OFFICE OF RESOURCE CONSERVATION

State of Illinois

Final Report May 1, 2008 – September 30, 2013

PROJECT NUMBER: T-53-D-1

PROJECT TITLE: Investigating Mussel Communities in Illinois Streams

Summary:

Freshwater mussels are one of the fastest declining taxonomic groups of organisms in North America, yet few consistently collected mussel-community data sets exist in Illinois. This project collected baseline mussel data in conjunction with existing basin surveys on wadeable streams and other high priority locations in Illinois. These data will be used to fill knowledge gaps in Illinois' Wildlife Action Plan, support revisions of current mussel community indices, assist water quality initiatives, and guide restoration initiatives.

Approach:

Objective 1. The original goal of this project was to choose approximately 120 – 150 wadeable sample sites per year (480-600 sites during life of project) that corresponded to scheduled basin survey locations or that meet other selection criteria described in the approach section. Timeframe: May – June 2008; February – May 2009, February – May 2010, February – May 2011 and February – May 2012; Percent of Budget: 2%

Due to lack of personnel in 2008 this project started in 2009. During the months of February to May 2009 –2012, approximately 220 to 395 wadeable sites were selected to be sampled each season. These sites were selected by IDNR/IEPA stream specialists (basin survey locations) along with the three mussel biologists from this grant (other selection criteria). Reconnaissance of potential sites occurred during the months of April and May each year, with sites being selected from these efforts. This portion of the project was completed in spring 2012 with 1150 wadeable sampling sites being selected during the life of this project; a 100% increase over the requirements of the grant.

Objective 2. Collect baseline mussel data statewide on 9 – 12 stream basins per year (approximately 120 – 150 wadeable sites) to equal 33 stream basins by 2011. Timeframe: June – October 2008, June – October 2009, June – October 2010, June – October 2011; June – October 2012; Percent of Budget: 80%

Baseline mussel data were not collected during June – October 2008 due to lack of personnel; therefore mussel sampling began in June 2009 and continued each season through 2012. The original goal of this project was to collect baseline mussel data at approximately 480 to 600 total sites. The number of sites sampled exceeded the original goal by nearly two-fold. A total of 1036 unique sites were sampled statewide in 33 stream basins, with 29 sites being sampled on more than one occasion, for a total of 1065 sampling events (Table 1). Baseline mussel data were collected at 778 intensive basin survey sites, 77 special survey sites (including 5 resample sites), and 186 disturbance ranked sites (Table 1, Figures 1-4). A basin breakdown of sites sampled is listed in Table 2.

Objective 3. Collect mussel community data as part of targeted surveys on wadeable streams to supplement baseline data on at least 10 streams annually (40 sites total). Timeframe: June – October 2008, June – October 2009, June – October 2010, June – October 2011, June – October 2012; Percent of Budget: 5%

From 2009 through 2012, a total of 264 targeted survey sites were sampled across all 33 basins. This was a 560% increase over the goal of the project. Project staff contacted IDNR staff in the Divisions of Natural Heritage, Fisheries, and Watershed Protection to identify data gaps or special interest areas where targeted surveys should be conducted. These targeted surveys were completed at 77 sites; 35 special species surveys (Illinois Natural Areas Inventory (INAI) sites), 14 Rock River sites (fish kill), 10 Beaver Creek sites (Iroquois River basin; agricultural spill), and 18 special interest sites (Table 1, Special Survey).

During previous sampling years, we had targeted only a few additional sites for calculating community intactness. By the end of this project, we expected to have adequate samples to address the issue of 'community intactness' and to support revision of the Mussel Community Index (MCI). The revision requires the sampling of sites with only one prior sample and those representing the full range of human disturbance. However, we had sampled fewer sites than expected that met those criteria prior to 2012.

An additional 186 sites throughout the state were sampled based on fish, habitat and macroinvertebrate disturbance ratings in 2012 to address the issue of community intactness (Table 1; disturbance sites). Twenty-two of these sites were selected due to highly elevated sediment chemistry, which research suggests could be partly responsible for the decline in the distribution and abundance of mussels (Ruessler et al. 2011). A total of 399 disturbance rated sites (186 + 213 intensive basin survey sites) in all 33 basins were sampled during this project (Figure 4). The addition of these sites will ensure adequate numbers of samples from the full range of disturbed conditions were sampled, which will be necessary for future revisions to the MCI.

We have a better understanding of the sampling efficiency of a timed survey from data collected in Objective 5; hence we identified a need to assess the repeatability of samples from year to year. Sampling or site conditions such as flow or substrate affect sampling efficiency; yet little work has been done in Illinois to determine if these changes affect sampling outcomes from year to year when mussel communities are not expected to change. A total of 24 previously sampled sites were selected using a stratified random design to be sampled during the 2011 and 2012 field seasons. These sites include 12 streams where species richness was greater than 5 and an additional 12 streams with species richness was less than 5. Due to sampling conditions and time constraints, only 13 resample sites were sampled during the 2011/2012 sampling season in the following basins: Big Muddy, Green, Kankakee, Kaskaskia, Mackinaw, and Sangamon (Table 1, resample). Three of these sites were also INAI sites (special species surveys). Additional resamples would be necessary to determine if site conditions affect sampling outcomes year to year.

Objective 4. Maintain and update the mussel resource database annually. Timeframe: November 2008 – May 2009; November 2009 – May 2010; November 2010 – May 2011; November 2011 – May 2012; November 2012 – May 2013; Percent of Budget: 4%

The Illinois Mussel Database (created under State Wildlife Grant T-12-P-1) was installed on the computers of the Mussel Coordinator and Mussel Biologists. Field sampling data from the 2009 through 2012 season were added to each crew leader's database; subsequently the three individual databases were combined into a statewide "master" database. At present time, issues involving the inability of the database to accept multiple samples from a single locality, limited query ability (e.g., sites are only accessible by temporary site id generated by database not by commonly-used ILEPA code or individual field number), the return of incorrect data, and several other query problems have been encountered during this study. Due to these issues and the need for multiple state agencies to easily access the mussel data, a web-based database will be designed and implemented in the future.

Objective 5. Investigate the sampling efficiency of current IDNR sampling protocols on wadeable streams to decreasing or increasing amounts of sampling effort. Timeframe: May 2008 – December 2010; Percent of Budget: 6%

A University of Illinois graduate student, Jian Huang, under the advisement of Dr. Yong Cao, completed this objective in 2009/2010. During his study, Mr. Huang found that our standard effort, a 4 man-hour search, captured 15-100% of all species with an average of 61%. Observed species richness was not significantly correlated with the estimated total richness until sampling effort reached 8 man-hours (Pearson's $r = 0.59$, $p < 0.05$), which captured over 70% of all species at 2/3 of sites. A 10 man-hour search yielded much stronger correlation (Pearson's $r = 0.78$, $p < 0.01$) and over 70% of all species at 72 % of sites. Sampling adequacy decreased with increasing stream size and substrate size, but increased with % of forests in the riparian zone and logs in streams. Species richness at a site tended to increase with watershed size, stream size, % of open water in the riparian zone, but decrease with % of agricultural land-use. The results of this study can serve as a guide for setting standard sampling efforts for mussel surveys in Illinois and possibly other Midwestern states and can provide a baseline for setting

site-specific efforts. Mr. Huang successfully defended his master's work in April 2011. His thesis titled, "Sampling Adequacy of Freshwater Mussel Surveys and Variation of Mussel Species Richness in Illinois Streams" can be found at: http://hdl.handle.net/2142/24475.

Objective 6. Prepare and catalogue specimens. Timeframe: November 2008 – May 2009; November 2009 – May 2010; November 2010 – May 2011; November 2011 – May 2012; November 2012 – May 2013; Percent of Budget: 2%

A vouchered specimen (shell or live specimen if no shell was present) of each species from each site sampled between 2009 and 2012 were taken and deposited at the Illinois Natural History Survey (INHS) Mollusk Collection, Champaign. After the completion of each sampling season, two technical scientists, under the direction of Kevin Cummings, mollusk curator, prepared and catalogued specimens according to INHS protocols. A total of ~4000 lots (vouchered specimens) were added to the INHS Mollusk Collection from this project.

