

Minnesota Frog & Toad Calling Survey

1994 — 2006

NONGAME WILDLIFE PROGRAM
MINNESOTA DEPARTMENT OF NATURAL RESOURCES



The Minnesota Frog and Toad Calling Survey (MFTCS) was developed in response to concern over potential population declines in Minnesota's fourteen frog and toad species. The MFTCS uses the North American Amphibian Monitoring Program (NAAMP) methods, which are designed to detect trends in the states frog and toad populations over time. Trend analyses with multiple years of data help adjust for differences resulting from abnormal weather years.

Atypical spring weather in the past two years has produced survey results that are difficult to interpret. An early spring caused frogs to begin calling earlier than normal, and subsequent cold spells and areas of drought likely silenced the frogs and toads in some areas. These unpredictable weather patterns could be the result of global climate change, and may lead to adjusting the survey periods in the MFTCS.

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* 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.

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

Statistical trend analyses were performed on the 1998-2006 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. 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.

This was the first year NAAMP required volunteers to take an online frog and toad call identification quiz. Volunteers can take the quiz repeatedly until they reach a passing score of 65. The quiz only includes frog species which may occur on their route. Although we observed a slight drop in returned data sheets (possibly due to this new requirement), the vast majority of volunteers who did take the quiz passed, and also provided overall positive feedback that the quiz was a useful annual "refresher" tool.

Results

In 2006, 156 routes were run and the corresponding data sheets were returned to the Nongame Wildlife Program (Fig. 1). These routes were distributed statewide, and the MFTCS owes its ongoing growth and success to its large base of participants from throughout the state. Without the interest and dedication of these generous volunteers, this project would not be possible.

While atypical weather makes interpretation difficult, statewide population trends may be emerging for three species (Fig. 2):

Spring peeper and gray treefrog— There was an apparent decrease in the proportion of stops at which the gray treefrog and spring peeper were heard statewide. As of 2005, the observed decline in both of these species was limited to the Eastern Broadleaf Forest Province. With the addition of 2006 data, these trends now appear to be statewide.

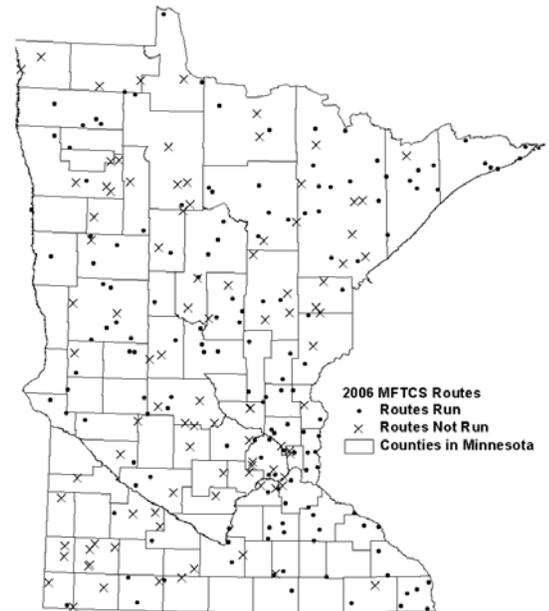
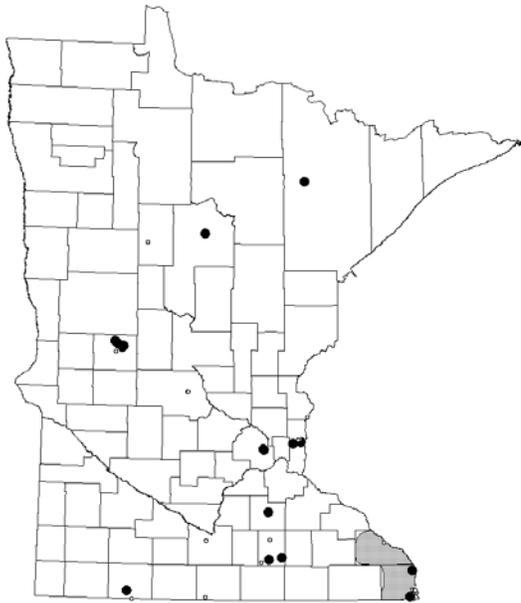
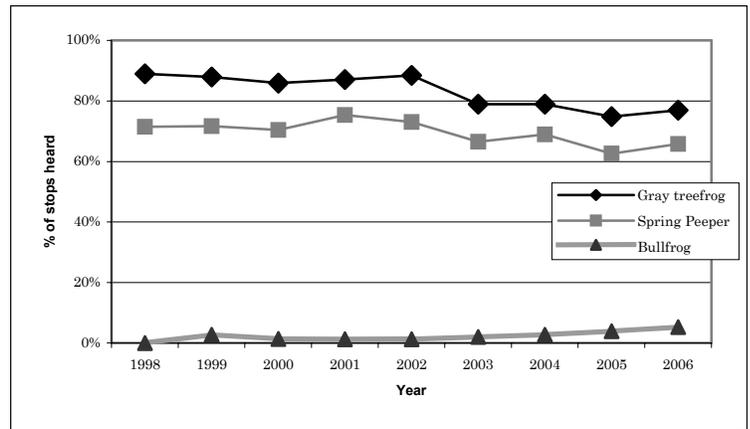


Figure 1. MFTCS route locations.

American bullfrog* - The American bullfrog was the only species to be heard in significantly more places statewide. This species is considered invasive everywhere in the state except for its native range in the southeastern corner of the state (Fig. 3).

Figure 2. Percent of stops at which selected species were heard statewide in the MFTCS 1998-2006.



- 2006 Bullfrog reports
- pre-2006
- NHIS Records (Pre-2006)
- Counties in Minnesota
- Bullfrog historic range

Figure 3. American bullfrog records in Minnesota.

In Summary

The MFTCS is now accumulating enough data to detect statewide trends in species heard. As additional years of data are collected, our ability to detect statewide population trends will increase in accuracy. There are many possible explanations for the trends described in this report including volunteer experience increasing over the years, habitat changes, and as we mentioned, the atypical weather. Additional years of data will allow us to reevaluate these observed trends.

*A Note on Bullfrogs in Minnesota...

Bullfrogs are only native to the southeastern corner of Minnesota. Over the past few years, new populations have been reported in other areas of the state (Fig. 3). Biologists are concerned: bullfrogs are larger than any of our native frog and toad species, are known to be voracious eaters that will eat almost anything (including other frogs and toads), and can harm native frog and toad populations through predation and competition.

With the spreading popularity of backyard ponds and water features, it has come to our attention that aquarium and landscaping stores have begun to sell bullfrog tadpoles for backyard ponds. Please note that in Minnesota, it is illegal to sell bullfrogs without a DNR license, and no such licenses have been issued to these types of businesses to date.

Acknowledgements....

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 or you can donate online at: http://www.dnr.state.mn.us/ecological_services/nongame/checkoff.html

We would also like to thank the **Minnesota Herpetological Society** for assisting with funding of the MFTCS.

WE ARE LOOKING FOR MFTCS VOLUNTEERS! The 2007 survey begins on April 15th!

Every year we have available MFTCS routes, so if you are interested in volunteering, please check our website in February through April for route availability at:

http://www.dnr.state.mn.us/volunteering/frogtoad_survey/index.html

Or contact:

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