnesota's amphibians appreciate your commitment!

The MFTCS is supported by contributions to the Nongame Wildlife Checkoff on your Minnesota tax form. We would also like to thank the Minnesota Herpetological Society for assisting with funding of the MFTCS.



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