Objective 7. Prepare basin survey and other reports. Timeframe: November 2008 – May 2009; November 2009 – May 2010; November 2010 – May 2011; November 2011 – May 2012; November 2012 – May 2013; Percent of Budget: 1%.

Twenty-one basin reports (which include the 33 basins sampled) have been completed and made into INHS Technical Reports for the following basins: Big Muddy, Cache, Des Plaines, Embarras, Fox, Illinois River tributaries, Iroquois, Kankakee, Kaskaskia, LaMoine, Little Wabash, Mackinaw, Mississippi North, North Central, and Central, Mississippi South and South Central, Rock, Rock tributaries, Saline and Ohio Tributaries, Sangamon River, Spoon, Upper Illinois, and Vermilion-Wabash basins. These reports can be accessed at the IDNR SharePoint site and on the INHS mollusk homepage: https://dnr.partner.illinois.gov/ifawat/Campaigns/Streams.aspx and http://wwx.inhs.illinois.edu/collections/mollusk/swg/. Reports (platform presentations and posters) regarding each sampling season, detectability of mussels using timed search methodology, the reestablishment of SGNC mussels, and several other topics were presented in 2009 through 2012 at Illinois American Fisheries Society annual meetings, Freshwater Mollusk Conservation Society biannual meetings, and the Prairie Research Institute Lightning Symposium. These meetings provided important professional networking opportunities, as well as current information regarding aquatic species.

Resulting publications:

Huang, J., Y. Cao, and K.S. Cummings. 2011. Assessing sampling adequacy of mussel diversity surveys in wadeable Illinois Streams. Journal of the North American Benthological Society, 30(4):923-934.

Cao, Y., J. Huang, K.S. Cummings, A. Holtrop. 2013. Modeling changes in freshwater mussel diversity in an agriculturally dominated landscape. Freshwater Science 32(4): 1205-1218.

Future Goals:

Funds have been committed to continue freshwater mussel research in Illinois based on the outcome of this project. Results of this project will be used to develop species distribution models, update and revise the status of the current SGNC mussels, and develop/suggest actions for the Streams Campaign in the Illinois Wildlife Action Plan that focus on mussel conservation. Future field sampling will concentrate on updating our knowledge of Illinois' Species of Greatest Need of Conservation (SGNC) in areas where locality or recruitment information are incomplete. Approximately ten sites will be selected to define expected levels of recruitment for SGNC mussels. These sites will be located in 3-4 basins where known concentrations of SGNC species (*Alasmidonta viridis, Cyclonaias tuberculata, Elliptio dilatata, Lampsilis fasciola, Lasmigona compressa, Lasmigona costata, Ptychobranchus fasciolaris, Quadrula cylindrica, Toxolasma lividum, Venustaconcha ellipsiformis, Villosa iris, and Villosa lienosa*) exist. Another component of future sampling will be to assess the geographical range of at least three mussel species (*Anodontoides cf. radiata*, *Lampsilis hydiana*, and *Villosa lienosa*) that have newly discovered populations outside of their known historic range. We will sample approximately 20 sites in the Cache River, Ohio River tributaries, Big Muddy, and Saline River basins to help determine the ranges of these three species.

Literature Cited:

Ruessler, D.S., N.J. Kernaghan, C.M. Wieser, J.J. Wiebe, and T.S. Gross. 2011. An assessment of potential contaminant effects on freshwater mussels in the south Florida ecosystem. USGS-Florida Integrated Science Center, Gainesville, Fl. Accessed at http://fl.biology.usgs.gov/posters/Ecotoxicology/Contaminants_Effect_Mussels/contaminants_effect_mussels.html

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Table 1: 2009-2012 sampling sites including counts of live, dead, relict species and sampling type. [1] = resample, [2] = IDNR special survey, [3] = resample & special survey, [4] = disturbance site

