

1994-2009

2009 Survey Results



Minnesota Frog & Toad Calling Survey (MFTCS)

NONGAME WILDLIFE PROGRAM

For the past two decades there has been a growing concern over amphibian population declines worldwide. In Minnesota, our response was to develop the Minnesota Frog and Toad Calling Survey (MFTCS) in 1994 to monitor frog and toad populations throughout the state. The MFTCS uses the US Geological Survey's North American Amphibian Monitoring Program (NAAMP) protocol, and contributes Minnesota's data to NAAMP's U.S. monitoring program.

As in the past several years, weather conditions were abnormal in 2009, with heavy snow throughout much of Minnesota in mid-April and prolonged cold temperatures in spring and summer that may have affected the frog and toad calling periods this year. As a result, some species may have called for shorter periods at atypical times and may have been missed by the MFTCS's survey intervals. These phenomena produce survey results that continue to be difficult to interpret.

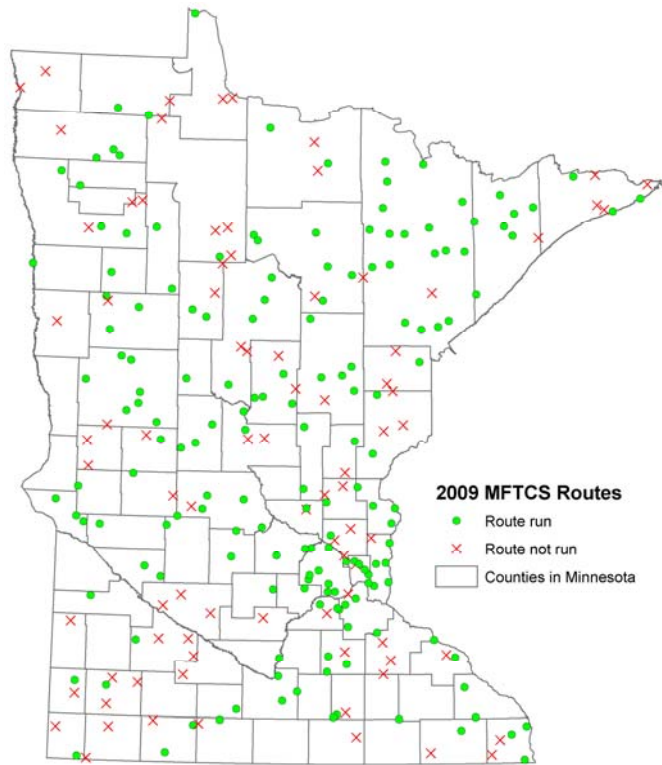


Figure 1. MFTCS routes surveyed in 2009.

Methods



Figure 2. The four ECS Provinces in Minnesota.

Before the annual survey begins, volunteers are assigned a route (Fig. 1), provided with instructions, route maps, route descriptions, and field data sheets, and are asked to complete NAAMP's online frog and toad call identification quiz. This quiz can be taken until a passing score is reached and only includes species that may occur on their route. New volunteers are given the *Calls of Minnesota's Frogs and Toads* CD. Each route is run three times within designated periods (early spring, late 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 calls of all the frog and toad species heard, and record their data on the field data sheet.

Once the route has been completed for all three runs, the data sheets and maps are sent to the MFTCS Volunteer Coordinator 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 two experienced observers, or a photo. Unusual calls that are not verified may not be counted.

Statistical trend analyses were performed on the 1998-2009 data (the 1994-1997 data were excluded due to the small sample size of routes surveyed during that time period). Trends were assessed statewide as well as within each of the Ecological Classification System (ECS) Provinces of Minnesota (Fig. 2). The ECS Provinces were used since they delineate Minnesota's major ecological regions, and the distribution of many frog and toad species follow these boundaries.

Results

In 2009, 168 routes were run and the corresponding data sheets were returned to the MFTCS Volunteer Coordinator (Figure 1). These routes were distributed statewide, which demonstrates how the MFTCS benefits from its large base of volunteers.

While another year of atypical weather makes interpretation difficult, statewide population trends continue to be statistically significant for three species: the gray treefrog (*Hyla versicolor*), spring peeper (*Pseudacris crucifer*), and American bullfrog (*Rana catesbeiana*) (Figure 3).

Spring peeper and gray treefrog –

Survey results indicate a detectable decrease in the proportion of routes where the gray treefrog and spring peeper were heard statewide between 1998 and 2009.

American bullfrog –

The American bullfrog is the only species that has increased in the proportion of route locations heard statewide during the period 1998-2009. This species is considered invasive everywhere in the state except for its native range in the southeastern corner of the state.

No statewide trends were detected in the other 11 species of frogs and toads in Minnesota, indicating that populations of these species are stable.

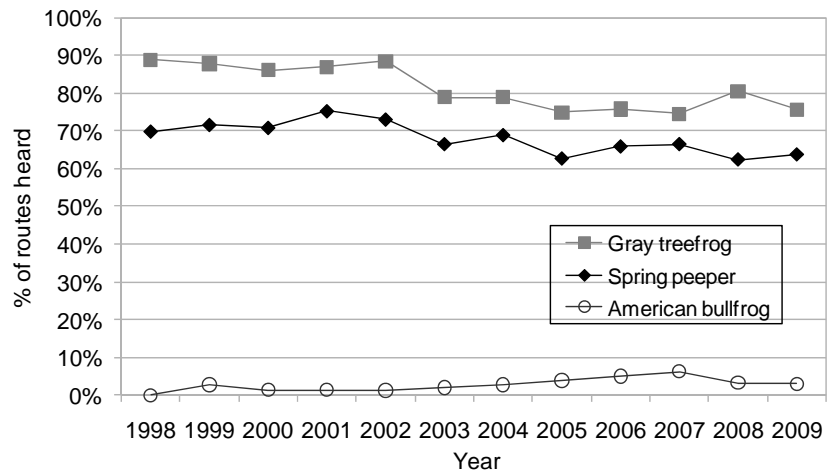


Figure 3. Trend in frog and toad reports for three species in Minnesota during the 1998-2009 MFTCS.

In Summary...

The MFTCS is an important, volunteer-based monitoring program that is beginning to detect trends in Minnesota's frog and toad populations. Through NAAMP, our data will also help identify region-wide population trends in North America. We are very proud of the growth and success of the MFTCS, and of the citizen scientists that are participating as volunteers. The data provided by the MFTCS are helping us identify potential threats to Minnesota's ecosystems, such as the spread of the American bullfrog across the state. With additional years of data, the DNR will be better able to make informed resource management decisions that address the trends in our frog and toad populations identified by the MFTCS.



THANK YOU MFTCS VOLUNTEERS!!!

We extend our heartfelt thanks to the hundreds of volunteers 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 the State Wildlife Grants program and by contributions to the Nongame Wildlife Checkoff on your Minnesota tax form. You can donate online at: <http://www.dnr.state.mn.us/eco/nongame/checkoff.html>

WE ARE LOOKING FOR MFTCS VOLUNTEERS!

Every year we have available MFTCS routes, so if you are interested in volunteering, please check our website for volunteer information, route availability, previous reports, and other resources on Minnesota's frogs and toads at: http://www.dnr.state.mn.us/volunteering/frogtoad_survey/index.html

Or contact:

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The 2010 MFTCS survey begins on April 15th!