Minnesota Frog & Toad Calling Survey (MFTCS)
Minnesota Dept. of Natural Resources' Nongame Wildlife Program

INSTRUCTIONS

Background and Purpose:

In recent years, observers have been concerned not only with the global decline of amphibian populations, but also with changes in frog and toad populations around the United States. Scientists worldwide are concerned about these declines because amphibians are shown to act as bio-indicators of environmental health.

The North American Amphibian Monitoring Program (NAAMP) developed a set of standards to help monitor amphibian populations around the United States. The standards were further developed into monitoring programs, including the Minnesota Frog and Toad Calling Survey (MFTCS). The NAAMP frog calling survey is an international effort to track the health of frog populations in Canada, the United States, and hopefully soon in Mexico. For more information on the NAAMP, please visit their web site at:
http://www.pwrc.usgs.gov/naamp/

The MFTCS was initiated to increase the knowledge of the abundance and distribution of the fourteen frog and toad species found in Minnesota and to monitor population changes around the state, using NAAMP protocol. NAAMP has developed a series of random, pre-established routes across Minnesota that include a variety of habitats, such as wetlands, forests and grasslands. Each route consists of ten wetland (breeding) sites, which are visited three times annually (early spring, late spring, and summer) by volunteer observers. At each site, the observer identifies the species present by their breeding season calls and makes an estimate of the abundance of each species using "call index" values of 1, 2, or 3.

The MFTCS has a website: http://www.dnr.state.mn.us/volunteering/frogtoad_survey/index.html, where you can download new datasheets, route description forms, past reports, or just find out more general information about the MFTCS.

SURVEY INSTRUCTIONS

Please note: if you are surveying a new route, please consult the "Surveying a New Survey Route" sheet before following these instructions.

1. Make sure you have all of the survey materials. If this is the first time you have run a MFTCS route, the following materials should be included in your survey packet. If any of these materials are missing, please contact the survey coordinator:

- Survey instructions
- Volunteer Agreement form
- Frog Quiz instructions
- Sample forms
- Route maps for your route
- Route description for your route
- Field data sheet
- Blank route description form
- Dashboard card
- Data Entry Instructions
- '*Toads and Frogs of MN and Their Habitats*' poster (given to new surveyors only)
- '*Call of Minnesota's Frogs and Toads*' CD (given to new surveyors only)

2. Know the calls, phenology, and general ranges of Minnesota frogs and toads. New and experienced observers will find it helpful to review the 'Calls of Minnesota's Frogs and Toads' CD periodically, and to take it along during surveys to help identify uncertain calls. As of 2006, NAAMP implemented a "frog quiz" that should be completed online at their website (http://www.pwrc.usgs.gov/frogquiz/) to test your listening skills every spring before you do your survey. New observers can learn the calls gradually by starting with those species that may be calling during the early spring survey period (Wood Frog, Spring Peeper, Northern Leopard Frog, Western Chorus Frog, and Pickerel Frog) followed by those species that begin calling in late spring (the three toads, Northern Cricket Frogs and both treefrogs), and finally by those species that begin to call during the summer (Mink Frog, Green Frog, and Bullfrog). It is highly recommended that new observers practice distinguishing calls in the field with the help of a more experienced observer. Generalized species distributions can be found on the back of the "Toads and Frogs of Minnesota and their Habitats" poster. Additional information on frog and toad natural history is available in the book *Amphibians and Reptiles Native to Minnesota* by Oldfield and Moriarty. This book should be available at your local library.

3. Maintain one or more alternate observers who you feel will be able to produce results comparable to yours should you not be able to run the survey. The alternates should accompany you on the survey periodically and be familiar with the calls, route, and procedure.

4. Run the route 3 times, once during each designated period. The timing of the survey with the phenology of frog calling is essential. Data collected from outside the designated survey periods is difficult to interpret and impossible to compare between years or areas. In most areas, failing to make one of the three survey runs or failing to survey all ten sites will severely limit or invalidate the entire year's data. In addition, consider minimum water temperatures, especially for the early spring survey period. The dates of the first survey run may be variable due to the differences in snowmelt in northern and southern Minnesota. As of 2004, we have established different run dates for routes in Northern Minnesota (***Northern counties include:*** *Beltrami, Carlton, Clearwater, Cook, Itasca, Kittson, Koochiching, Lake of the Woods, Lake, Mahnomen, Marshall, Norman, Pennington, Polk, Red Lake, Roseau, and St Louis. The area also includes the northern half of Aitkin, Cass, and Pine counties).*

Survey period	Run Dates	Northern Route Run Dates	Minimum H_2O Temp	Minimum Air Temp
Early Spring	April 15-30	April 25 – May 15	50ºF (10ºC)	42ºF (5.6ºC)
Late Spring	May 15-June 5	May 30 – June 15	60ºF (16ºC)	50ºF (10ºC)
Summer	June 25-July 10	July 5 - July 20	70ºF (21ºC)	55ºF (12.8ºC)

SAFETY CONSIDERATIONS:

- It is recommended that you wear a highway safety vest (with reflector material) during the survey, particularly if you are on a highly trafficked road. Do a search on the internet for information and options on where you can purchase one.
- We also recommend that you go out with a partner during your survey for safety reasons. Your partner can assist you on the survey by taking environmental information (e.g., air temperature) and counting passing cars while you perform your 5-minute listening survey.
- Please use your own judgment and terminate the survey if you feel like your safety is threatened in any way.