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Big Muddy	Akin Creek	20-Aug-2009	38.0136	-88.7430	0	0	0
Big Muddy	Andy Creek	1-Oct-2009	37.9904	-89.0259	2	0	0
Big Muddy	Big Muddy River	19-Aug-2009	38.3371	-89.0042	6	1	0
Big Muddy	Big Muddy River	28-Sept-2009	37.6244	-89.4281	0	5	0
Big Muddy	Big Muddy River	23-Sept-2010	37.9942	-88.9833	12	1	0
Big Muddy	Big Muddy River [1]	3-Aug-2011	38.3371	-89.0042	7	0	1
Big Muddy	Casey Fork	20-Aug-2009	38.2683	-88.8992	0	0	0
Big Muddy	Cave Creek	28-Sept-2009	37.6289	-89.3415	1	0	0
Big Muddy	Cedar Creek	29-Sept-2009	37.6611	-89.2963	5	0	0
Big Muddy	Crab Orchard Creek	18-Aug-2009	37.7321	-88.8883	0	0	2
Big Muddy	Crab Orchard Creek	29-Sept-2009	37.7726	-89.1790	6	2	0
Big Muddy	Grassy Creek	28-Sept-2009	37.6124	-89.0504	0	0	0
Big Muddy	Gun Creek	1-Oct-2009	38.1486	-88.8453	0	0	1
Big Muddy	Hurricane Creek	29-Sept-2009	37.8211	-89.0966	0	0	0
Big Muddy	Indian Creek	29-Sept-2009	37.6557	-89.1798	0	0	0
Big Muddy	Lake Creek	1-Oct-2009	37.8075	-88.9280	1	0	0
Big Muddy	Little Beaucoup Creek	30-Sept-2009	38.1582	-89.3329	1	0	0
Big Muddy	Little Galum Creek	30-Sept-2009	38.0403	-89.4288	0	1	0
Big Muddy	Little Grassy	2-Oct-2009	37.6617	-89.1187	3	0	0
Big Muddy	Little Muddy River	6-Aug-2010	38.0228	-89.1350	4	0	0
Big Muddy	Little Muddy River	23-Sept-2010	37.9008	-89.2083	8	2	0
Big Muddy	Middle Fork	5-Aug-2010	37.9861	-88.8625	3	1	0
Big Muddy	Mud Creek	29-Sept-2009	37.7468	-89.2918	1	0	1
Big Muddy	Pond Creek	5-Aug-2010	37.8597	-88.8355	0	0	0
Big Muddy	Rayse Creek	19-Aug-2009	38.1942	-89.0624	3	1	0
Big Muddy	Reese Creek	30-Sept-2009	38.0128	-89.1840	4	1	0
Big Muddy	Snow Creek	19-Aug-2009	38.2342	-89.0043	5	0	0
Big Muddy	Swanwick Creek	30-Sept-2009	38.1702	-89.4076	0	2	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Big Muddy	Sycamore Creek	2-Oct-2009	37.6730	-89.1666	0	0	0
Big Muddy	Wolf Creek	28-Sept-2009	37.6764	-89.0197	0	1	0
Cache River	Bear Creek Ditch	23-Jun-2009	37.2632	-88.7941	3	0	0
Cache River	Boar Creek	11-Jun-2009	37.1840	-89.2020	0	0	0
Cache River	Buck Branch	9-Jul-2009	37.5253	-89.0117	0	0	0
Cache River	Cache River	8-Jul-2009	37.4664	-89.0767	11	0	0
Cache River	Cache River	9-Jul-2009	37.5043	-89.1712	6	1	0
Cache River	Cache River	23-Jul-2009	37.2908	-89.0811	0	1	0
Cache River	Cache River	17-Aug-2009	37.1596	-89.2690	7	1	0
Cache River	Cache River	17-Aug-2009	37.1964	-89.2525	4	0	0
Cache River	Cache River	18-Aug-2009	37.3614	-88.9253	1	0	2
Cache River	Cache River	18-Aug-2009	37.3664	-88.9217	8	0	0
Cache River	Cache River	30-Sept-2010	37.3694	-88.9253	8	0	0
Cache River	Cache River [1]	19-May-2010	37.4664	-89.0767	8	0	0
Cache River	Cave Creek	22-Jun-2009	37.3665	-88.8617	3	0	0
Cache River	Cooper Creek	10-Jun-2009	37.3350	-89.2650	0	0	0
Cache River	Crooked Creek	18-Jun-2009	37.3420	-89.1940	0	0	1
Cache River	Dutchman Creek	19-Jun-2009	37.4683	-88.9115	2	0	0
Cache River	Dutchman Creek	24-Jun-2009	37.5215	-88.9400	0	0	0
Cache River	Hartline Creek	9-Jun-2009	37.2910	-89.2420	0	0	2
Cache River	Hartline Creek	9-Jun-2009	37.2960	-89.2580	0	0	1
Cache River	Jackson Creek	8-Jun-2009	37.2580	-89.2650	0	0	0
Cache River	Lingle Creek	18-Jun-2009	37.3520	-89.2610	0	0	0
Cache River	Little Cache River	24-Jun-2009	37.4161	-88.8911	4	0	0
Cache River	Little Cache River	24-Jun-2009	37.4545	-88.8659	1	0	0
Cache River	Main Ditch	23-Jun-2009	37.3205	-88.8761	6	0	0
Cache River	Main Ditch [1]	19-May-2010	37.3205	-88.8761	5	1	0
Cache River	Sandy Creek	17-Jun-2009	37.2320	-89.3230	0	0	0
Cache River	West Branch	10-Jun-2009	37.2340	-89.3430	0	0	0
Cache River	Wolf Creek	10-Jun-2009	37.2170	-89.3350	1	0	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Des Plaines	Bull Creek	24-Sept-2009	42.3117	-87.9637	3	2	3
Des Plaines	Des Plaines River	22-Sept-2009	41.5819	-88.0722	0	1	2
Des Plaines	Des Plaines River	23-Sept-2009	41.8129	-87.8098	0	0	2
Des Plaines	Des Plaines River	23-Sept-2009	42.0860	-87.8876	0	1	0
Des Plaines	Des Plaines River	24-Sept-2009	42.4889	-87.9258	2	2	0
Des Plaines	DuPage River	22-Sept-2009	41.4193	-88.2267	1	1	4
Des Plaines	East Branch DuPage River	8-Jul-2009	41.7181	-88.0706	2	3	2
Des Plaines	East Branch DuPage River	23-Sept-2009	41.8255	-88.0531	3	1	1
Des Plaines	Grant Creek [4]	27-Jun-2012	41.3778	-88.1939	3	3	1
Des Plaines	Hastings Creek	24-Sept-2009	42.4480	-88.0248	0	1	0
Des Plaines	Hickory Creek	22-Sept-2009	41.5231	-87.9429	1	1	7
Des Plaines	Hickory Creek	22-Sept-2009	41.5301	-88.0205	4	2	5
Des Plaines	Indian Creek	24-Sept-2009	42.2070	-87.9592	3	2	4
Des Plaines	Jackson Creek	29-Jun-2009	41.4393	-88.0596	2	0	2
Des Plaines	Manhatten Creek	9-Jul-2009	41.4300	-88.0776	1	0	4
Des Plaines	North Mill Creek	24-Sept-2009	42.4658	-88.0086	3	1	2
Des Plaines	Rock Run [4]	26-Jun-2012	41.4865	-88.1865	2	0	2
Des Plaines	Salt Creek	23-Sept-2009	41.8207	-87.9270	1	1	4
Des Plaines	Sawmill Creek	23-Sept-2009	41.7077	-87.9626	1	2	0
Des Plaines	West Branch DuPage	8-Jul-2009	41.7126	-88.1413	1	3	4
Embarras	Allison Ditch	16-Aug-2011	38.6629	-87.6076	2	0	1
Embarras	Big Creek	9-Jun-2011	39.0491	-87.8259	1	0	1
Embarras	Brushy Creek	9-Jun-2011	38.8149	-87.6755	0	0	0
Embarras	Brushy Creek [4]	17-Jul-2012	38.7909	-87.7032	2	1	0
Embarras	Brushy Fork	24-Aug-2009	39.7374	-88.0697	11	2	2
Embarras	Brushy Fork	12-Sep-2011	39.7633	-88.0525	11	0	1
Embarras	Brushy Fork [4]	8-Aug-2012	39.8055	-87.9464	12	1	1
Embarras	Cassel Creek	11-Jul-2011	39.4878	-88.2094	0	0	4
Embarras	Catfish Creek	18-Jul-2011	39.6730	-87.9268	7	0	0
Embarras	Deer Creek	12-Jul-2011	39.7108	-88.1394	9	0	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Embarras	Donica Creek	12-Jul-2011	39.6341	-87.9841	3	0	2
Embarras	East Branch Embarras River	15-Jul-2011	39.8940	-88.1795	12	1	0
Embarras	Embarras River	31-Aug-2009	39.7535	-88.1716	12	0	2
Embarras	Embarras River	20-Jun-2011	39.9364	-88.1911	0	0	2
Embarras	Embarras River	18-Jul-2011	39.4571	-88.1470	15	0	2
Embarras	Embarras River	8-Aug-2011	38.9371	-88.0224	5	2	6
Embarras	Embarras River	8-Aug-2011	38.9953	-88.1497	11	2	6
Embarras	Embarras River	8-Aug-2011	39.2110	-88.1947	13	0	1
Embarras	Embarras River	9-Aug-2011	39.3442	-88.1707	10	0	0
Embarras	Embarras River	9-Aug-2011	39.6101	-88.0709	13	0	4
Embarras	Embarras River	9-Aug-2011	39.7915	-88.1859	12	0	4
Embarras	Embarras River	15-Aug-2011	38.7293	-87.6689	1	0	2
Embarras	Embarras River [4]	19-Jul-2012	39.2509	-88.1734	12	1	1
Embarras	Embarras River [4]	7-Aug-2012	39.5550	-88.0894	18	1	2
Embarras	Embarras River [4]	7-Aug-2012	39.6815	-88.0372	15	1	5
Embarras	Embarras River [4]	8-Aug-2012	39.8321	-88.1602	9	3	0
Embarras	Greasy Creek [4]	6-Aug-2012	39.6377	-88.0848	0	0	2
Embarras	Hackett Branch	31-Aug-2009	39.7679	-88.2422	5	0	4
Embarras	Hackett Branch [1]	20-Jun-2011	39.7679	-88.2422	1	5	6
Embarras	Hickory Grove	12-Jul-2011	39.6565	-87.8913	7	0	0
Embarras	Honey Creek [4]	17-Jul-2012	38.9017	-87.8067	0	0	2
Embarras	Hurricane Creek	13-Jul-2011	39.3073	-88.1391	0	0	0
Embarras	Indian Creek	4-Aug-2011	38.6936	-87.6921	6	2	0
Embarras	Jordan Slough	18-Jul-2011	39.8747	-88.1509	5	0	2
Embarras	Kickapoo Creek	15-Jul-2011	39.4625	-88.1932	1	2	1
Embarras	Kickapoo Creek [2]	6-Aug-2010	39.4651	-88.2303	1	0	3
Embarras	Little Embarras River	3-Sept-2009	39.5962	-88.0446	6	2	1
Embarras	Little Embarras River [4]	6-Aug-2012	39.6158	-88.0261	12	1	1
Embarras	Mint Creek	9-Jun-2011	39.0554	-88.2335	0	0	1
Embarras	Muddy Creek [4]	16-Jul-2012	39.0646	-87.9101	5	0	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Embarras	Muddy Creek -North	13-Jul-2011	39.2586	-88.3033	4	0	0
Embarras	Muddy Creek-North [4]	19-Jul-2012	39.2297	-88.3261	0	0	2
Embarras	Muddy Creek-South [4]	17-Jul-2012	38.7704	-87.7599	5	3	0
Embarras	Mule Creek [4]	19-Jul-2012	39.2476	-88.3497	0	0	0
Embarras	North Fork Embaras River	9-Jun-2011	39.0102	-87.9469	6	1	1
Embarras	North Fork Embarras River	11-Aug-2009	39.2645	-87.9077	6	0	0
Embarras	North Fork Embarras River	13-Jul-2011	39.3514	-87.9028	0	0	3
Embarras	North Fork Embarras River	15-Aug-2011	39.0006	-87.9452	9	0	3
Embarras	North Fork Embarras River	15-Aug-2011	39.0997	-87.9762	11	0	0
Embarras	North Fork Embarras River [4]	18-Jul-2012	39.1639	-87.9431	9	0	0
Embarras	Polecat Creek	12-Jul-2011	39.5056	-88.0724	0	0	5
Embarras	Riley Creek	11-Jul-2011	39.4762	-88.2061	4	1	0
Embarras	Riley Creek	11-Jul-2011	39.4867	-88.2097	7	0	2
Embarras	Scattering Fork [4]	20-Jun-2011	39.7511	-88.2319	3	1	2
Embarras	Scattering Fork [4]	6-Aug-2012	39.7426	-88.1762	11	2	0
Embarras	Sugar Creek-South [4]	17-Jul-2012	38.8664	-87.6849	0	0	0
Embarras	Willow Creek [4]	17-Jul-2012	39.0317	-87.9363	10	0	1
Fox	Big Rock Creek	25-Aug-2010	41.6664	-88.5240	1	2	3
Fox	Big Rock Creek	25-Aug-2010	41.7333	-88.5077	7	2	1
Fox	Boone Creek	16-Jun-2010	42.3207	-88.3126	2	0	1
Fox	Boone Creek [4]	20-Jun-2012	42.3450	-88.2689	0	0	0
Fox	Buck Creek	23-Aug-2010	41.4366	-88.8037	1	3	1
Fox	Crystal Creek	20-Jun-2012	42.1679	-88.2960	0	0	0
Fox	East Branch Big Rock Creek	20-Aug-2012	41.7910	-88.6010	2	0	1
Fox	Ferson Creek	1-Jul-2010	41.9332	-88.3411	8	0	2
Fox	Flint Creek	16-Jun-2010	42.2108	-88.1734	2	1	3
Fox	Fox River	25-Aug-2010	41.9931	-88.2948	0	2	4
Fox	Fox River	25-Aug-2010	42.1639	-88.2918	2	1	6
Fox	Fox River	25-Aug-2010	42.2801	-88.2283	3	1	7
Fox	Fox River	19-Jun-2012	42.3081	-88.2504	7	0	4

