



Iowa's Frog and Toad Call Survey

2008-2009



2008-2009 Survey Results

This report will present results from both the 2008 and 2009 survey seasons. 2008-2009 were the 18th and 19th year respectively for Iowa's frog and toad call survey. Unfortunately a summary report did not get produced last year so this document presents data from both 2008 and 2009.

2008

A total of 61 routes in 38 counties were surveyed. The routes surveyed contained a total of 339 sites, which were visited 887 times in the course of 3 runs (Table 1). Participation was up slightly from the 2007 season in which 57 routes were run. Under the traditional habitat codes, the top three wetland communities surveyed were permanent open water, open marsh, and timbered riverine. These descriptions characterize over half of the sites surveyed (Table 2). The top three habitat types for sites characterized under the VWMP codes, were wetlands with emergent vegetation (WTCT, 27%), farm ponds (POND, 13%), and ditches and timbered riverine (Both DICH, RIVR, 10%).

The average weather conditions were well within the parameters of the survey. No major weather irregularities were reported though it should be noted the early summer was very wet and lots of flooding occurred. Water temperatures for over half of the records were reported and the average for each run was above the recommended levels. Surveys were generally run on calm (low wind) clear nights. One condition that was way up was the percentage of surveys done within 24 hours of a rain event which was at 44% (up from 6% in 2007) (Table 3).

Chorus frogs are consistently the most reported and abundant species and in 2008 they were heard at the most sites (72.2% of total sites) and tied with cricket frogs for abundance with the highest average call index (2.2, Table 4). They were especially dominant during the first run. American toads, Eastern gray treefrogs and Cricket frogs were close behind the chorus frog as the most reported species and they dominated the middle run. Surveyors have begun, when possible to distinguish between the 3 species of Leopard frogs and the numbers reported under the different species has been going up, with the Northern being the species most often heard.

Only four possible species were not heard on this year's survey: wood frog, crawfish frog, Fowler's toad and Great Plains toad (Table 4). Wood Frog has never been confirmed in the state, the crawfish frog has not been observed since the 1940's and the Fowler's and Great Plain's toad have a restricted range in the state.

2008 was a great year with more routes and sites being surveyed than in recent years. In my experience frogs and toads were heard in some new places because of the amount of water on the landscape. This observation is supported by the very low number of empty sites (no frogs heard all 3 rounds). Overall, the 2008 data was consistent with recent years. The coarse trend data presented here suggest no major ups or downs however Spring Peepers, Grey Treefrogs and Woodhouse's toad all have a slight downward trend (Fig. 1). Please refer to range of these species and if within the range keep an ear out for them. A more detailed and comprehensive look at this data is still in the works.

2009

A total of 55 routes in 35 counties were surveyed. The routes surveyed contained a total of 292 sites, which were visited 80 times in the course of 3 runs (Table 1a). Participation was slightly down compared to the last couple of seasons. Under the traditional habitat codes the top three wetland communities surveyed were permanent open water, open marsh, and cattail marsh replacing timbered riverine in the 3rd slot (Table 2). The top three habitat types for sites characterized under the VWMP codes, were wetlands with emergent vegetation (WTCT, 27.6%), farm ponds (POND, 15.8%), and timbered riverine (RIVR, 14.5%).

The average weather conditions were well within the parameters of the survey. No major weather irregularities were reported and all parameters except for cloud cover were basically the same as 2008. Water temperatures for over half of the records were reported and the average for

each run was above the recommended levels. Surveys were generally run on calm (low wind) partly cloudy nights. The percentage of surveys done within 24 hours of a rain event was roughly the same as 2008 at 46% (44% in 2008) (Table 3a).

Chorus frogs are consistently the most reported and abundant species and in 2009 they were at one of the highest levels of percentage of sites on which it was heard (78.1% of total sites) and it was also the most abundant frog heard at those sites with the highest average call index (2.16, Table 4a, Fig. 1). As usual, they were especially dominant during the first run. American toads, Eastern gray treefrogs and Cricket frogs were the next most heard species and they dominated the middle run. American toads were down a little bit which put the eastern gray treefrog (*Hyla versicolor*) in the second slot. Surveyors have been, when possible, distinguishing between the 3 species of Leopard frogs for a couple of years now and the numbers reported under the different species has continued to go up, with the Northern being the species most often heard

Only four possible species were not heard on this year's survey: wood frog, crawfish frog, Fowler's toad and Plains Spadefoot (Table 4). Wood Frog has never been confirmed in the state, the crawfish frog has not been observed since the 1940's and the Fowler's and Plain's spadefoot have a restricted range in the state. In addition, Spadefoots have an explosive and short breeding habit which makes them very difficult to detect on these types of surveys.

Overall, the 2009 data was consistent with recent years. The coarse trend data presented here suggest no major ups or downs however Spring Peepers, Grey Treefrogs and Woodhouse's toad all have a slight downward trend (Fig. 1). Please refer to range of these species and if within the range keep an ear out for them. A more detailed and comprehensive look at this data is still in the works.