To increase your safety and visibility when parking your vehicle alongside the road:

- Always park with the traffic on the right side of the road, off of the traffic lane on the shoulder.
- Avoid parking on the crest of a hill or on a blind corner
- Use your four-way flashers or warning lights when driving slower than traffic
- Point tires of parked vehicle toward ditch if not parked on a hill so rear end collision will not send vehicle into people in front of vehicle.

5. Run surveys after dark, under favorable conditions. A survey may begin 30 minutes after sunset or later. No matter what time a route is started, it should be completed by 1 a.m. Choose an evening when water and air temperatures are above the minimums statewide and when wind is less than 8 mph. Warm, cloudy evenings with little or no wind and high humidity (even drizzly) are ideal. Humidity and cloud cover are not critical, but temperature is; a sudden drop in air temperature will cause most anurans to cease calling. If part way through a survey run you find that conditions deteriorate significantly (e.g., rain begins, temperature drops, or wind increases), stop the survey and complete it at the soonest opportunity (within 2-3 days if possible). Please make note of these conditions.

6. Describe your route. Mark the precise locations of your ten sites on the assigned maps, and describe each listening point and wetland on the "survey route description" form. It is important that we have accurate, current information about each of the survey routes.

7. Listen for 5 minutes for calls at each site. Approach a listening point so as to cause minimal disturbance. The arrival of a car or a person on foot may cause frogs to stop calling for a short time. When the frogs start calling again, listen for five minutes. **Listen to all calls audible from your listening point, not just those emanating from a particular pond or side of the road.** Some calls may be drowned out by other calls, especially by the full chorus of Spring Peepers or Chorus Frogs. Where you suspect this to be the case, and after carefully listening and recording your initial data, you may try to silence the chorus by making a loud noise with the car horn, door or by voice. Listen for the less conspicuous species as the calling gradually resumes. If there is a major noise disturbance, lasting one minute or longer, you may break the listening period to avoid sampling during the excessive noise. If such a time out is taken, please note it in the comments section on the datasheet. Resume the listening period finishing up with the remaining time after the major disturbance ends. The time out should not be used for background noise, such as traffic. A tape recorder will enable you to record questionable situations that can be listened to and confirmed at a later time or date.

8. Record your observations on the field data sheet. Completely fill out the field data sheet including county, route number, date, observers' names and addresses, weather conditions, air temperature, if you can see the moon (at any phase) from the stop (yes/no), # of cars passing during your 5 minute stops, if there is any distracting noise at any of the stops (yes/no), time, changes in habitat since previous visits, and additional comments on noise levels, such as attempts to silence loud choruses.

Record the call index value for each species heard according to the following:

- **1:** Individuals can be counted with space between calls
- **2:** Calls of individuals can be distinguished but there is some overlapping of calls
- **3:** Full chorus. Calls are constant, continuous, and overlapping.

9. Verify records of rare or unusual occurrences. Verification is required for Cricket Frogs and for records of other species found outside their previously documented range as indicated by the range maps on the poster. **Verification can be accomplished by: a) an audio recording, b) testimony of two experienced observers, or c) a photo**. After an observer has verified the record, future records of the particular species in that area may not be required. Please notify the MFTCS coordinator with your findings as soon as possible after the observation.

10. Enter your survey data into NAAMP database (optional). If you would like to enter your own survey data into the NAAMP database, please refer to the "Data Entry Instructions" handout in your survey packet. Data should be entered immediately following each run while the survey information is still fresh in your mind – you do not need to wait until the end of the season when all three runs have been completed. Datasheets must still be sent to DNR.

11. Return your data sheet, map and route description by August 1st to the Minnesota DNR. Make one copy of the materials for your records and mail the original to:

Minnesota Frog and Toad Calling Survey
Attn: MFTCS coordinator
Minnesota DNR
500 Lafayette Rd., Box 25
St. Paul, MN 55155-4025

If you have questions about the survey, please contact:
Lecia Babeu
(651) 259-5129
lecia.babeu@state.mn.us

Thanks for your help!

Table 1. **Frogs and Toads of Minnesota**

FROGS AND TOADS OF MINNESOTA	
Acris crepitans	Northern Cricket Frog
Bufo americanus	American Toad
Bufo cognatus	Great Plains Toad
Bufo hemiophrys	Canadian Toad
Hyla chrysoscelis	Cope's Gray Treefrog
Hyla versicolor	Gray Treefrog
Pseudacris crucifer	Spring Peeper
Pseudacris maculata	Boreal Chorus Frog
Rana catesbeiana	Bullfrog
Rana clamitans	Green Frog
Rana palustris	Pickerel Frog
Rana pipiens	Northern Leopard Frog
Rana septentrionalis	Mink Frog
Rana sylvatica	Wood Frog