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Fox	Hollenbeck Creek	21-Aug-2012	41.6017	-88.5484	0	1	0
Fox	Indian Creek	24-Aug-2010	41.5355	-88.8520	7	0	2
Fox	Indian Creek	24-Aug-2010	41.6707	-88.8598	7	1	0
Fox	Little Indian Creek	23-Aug-2010	41.5536	-88.7505	13	1	2
Fox	Little Indian Creek	24-Aug-2010	41.6603	-88.8157	5	1	0
Fox	Little Rock Creek	25-Aug-2010	41.6694	-88.5588	1	3	4
Fox	Little Rock Creek	26-Aug-2010	41.6356	-88.5411	1	1	3
Fox	Little Rock Creek	26-Aug-2010	41.6450	-88.5730	0	1	1
Fox	Little Rock Creek	21-Aug-2012	41.7161	-88.5827	7	0	1
Fox	Mill Creek North [4]	21-Aug-2012	41.8221	-88.3253	5	1	2
Fox	Morgan Creek	21-Aug-2012	41.6482	-88.3819	2	0	0
Fox	Nippersink Creek	24-Aug-2010	42.4011	-88.4320	5	0	0
Fox	Nippersink Creek	19-Jun-2012	42.3877	-88.3907	3	0	1
Fox	Nippersink Creek	19-Jun-2012	42.4411	-88.2362	8	1	6
Fox	North Branch Nippersink Creek	24-Aug-2010	42.4649	-88.2998	9	0	3
Fox	Otter Creek	1-Jul-2010	41.9850	-88.3558	8	0	2
Fox	Otter Creek	21-Aug-2012	41.9703	-88.3563	8	1	0
Fox	Poplar Creek	17-Jun-2010	42.0138	-88.2612	7	0	0
Fox	Somonauk Creek	23-Aug-2010	41.5436	-88.6867	4	3	3
Fox	Somonauk Creek	20-Aug-2012	41.7016	-88.6666	9	1	1
Fox	Spring Creek	20-Jun-2012	42.1896	-88.2315	10	0	0
Fox	Tyler Creek	17-Jun-2010	42.0571	-88.3382	0	2	5
Fox	Tyler Creek	17-Jun-2010	42.0632	-88.2949	0	4	2
Fox	Blackberry Creek	20-Jul-2011	41.6716	-88.4426	5	1	2
Fox	Blackberry Creek	20-Jul-2011	41.7800	-88.4397	5	1	5
Fox	Fox River	19-Jul-2011	41.4335	-88.7711	6	0	4
Fox	Fox River	19-Jul-2011	41.5517	-88.6454	6	0	7
Fox	Fox River	20-Jul-2011	41.6066	-88.5619	5	1	11
Fox	Fox River	21-Jul-2011	41.7294	-88.3388	6	0	3
Fox	Fox River	21-Jul-2011	41.8715	-88.3083	0	2	7

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Fox	Nippersink Creek	10-Aug-2011	42.4790	-88.2895	1	0	5
Fox	North Branch Nippersink Creek [1]	10-Aug-2011	42.4649	-88.2998	5	3	3
Fox	Poplar Creek	11-Aug-2011	42.0331	-88.2304	2	2	1
Fox	Poplar Creek	11-Aug-2011	42.0449	-88.2144	5	1	2
Fox	Somonauk Creek	20-Jul-2011	41.6349	-88.6527	4	4	6
Green River	Big Slough Ditch	4-Aug-2009	41.4932	-90.1333	2	1	1
Green River	Big Slough Drainage Ditch [4]	31-Jul-2012	41.5121	-90.0864	1	1	0
Green River	Coal Creek	25-Aug-2009	41.3652	-87.7515	9	0	1
Green River	Coal Creek	26-Aug-2009	41.3652	-89.7515	0	1	1
Green River	Fairfield Ditch #1	15-Jul-2009	41.5114	-89.8574	3	1	0
Green River	Fairfield Union Special Ditch	15-Jul-2009	41.4968	-89.8137	0	0	0
Green River	Geneseo Creek [4]	31-Jul-2012	41.4477	-90.1631	0	0	1
Green River	Green River	26-Aug-2009	41.6379	-89.5551	3	0	0
Green River	Green River	27-Aug-2009	41.4839	-89.8294	4	0	1
Green River	Green River	27-Aug-2009	41.4892	-90.1587	1	0	0
Green River	Green River	31-Aug-2011	41.7106	-89.3255	4	1	3
Green River	Green River [1]	30-Aug-2011	41.6379	-89.5551	5	1	0
Green River	Green River [1]	31-Jul-2012	41.4892	-90.1587	10	3	1
Green River	Green River [4]	30-Jul-2012	41.5946	-89.6892	7	0	1
Green River	Green River [4]	30-Jul-2012	41.6770	-89.4398	4	0	1
Green River	Green River [4]	31-Jul-2012	41.4725	-90.0579	11	1	3
Green River	Mineral Creek	6-Aug-2009	41.4547	-90.2958	0	0	0
Green River	Mud Creek-East [4]	31-Jul-2012	41.4560	-89.9721	7	0	0
Green River	Spring Creek	6-Aug-2009	41.4370	-90.0677	2	0	0
Green River	Walnut Special Ditch	16-Jul-2009	41.5242	-89.6762	0	1	0
Green River	Willow Creek	25-Aug-2009	41.7654	-90.1684	0	0	1
Green River	Winnebago Ditch	4-Aug-2009	41.6282	-89.6871	3	1	0
Iroquois	Beaver Creek	10-Jun-2010	40.9514	-87.5262	0	2	7
Iroquois	Beaver Creek	7-Jul-2010	40.9821	-87.6549	1	3	2
Iroquois	Beaver Creek	8-Jul-2010	40.9655	-87.5991	9	0	2