In the Coming Year

As you likely already know Iowa has joined the North American Amphibian Monitoring Program (NAAMP) run by the U.S. Geological Survey which adds 80+ new randomly placed frog and toad routes across the state. We made the decision to participate in NAAMP as it connects us with our neighbors (both Missouri and Minnesota are members) and facilitates using data collected on frog and toad surveys on a regional and national level. However this is not meant to replace our traditional survey but to be a complement to it. The great thing about the traditional survey is that it allows us to focus our data collection on some of the best herp habitat in the state. The NAAMP survey takes the more statistically rigorous approach of randomly picking sites to survey but quite often these randomly selected routes may not sample great herp habitat.

I don't foresee too many changes as a result of joining NAAMP but there are a few. First I will likely put a hold on establishing new traditional routes for a year or two while I work on recruiting volunteers to cover the NAAMP routes. For this year, about 40% of the NAAMP routes are assigned. In addition I may make some minor changes to the traditional survey (changing the minimum water temp, adding an index of sound disturbance for example) that will help the two surveys mesh. If you'd like to read more about NAAMP, check out the website: <http://www.pwrc.usgs.gov/naamp/>

Finally, I'd like to encourage you all to get in touch! I enjoy the notes some of you send with your survey with observations and comments on how the survey went. I would also appreciate hearing any suggestions for improving the survey materials and administration. Your feed back is much appreciated!

Thank You!

There are not very many surveys that span 20 years. That Iowa's frog and toad survey has is a tribute to your dedication and willingness to spend several nights each summer driving around and listening for frog and toad songs. Finding a night that fits the weather parameters, fits into your schedule, and that won't totally disrupt your sleep patterns is a challenge which many of you have admirably conquered for many years. We say it every year and it's still not enough but once again THANK YOU!

Table 1. 2008 Route and Site Data

Num. of Active* Routes	69
Num. of Active Routes Run in 2008	61
Num. of Active Sites	450
Num. of Active Sites Run in 2008	339
Total Num. of Visits made in 2008	887
Total Number of Counties Surveyed	38
Number of Empty Sites	6 (2%)

* Active = Site/route visited within the last two years.

Table 1a. 2009 Route and Site Data

Num. of Active* Routes	76
Num. of Active Routes Run in 2009	55
Num. of Active Sites	411
Num. of Active Sites Run in 2009	292
Total Num. of Visits made in 2009	840
Total Number of Counties Surveyed	35
Number of Empty Sites	9 (3%)

* Active = Site/route visited within the last two years.

Table 2. 2008 Type of Wetlands Surveyed

Wetland Type	Num. Sites in 2008	% of Total
<u>Traditional Codes</u>		
Permanent Open Water	75	29.5%
Open Marsh	42	16.5%
Timbered Riverine	31	12.2%
Cattail Marsh	30	11.8%
Ephemeral Wetland	27	10.6%
Open Riverine	23	9.1%
Wet Meadow	18	7.1%
Shrub Marsh	8	3.1%
<u>VWMP Codes</u>		
Emergent Vegetation Wetland	18	26.9%
Farm Pond	9	13.4%
Ditch	7	10.4%
Timbered Riverine	7	10.4%
Open Riverine	6	9.0%
Open Water	5	7.5%
Flooded Lowland Woodland	3	4.5%
Sedge Meadow	3	4.5%
Golf Course Pond	2	3.0%
Shrub Wetland	2	3.0%
Flooded Lowland Forest	1	1.5%
Grassed Waterway	1	1.5%
Lake Shore	1	1.5%
Dry Wetland	1	1.5%
Floating Leaved Plants Wetland	1	1.5%

Table 2a. 2009 Type of Wetlands Surveyed

Wetland Type	Num. Sites in 2008	% of Total
<u>Traditional Codes</u>		
Permanent Open Water	67	28.8%
Open Marsh	43	18.5%
Cattail Marsh	31	13.3%
Timbered Riverine	29	12.4%
Ephemeral Wetland	22	9.4%
Wet Meadow	17	7.3%
Open Riverine	16	6.9%
Shrub Marsh	8	3.4%
<u>VWMP Codes</u>		
Emergent Vegetation Wetland	21	27.6%
Farm Pond	12	15.8%
Timbered Riverine	11	14.5%
Ditch	6	7.9%
Open Water	6	7.9%
Sedge Meadow	5	6.6%
Flooded Lowland Woodland	4	5.3%
Open Riverine	3	3.9%
Shrub Wetland	3	3.9%
Golf Course Pond	2	2.6%
Dry Wetland	2	2.6%
Floating Leaved Plants Wetland	1	1.3%

Table 3. 2008 Weather and Timing for each Survey Run

Weather and Timing	Runs		
	1	2	3
<i>Average Date</i>	4/22/2008	5/26/2008	7/4/2008
<i>Water Temp (F)</i>	55	63	72
<i>Average Beginning Air Temp (F)</i>	57	67	73
<i>Average Beginning Wind*</i>	2.0	1.3	1.1
<i>Avg Beginning Cloud Cover **</i>	0.79	0.96	0.59
<i>Num. Surveys within 24 hours of Rain</i>	20	34	18