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Iroquois	Beaver Creek	27-Jul-2010	40.9722	-87.7548	13	0	1
Iroquois	Beaver Creek [1]	22-Aug-2012	40.9722	-87.7548	14	4	0
Iroquois	Beaver Creek [2]	22-Aug-2012	40.9753	-87.6184	3	4	3
Iroquois	Beaver Creek [2]	22-Aug-2012	40.9772	-87.7128	7	1	0
Iroquois	Beaver Creek [2]	22-Aug-2012	40.9812	-87.6942	0	0	0
Iroquois	Beaver Creek [2]	22-Aug-2012	40.9813	-87.7313	2	2	1
Iroquois	Beaver Creek [2]	22-Aug-2012	40.9820	-87.6561	8	1	0
Iroquois	Beaver Creek [2]	22-Aug-2012	40.9829	-87.6332	2	4	2
Iroquois	Beaver Creek [2]	22-Aug-2012	40.9699	-87.7901	12	0	0
Iroquois	Beaver Creek [2]	22-Aug-2012	40.9744	-87.7715	10	0	0
Iroquois	Beaver Creek [3]	14-Sep-2011	40.9722	-87.7548	15	0	0
Iroquois	Coon Creek	26-Jul-2010	40.7151	-87.7255	0	0	1
Iroquois	Hooper Branch [2]	22-Aug-2012	40.9709	-87.5802	1	2	0
Iroquois	Iroquois River	16-Aug-2010	40.7827	-87.7504	15	1	3
Iroquois	Iroquois River	16-Aug-2010	40.7909	-87.6542	12	2	3
Iroquois	Iroquois River	16-Aug-2010	40.8230	-87.5814	11	3	1
Iroquois	Iroquois River	19-Aug-2010	40.8439	-87.8249	10	3	2
Iroquois	Iroquois River	19-Aug-2010	40.8588	-87.8410	7	2	4
Iroquois	Iroquois River	19-Aug-2010	40.8695	-87.8483	15	1	1
Iroquois	Iroquois River [2]	26-Aug-2010	40.9325	-87.8125	12	0	1
Iroquois	Iroquois River [2]	26-Aug-2010	41.0090	-87.8239	17	1	0
Iroquois	Langan Creek	9-Jul-2010	40.9570	-87.8475	0	3	9
Iroquois	Little Beaver Creek	7-Jul-2010	40.9976	-87.7225	10	0	1
Iroquois	Little Beaver Creek	7-Jul-2010	41.0219	-87.6784	1	2	1
Iroquois	Louis Creek	6-Jul-2010	40.6342	-88.0240	6	1	0
Iroquois	Mud Creek-East	12-Jul-2010	40.6183	-87.5354	11	2	1
Iroquois	Mud Creek-East	12-Jul-2010	40.6360	-87.5716	6	3	1
Iroquois	Mud Creek-West	13-Jul-2010	40.5924	-87.8457	4	1	1
Iroquois	Mud Creek-West	26-Jul-2010	40.6178	-87.7342	9	1	1
Iroquois	Pike Creek	8-Jul-2010	40.9148	-87.7796	12	0	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Iroquois	Prairie Creek	6-Jul-2010	40.8570	-87.8992	5	0	0
Iroquois	Shavetail Creek	6-Jul-2010	40.7370	-87.8960	6	0	0
Iroquois	Spring Creek	28-Jul-2010	40.5905	-88.0270	7	0	0
Iroquois	Spring Creek	28-Jul-2010	40.6783	-88.0081	5	1	0
Iroquois	Spring Creek	28-Jul-2010	40.8052	-87.8639	13	0	1
Iroquois	St. Anne tributary	27-Jul-2010	41.0384	-87.5789	3	0	0
Iroquois	Sugar Creek	14-Jul-2010	40.6194	-87.6620	3	6	4
Iroquois	Sugar Creek	14-Jul-2010	40.6473	-87.7218	5	1	2
Iroquois	Sugar Creek	14-Jul-2010	40.6482	-87.5639	7	1	0
Iroquois	U-Trib Mud Creek West	13-Jul-2010	40.6073	-87.7040	0	3	1
Kankakee	Baker Creek [4]	28-Jun-2012	41.1074	-87.8117	3	0	8
Kankakee	Black Walnut Creek	7-Jul-2010	41.3102	-87.7908	2	2	1
Kankakee	East Branch Horse Creek	8-Jul-2010	41.1462	-88.0998	7	1	3
Kankakee	Exline Slough	7-Jul-2010	41.2659	-87.7399	2	1	2
Kankakee	Exline Slough	8-Jul-2010	41.1372	-87.7776	1	1	9
Kankakee	Forked Creek	17-Aug-2010	41.2552	-88.1056	9	1	1
Kankakee	Horse Creek	20-Jul-2010	41.1979	-88.1479	7	2	3
Kankakee	Kankakee River	21-Jul-2010	41.3055	-88.1513	12	3	4
Kankakee	Kankakee River	21-Jul-2010	41.3501	-88.1918	8	3	9
Kankakee	Kankakee River	17-Aug-2010	41.1134	-87.8684	15	1	3
Kankakee	Kankakee River	17-Aug-2010	41.2082	-88.0118	12	4	1
Kankakee	Kankakee River	18-Aug-2010	41.0748	-87.8057	13	2	1
Kankakee	Kankakee River	18-Aug-2010	41.1200	-87.7508	15	1	1
Kankakee	Kankakee River	18-Aug-2010	41.1602	-87.6626	16	0	2
Kankakee	Kankakee River	18-Aug-2010	41.1660	-87.5266	0	0	1
Kankakee	Kankakee River [2]	23-Aug-2012	41.1555	-87.9178	16	2	1
Kankakee	Kankakee River [2]	23-Aug-2012	41.1584	-87.9378	10	0	0
Kankakee	Kankakee River [3]	27-Jun-2012	41.3055	-88.1513	10	1	4
Kankakee	Prairie Creek	21-Jul-2010	41.3424	-88.1825	1	1	2
Kankakee	Prairie Creek	21-Jul-2010	41.3981	-88.0197	2	0	6

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Kankakee	Rock Creek	20-Jul-2010	41.2212	-87.9734	2	1	6
Kankakee	South Branch Rock Creek	20-Jul-2010	41.2362	-87.8961	6	1	1
Kankakee	Spring Creek	7-Jul-2010	41.0797	-87.7670	1	1	1
Kankakee	Trim Creek	7-Jul-2010	41.2225	-87.6581	7	2	3
Kankakee	Trim Creek [2]	25-Jun-2012	41.3115	-87.6381	4	0	1
Kankakee	West Branch Horse Creek	8-Jul-2010	41.0563	-88.1259	6	0	1
Kaskaskia	Asa Creek	7-Jun-2010	39.6201	-88.6048	3	1	0
Kaskaskia	Beaver Creek	22-Sept-2010	38.6686	-89.4264	4	1	0
Kaskaskia	Beaver Creek	19-Jun-2012	38.7990	-89.4263	3	0	0
Kaskaskia	Beck Creek [4]	18-Jul-2012	39.2883	-88.9987	1	2	3
Kaskaskia	Becks Creek	1-Jul-2010	39.2324	-89.0196	2	1	5
Kaskaskia	Big Creek	9-Aug-2010	39.1079	-88.9179	5	1	0
Kaskaskia	Brickyard Creek [4]	3-Jul-2012	39.0199	-88.8615	0	0	1
Kaskaskia	Brush Creek	30-Jun-2010	39.2693	-88.7125	0	0	2
Kaskaskia	Bull Branch	22-Jun-2010	38.6075	-89.5720	0	0	1
Kaskaskia	Coal Creek	9-Jun-2010	39.3466	-89.0670	0	0	1
Kaskaskia	Copper Slough	29-Jun-2010	40.0842	-88.3383	1	2	2
Kaskaskia	Crooked Creek	21-Jun-2012	38.5545	-89.0896	6	0	2
Kaskaskia	Crooked Creek	27-Aug-2012	38.5070	-89.2735	1	3	0
Kaskaskia	Ditch #4	2-Jul-2010	39.8359	-88.6201	0	0	2
Kaskaskia	Dry Fork	24-Jun-2010	38.9566	-89.5759	0	0	2
Kaskaskia	East Fork Kaskaskia River	10-Aug-2010	38.6912	-89.1001	7	3	1
Kaskaskia	East Fork Shoal Creek	12-Aug-2010	38.8975	-89.4203	7	2	0
Kaskaskia	East Fork Shoal Creek	18-Jun-2012	39.0739	-89.3600	2	1	1
Kaskaskia	East Fork Shoal Creek [4]	18-Jun-2012	38.9822	-89.4121	4	0	0
Kaskaskia	East Fork Shoal Creek [4]	19-Jun-2012	38.8393	-89.4994	14	1	1
Kaskaskia	East Fork Silver Creek	12-Aug-2010	38.7286	-89.7981	4	2	3
Kaskaskia	Elkhorn Creek	21-Sept-2010	38.3650	-89.5986	3	0	0
Kaskaskia	Flat Branch	22-Jun-2010	38.6881	-89.3994	2	1	0
Kaskaskia	Grand Point Creek	2-Aug-2010	38.4771	-89.2181	5	0	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Kaskaskia	Hickory Creek	9-Aug-2010	38.9248	-89.0481	0	0	0
Kaskaskia	Horse Creek	20-Jun-2012	38.1575	-89.9981	2	0	3
Kaskaskia	Hurricane Creek	9-Aug-2010	38.9226	-89.2369	6	2	1
Kaskaskia	Jonathon Creek	7-Jun-2010	39.6007	-88.5462	0	4	6
Kaskaskia	Kaskaskia Ditch	12-Aug-2010	40.0841	-88.3484	1	0	1
Kaskaskia	Kaskaskia River	8-Jun-2010	39.8647	-88.3646	5	0	1
Kaskaskia	Kaskaskia River	11-Jun-2010	40.0110	-88.3488	5	0	0
Kaskaskia	Kaskaskia River	11-Aug-2010	39.5755	-88.5278	16	0	3
Kaskaskia	Kaskaskia River	11-Aug-2010	39.5829	-88.4106	13	1	3
Kaskaskia	Kaskaskia River	12-Aug-2010	39.7037	-88.3876	12	2	3
Kaskaskia	Kaskaskia River	6-Jun-2012	39.8354	-88.3705	6	0	2
Kaskaskia	Kaskaskia River	2-Jul-2012	38.9603	-89.0885	5	0	5
Kaskaskia	Kaskaskia River	3-Jul-2012	39.1318	-88.9717	6	0	1
Kaskaskia	Kaskaskia River	27-Aug-2012	38.4508	-89.6278	6	0	0
Kaskaskia	Kaskaskia River	27-Aug-2012	38.4895	-89.4406	8	0	0
Kaskaskia	Kaskaskia River	27-Aug-2012	38.5744	-89.3692	7	0	10
Kaskaskia	Kaskaskia River	2-Jul-2012	39.2591	-88.8177	9	1	4
Kaskaskia	Kaskaskia River [1]	13-Jun-2012	39.5755	-88.5278	13	3	4
Kaskaskia	Kaskaskia River [2]	13-Jun-2012	39.3403	-88.8250	13	0	0
Kaskaskia	Kaskaskia River [2]	23-Jul-2012	39.5636	-88.4357	9	5	5
Kaskaskia	Lake Branch East	22-Sept-2010	38.5541	-89.6263	0	0	0
Kaskaskia	Lake Fork	15-Jul-2010	39.7920	-88.4627	5	2	3
Kaskaskia	Lake Fork	15-Jul-2010	39.8760	-88.5186	10	3	1
Kaskaskia	Lake Fork	22-Aug-2011	39.0285	-89.5809	0	0	0
Kaskaskia	Little Crooked Creek	2-Aug-2010	38.4417	-89.4167	0	1	0
Kaskaskia	Little Mud Creek [4]	20-Jun-2012	38.3508	-89.7457	2	0	0
Kaskaskia	Little Silver Creek	23-Aug-2011	38.5817	-89.8078	4	0	0
Kaskaskia	Locust Fork	22-Jun-2010	38.7533	-89.5292	0	0	3
Kaskaskia	Lost Creek	30-Jun-2010	38.5816	-89.2773	2	0	1
Kaskaskia	Lost Creek	2-Aug-2010	38.5517	-89.2992	4	0	3