* Wind Codes: 0: 0 mph, 1: 1-3 mph, 2: 4-7 mph, 3: 8-12 mph, 4: 13-18 mph, 5: 19-24 mph

** Cloud Codes: 0: Clear, 1: Partly Cloudy, 2: Cloudy, 3: Fog, 4: Drizzle, 5: Rain Shower

Table 3a. 2009 Weather and Timing for each Survey Run

Weather and Timing	Runs		
	1	2	3
<i>Average Date</i>	4/24/2009	5/25/2009	7/2/2009
<i>Water Temp (F)</i>	56	64	72
<i>Average Beginning Air Temp (F)</i>	58	64	73
<i>Average Beginning Wind*</i>	1.6	1.7	1.3
<i>Avg Beginning Cloud Cover **</i>	1.1	0.84	1.0
<i>Num. Surveys within 24 hours of Rain</i>	24	20	26

* Wind Codes: 0: 0 mph, 1: 1-3 mph, 2: 4-7 mph, 3: 8-12 mph, 4: 13-18 mph, 5: 19-24 mph

** Cloud Codes: 0: Clear, 1: Partly Cloudy, 2: Cloudy, 3: Fog, 4: Drizzle, 5: Rain Shower

Table 4. 2008 Frog and Toad Survey Species Data

Number of Records Per Run
(count of the num. of surveys during which species was detected)

Species	Sites on which species detected	% of Total Possible Sites	1	2	3	Total Num. Visits	Average call index 1=Single to 3=Full Chorus
Chorus Frog	245	72.2%	200	125	23	348	2.2
American Toad	205	60.5%	59	164	62	254	1.98
Eastern Gray Treefrog	177	52.2%	21	148	109	278	2.00
Cricket Frog	173	51.0%	1	113	138	252	2.20
Spring Peeper	70	47.0%	59	44	2	105	1.99
Bull Frog	134	39.5%	0	31	123	154	1.37
Cope's Gray Treefrog	81	23.9%	2	72	31	105	1.91
Northern Leopard Frog**	65	19.2%	52	16	9	77	1.25
Leopard Frog*	52	15.3%	33	20	9	62	1.52
Green Frog	47	15.7%	0	16	41	57	1.54
Woodhouse's Toad	8	12.3%	0	8	1	9	1.78
Plains Leopard**	17	10.4%	6	11	1	18	1.88
Plains Spadefoot	1	9.1%	1	0	0	1	1
Pickeral Frog	4	3.8%	3	2	0	5	1
So. Leopard Frog**	2	0.5%	1	1	0	0	1.0
Wood Frog	0	0.0%	0	0	0	0	NA
Crawfish Frog	0	0.0%	0	0	0	0	NA
Great Plains Toad	0	0.0%	0	0	0	0	NA
Fowler's Toad	0	0.0%	0	0	0	0	NA

* Combination of Leopard Frog field from surveyors who have not been through a VWMP training and the split out species field those surveyors who have been through a training.

** Northern, Southern, and Plains leopard frog records separated out of the Leopard Frog category. These records collected by VWMP volunteers.

Table 4a. 2009 Frog and Toad Survey Species Data

Number of Records Per Run
 (count of the num. of site surveys
 during which species was detected)

Species	Sites on which species detected	% of Total Possible Sites	Number of Records Per Run			Total Num. Visits	Average call index 1=Single to 3=Full Chorus
			1	2	3		
Chorus Frog	228	78.1%	218	66	38	322	2.16
Eastern Gray Treefrog	160	54.8%	13	110	113	236	1.95
American Toad	157	53.8%	53	111	51	215	1.80
Cricket Frog	148	50.7%	3	83	129	215	2.07
Spring Peeper	66	42.0%	59	25	4	88	1.93
Bull Frog	95	32.5%	1	15	95	111	1.32
Northern Leopard Frog**	90	30.8%	81	27	10	118	1.38
Cope's Gray Treefrog	69	23.6%	0	34	55	89	1.64
Green Frog	54	20.4%	0	17	50	67	1.45
Great Plains Toad	3	7.7%	0	1	3	4	1.75
Leopard Frog*	20	6.8%	16	2	3	21	1.1
Woodhouse's Toad	4	6.2%	0	1	3	4	2
Plains Leopard**	8	5.7%	4	3	1	8	1.25
Pickeral Frog	4	3.8%	2	2	0	4	1.5
So. Leopard Frog	3	1.0%	3	0	0	0	1
Plains Spadefoot	0	0.0%	0	0	0	0	NA
Wood Frog	0	0.0%	0	0	0	0	NA
Crawfish Frog	0	0.0%	0	0	0	0	NA
Fowler's Toad	0	0.0%	0	0	0	0	NA

Fig 1. These graphs show the percent of wetlands where the frog or toad was found at any time during the given year between 1998 and 2009. The data was restricted to occurrences which were recorded within the historic range of the animal based on the Iowa GAP analysis project.