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Kaskaskia	Marrowbone Creek	6-Jun-2012	39.6635	-88.7660	0	3	0
Kaskaskia	Middle Fork Shoal Creek	11-Aug-2010	39.1078	-89.5208	7	0	1
Kaskaskia	Middle Fork Shoal Creek [1]	22-Aug-2011	39.1078	-89.5208	2	2	0
Kaskaskia	Middle Fork Shoal Creek [4]	18-Jun-2012	39.1417	-89.5136	8	0	1
Kaskaskia	Mitchell Creek	18-Jun-2010	39.2354	-88.9036	0	0	1
Kaskaskia	Mitchell Creek [4]	18-Jul-2012	39.2167	-88.9233	0	0	1
Kaskaskia	Mud Creek	3-Aug-2010	38.2936	-89.7576	2	0	2
Kaskaskia	Ninemile Creek	21-Sept-2010	38.0464	-89.8928	0	1	4
Kaskaskia	North Fork Kaskaskia River	10-Aug-2010	38.7738	-89.0957	1	1	0
Kaskaskia	Okaw River/Hammond Mutual Ditch	2-Jul-2010	39.7543	-88.6346	3	3	1
Kaskaskia	Opossum Creek	9-Jun-2010	39.2953	-89.0254	0	0	3
Kaskaskia	Plum Creek	3-Aug-2010	38.1444	-89.8353	6	0	1
Kaskaskia	Prairie Creek	22-Jun-2010	38.5467	-89.2543	3	0	0
Kaskaskia	Prairie Dulong	1-Jul-2010	38.2611	-90.0000	0	0	0
Kaskaskia	Prairie Dulong	20-Jun-2012	38.2597	-89.9962	2	0	1
Kaskaskia	Raccoon Creek	21-Jun-2012	38.5067	-89.0404	2	0	2
Kaskaskia	Ramsey Creek	1-Jul-2010	39.2180	-89.1624	0	0	3
Kaskaskia	Ramsey Creek	10-Aug-2010	39.1023	-89.0889	2	3	4
Kaskaskia	Richland Creek North	30-Jun-2010	39.2361	-88.7872	0	0	2
Kaskaskia	Richland Creek-South	30-Jun-2010	38.4029	-89.9688	0	0	1
Kaskaskia	Richland Creek-South	1-Jul-2010	38.3239	-89.9708	0	0	0
Kaskaskia	Robinson Creek	9-Jun-2010	39.3767	-88.8812	0	0	4
Kaskaskia	Sewer Creek [4]	21-Jun-2012	38.5117	-89.1711	0	0	0
Kaskaskia	Shoal Creek	11-Aug-2010	39.0404	-89.5508	2	4	1
Kaskaskia	Shoal Creek	23-Aug-2011	38.5358	-89.5208	15	1	1
Kaskaskia	Shoal Creek	24-Aug-2011	38.6097	-89.4944	12	1	0
Kaskaskia	Shoal Creek	24-Aug-2011	38.8067	-89.4958	12	1	3
Kaskaskia	Shoal Creek [4]	19-Jun-2012	38.8369	-89.5047	6	0	1
Kaskaskia	Shoal Creek [4]	21-Jun-2012	38.6943	-89.5004	11	1	3
Kaskaskia	Silver Creek	12-Aug-2010	38.7917	-89.8564	4	0	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Kaskaskia	Silver Creek	23-Aug-2011	38.4061	-89.8739	8	1	1
Kaskaskia	South Fork Big Creek [4]	3-Jul-2012	39.0762	-88.9183	0	1	1
Kaskaskia	Sugar Creek	23-Aug-2011	38.5414	-89.6266	10	0	0
Kaskaskia	Sugar Creek	19-Jun-2012	38.6917	-89.6489	1	0	0
Kaskaskia	Sugar Fork Silver Creek	23-Jun-2010	38.7898	-89.7464	2	0	0
Kaskaskia	Twomile Slough	8-Jun-2010	39.9155	-88.3305	4	1	2
Kaskaskia	West Fork Shoal Creek	11-Aug-2010	39.1006	-89.5814	7	0	0
Kaskaskia	West Okaw River	11-Aug-2010	39.6737	-88.6653	9	2	2
Kaskaskia	West Okaw River	23-Jul-2012	39.6094	-88.7231	3	1	0
Kaskaskia	West Okaw River	23-Jul-2012	39.6939	-88.6617	10	0	1
Kaskaskia	West Okaw River [4]	6-Jun-2012	39.7312	-88.6624	1	0	3
Kaskaskia	Whitley Creek	7-Jun-2010	39.5064	-88.5272	0	1	0
Kaskaskia	Whitley Creek [2]	13-Jun-2012	39.5117	-88.5495	1	0	2
Kaskaskia	Wolf Creek	9-Aug-2010	39.1297	-88.8557	1	0	6
Kishwaukee	Beaver Creek	23-Aug-2011	42.3641	-88.7937	2	4	5
Kishwaukee	Beaver Creek [4]	23-Aug-2011	42.2760	-88.9154	4	5	0
Kishwaukee	Coon Creek	24-Aug-2011	42.2080	-88.6877	7	0	0
Kishwaukee	Coon Creek	24-Aug-2011	42.2469	-88.7810	6	1	1
Kishwaukee	East Branch South Branch Kishwaukee River [4]	7-Aug-2012	41.9328	-88.6303	12	1	0
Kishwaukee	East South Branch Kishwaukee River [1]	8-Aug-2011	41.9804	-88.6681	12	1	2
Kishwaukee	East South Branch Kishwaukee River [1]	9-Aug-2011	42.2196	-88.4916	8	0	0
Kishwaukee	Killbuck Creek	22-Aug-2011	42.1659	-89.1002	2	3	4
Kishwaukee	Killbuck Creek	25-Aug-2011	42.0220	-89.0042	9	0	1
Kishwaukee	Killbuck Creek [4]	7-Aug-2012	42.1009	-89.0535	13	0	0
Kishwaukee	Killbuck Creek [4]	8-Aug-2012	42.1604	-89.0761	6	5	1
Kishwaukee	Kishwaukee River	9-Aug-2011	42.2648	-88.5889	3	3	1
Kishwaukee	Kishwaukee River	9-Aug-2011	42.2654	-88.6086	3	0	4
Kishwaukee	Kishwaukee River	10-Aug-2011	42.2470	-88.5028	7	0	0
Kishwaukee	Kishwaukee River	22-Aug-2011	42.1904	-89.0018	8	3	1
Kishwaukee	Kishwaukee River	22-Aug-2011	42.2569	-88.9112	8	1	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Kishwaukee	Kishwaukee River	24-Aug-2011	42.2550	-88.8554	10	0	6
Kishwaukee	Kishwaukee River [2]	8-Aug-2012	42.1808	-89.0055	10	0	0
Kishwaukee	Kishwaukee River [4]	12-Jul-2012	42.2613	-88.7254	13	0	2
Kishwaukee	Mayberry/Rossetter Farm Creek [4]	10-Jul-2012	42.1994	-88.9563	1	2	0
Kishwaukee	Moakler Creek [4]	10-Jul-2012	42.4020	-88.6669	0	0	0
Kishwaukee	Mosquito Creek [4]	10-Jul-2012	42.3100	-88.9199	0	0	0
Kishwaukee	North Branch Kishwaukee River	9-Aug-2011	42.3130	-88.5531	5	1	4
Kishwaukee	North Branch Kishwaukee River [4]	10-Jul-2012	42.2734	-88.5500	7	0	2
Kishwaukee	Owens Creek [4]	7-Aug-2012	42.0664	-88.8756	6	0	0
Kishwaukee	Piscasaw Creek	10-Aug-2011	42.4128	-88.6754	4	0	4
Kishwaukee	Rush Creek	24-Aug-2011	42.2801	-88.6861	4	0	2
Kishwaukee	South Branch Kishwaukee River	8-Aug-2011	41.8779	-88.8075	5	0	0
Kishwaukee	South Branch Kishwaukee River	24-Aug-2011	42.1379	-88.9338	6	4	1
Kishwaukee	South Branch Kishwaukee River	25-Aug-2011	41.9980	-88.7244	7	0	0
Kishwaukee	South Branch Kishwaukee River [2]	12-Jul-2012	42.1985	-88.9603	12	2	1
Kishwaukee	South Branch Kishwaukee River [4]	8-Aug-2012	42.1031	-88.7846	12	1	2
Kishwaukee	Union Ditch # 3	25-Aug-2011	41.9336	-88.6012	5	1	1
Lake Michigan Tributaries	Butterfield Creek	29-Jun-2011	41.5421	-87.6358	2	0	5
Lake Michigan Tributaries	Dead Dog River	27-Jun-2011	42.4828	-87.8181	0	0	0
Lake Michigan Tributaries	Kellogg Creek	27-Jun-2011	42.4643	-87.8104	0	0	0
Lake Michigan Tributaries	Middle Fork	28-Jun-2011	42.1870	-87.8490	2	0	0
Lake Michigan Tributaries	North Branch Chicago River [4]	28-Jun-2011	42.0798	-87.7778	3	1	0
Lake Michigan Tributaries	North Creek	29-Jun-2011	41.5568	-87.5957	2	0	0
Lake Michigan Tributaries	Plum Creek	29-Jun-2011	41.4376	-87.5659	5	0	1
Lake Michigan Tributaries	Thorn Creek	29-Jun-2011	41.5060	-87.6447	0	0	2
Lake Michigan Tributaries	Tinley Creek	29-Jun-2011	41.6466	-87.7664	4	0	2
Lake Michigan Tributaries	Waukegan River	27-Jun-2011	42.3581	-87.8359	0	0	0
Lake Michigan Tributaries	West Fork North Branch	28-Jun-2011	42.1275	-87.8242	2	0	0
LaMoine	Baptist Creek	10-Aug-2010	40.5212	-90.9565	0	0	1
LaMoine	Bronson Creek [4]	11-Sept-2012	40.3245	-90.9188	3	0	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
LaMoine	Camp Creek	10-Aug-2010	40.3197	-90.7543	4	2	1
LaMoine	Cedar Creek	9-Aug-2010	40.1743	-90.8565	1	1	0
LaMoine	Drowning Fork	31-Aug-2010	40.5289	-90.5417	4	5	0
LaMoine	East Fork La Moine River [4]	11-Sept-2012	40.4058	-90.9274	11	1	0
LaMoine	East Fork La Moine River [4]	12-Sept-2012	40.4786	-90.6871	10	1	1
LaMoine	East Fork LaMoine River	31-Aug-2010	40.4338	-90.8240	8	2	0
LaMoine	East Fork LaMoine River	31-Aug-2010	40.5115	-90.5607	7	1	1
LaMoine	Farmers Fork	31-Aug-2010	40.5282	-90.5687	7	0	1
LaMoine	Grindstone Creek	9-Aug-2010	40.3017	-90.7535	7	1	1
LaMoine	Grindstone Creek [4]	11-Sept-2012	40.2948	-90.7718	9	1	0
LaMoine	Killjordan Creek [4]	11-Sept-2012	40.4028	-90.7344	1	0	0
LaMoine	La Moine River	25-Jul-2012	40.0248	-90.6314	9	0	0
LaMoine	La Moine River	29-Aug-2011	40.2355	-90.7823	9	0	0
LaMoine	La Moine River	29-Aug-2011	40.3436	-90.9137	14	1	0
LaMoine	LaHarpe Creek	10-Aug-2010	40.4801	-91.0203	3	1	1
LaMoine	LaMoine River	30-Aug-2011	40.5316	-91.0409	5	0	1
LaMoine	Little Creek	10-Aug-2010	40.5339	-90.9648	0	0	2
LaMoine	Missouri Creek	9-Aug-2010	40.1238	-90.8148	0	0	1
LaMoine	Rock Creek	10-Aug-2010	40.4828	-91.0813	0	2	2
LaMoine	Troublesome Creek	31-Aug-2010	40.3752	-90.7913	3	0	3
LaMoine	Williams Creek	9-Aug-2010	40.2368	-90.8629	0	2	3
Little Wabash	Big Creek	13-Jul-2010	38.6863	-88.0986	1	2	1
Little Wabash	Big Creek (North)	12-Jun-2012	39.0124	-88.6325	1	0	0
Little Wabash	Big Creek (South)	29-Aug-2012	38.3144	-88.1268	4	1	0
Little Wabash	Big Muddy Creek	8-Sept-2010	38.6868	-88.2840	0	0	1
Little Wabash	Big Muddy Creek	8-Sept-2010	38.7838	-88.3277	9	0	5
Little Wabash	Big Muddy Diversion Ditch	8-Sept-2010	38.6946	-88.2942	4	2	3
Little Wabash	Buck Creek	13-Jun-2012	38.7074	-88.4746	2	0	1
Little Wabash	Deer Creek	8-Sept-2010	38.4813	-88.3754	1	0	0
Little Wabash	Dieterich Creek	13-Jul-2010	39.0280	-88.4374	0	0	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Little Wabash	Dismal Creek [4]	16-Aug-2012	38.8383	-88.5891	4	2	1
Little Wabash	East Branch Green Creek	26-Jul-2010	39.1977	-88.4938	0	0	0
Little Wabash	Elm River	7-Sept-2010	38.4408	-88.2583	5	4	0
Little Wabash	Elm River	8-Sept-2010	38.5736	-88.3680	7	0	3
Little Wabash	Fox River	9-Sept-2010	38.6272	-88.1517	4	2	0
Little Wabash	Fox River	29-Aug-2012	38.7741	-88.1050	2	2	0
Little Wabash	Fulfer Creek [4]	12-Jun-2012	38.9982	-88.6282	1	0	2
Little Wabash	Hurricane Creek	16-Aug-2012	38.7599	-88.2766	4	1	1
Little Wabash	Little Salt Creek [4]	14-Jun-2012	39.0422	-88.5074	0	0	0
Little Wabash	Little Wabash River	27-Jul-2010	39.3973	-88.4436	1	0	2
Little Wabash	Little Wabash River	7-Sept-2010	38.9900	-88.5892	3	1	1
Little Wabash	Little Wabash River	7-Sept-2010	39.1036	-88.5925	0	2	3
Little Wabash	Little Wabash River	9-Sept-2010	37.9125	-88.1281	9	3	3
Little Wabash	Little Wabash River	9-Sept-2010	38.7725	-88.4977	11	2	0
Little Wabash	Little Wabash River	16-Aug-2011	38.0950	-88.1592	15	0	0
Little Wabash	Little Wabash River	6-Sep-2011	38.7342	-88.4557	13	1	2
Little Wabash	Little Wabash River	6-Sep-2011	38.8592	-88.5687	14	0	2
Little Wabash	Little Wabash River	11-Jun-2012	39.2975	-88.5176	6	1	7
Little Wabash	Little Wabash River	16-Aug-2012	38.8302	-88.5443	12	2	0
Little Wabash	Little Wabash River [1]	13-Jun-2012	38.7725	-88.4977	14	0	1
Little Wabash	Little Wabash River [2]	14-Aug-2012	38.7929	-88.5249	14	6	3
Little Wabash	Little Wabash River [2]	14-Aug-2012	38.7995	-88.5347	16	2	0
Little Wabash	Little Wabash River [2]	14-Aug-2012	38.8038	-88.5399	16	3	0
Little Wabash	Little Wabash River [3]	29-Aug-2012	38.0950	-88.1592	14	0	0
Little Wabash	Little Wabash River [4]	12-Jun-2012	39.2732	-88.5555	1	0	3
Little Wabash	Little Wabash River [4]	14-Jun-2012	39.1971	-88.5753	1	0	7
Little Wabash	Martin Creek	29-Aug-2012	38.4678	-88.3260	4	1	0
Little Wabash	Raccoon Creek [4]	13-Jun-2012	38.6116	-88.4718	6	0	0
Little Wabash	Salt Creek	14-Jun-2012	39.1221	-88.5237	1	0	1
Little Wabash	Salt Creek [4]	12-Jun-2012	38.9878	-88.5432	1	0	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Little Wabash	Second Salt Creek	27-Jul-2010	39.1547	-88.4785	0	0	1
Little Wabash	Sugar Creek	8-Sept-2010	38.5702	-88.0938	0	0	0
Little Wabash	Village Creek	7-Sept-2010	38.4149	-88.1658	4	1	3
Little Wabash	Weather Creek	16-Aug-2012	38.8135	-88.3231	0	3	2
Little Wabash	West Branch	11-Jun-2012	39.3458	-88.5620	3	0	0
Little Wabash	West Branch Little Wabash	27-Jul-2010	39.3165	-88.5447	0	0	4
Lower Illinois	Apple Creek	26-Jul-2011	39.4475	-90.2551	1	0	1
Lower Illinois	Apple Creek	22-Aug-2011	39.3594	-90.4954	12	0	0
Lower Illinois	Apple Creek [4]	24-Jul-2012	39.3787	-90.4091	11	0	2
Lower Illinois	Bear Creek [4]	24-Jul-2012	39.4038	-90.3207	0	0	0
Lower Illinois	Blue Creek	25-Jul-2011	39.6633	-90.6428	0	0	5
Lower Illinois	Blue Creek [4]	25-Jul-2012	39.6453	-90.6795	7	1	0
Lower Illinois	Bonpas Creek	3-Aug-2011	38.3864	-87.9754	5	0	3
Lower Illinois	Bonpas Creek	3-Aug-2011	38.5589	-87.9559	2	0	1
Lower Illinois	Fishhook Creek	27-Jul-2011	39.8529	-90.9568	0	0	0
Lower Illinois	French Creek [4]	3-Aug-2011	38.2303	-88.0178	2	0	1
Lower Illinois	Hodges Creek [4]	24-Jul-2012	39.2838	-90.1392	5	1	4
Lower Illinois	Hurricane Creek North [4]	24-Jul-2012	39.4457	-90.5316	0	0	0
Lower Illinois	Hutson Creek	4-Aug-2011	39.0851	-87.6601	2	1	0
Lower Illinois	Indian Creek	28-Jul-2011	39.8600	-90.3324	1	1	5
Lower Illinois	Macoupin Creek	26-Jul-2011	39.2107	-90.4277	5	0	3
Lower Illinois	Macoupin Creek	26-Jul-2011	39.2174	-90.2202	3	0	2
Lower Illinois	Macoupin Creek	28-Jul-2011	39.3166	-89.7730	3	1	0
Lower Illinois	Macoupin Creek [4]	23-Jul-2012	39.1638	-90.5030	6	0	0
Lower Illinois	Mauvaise Terre Creek	27-Jul-2011	39.7209	-90.5019	6	4	4
Lower Illinois	Mauvaise Terre Creek [4]	26-Jul-2012	39.7314	-90.3979	7	0	3
Lower Illinois	McKee Creek	27-Jul-2011	39.8411	-90.8644	0	0	6
Lower Illinois	McKee Creek	27-Jul-2011	39.9280	-91.0304	2	1	3
Lower Illinois	Mckee Creek [4]	25-Jul-2012	39.8783	-90.7008	11	0	0
Lower Illinois	Middle Fork McKee Creek	25-Jul-2011	39.7929	-90.7170	0	0	3

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Lower Illinois	Otter Creek	26-Jul-2011	39.3058	-90.0791	0	0	3
Lower Illinois	Raccoon Creek	4-Aug-2011	38.5757	-87.7249	4	0	0
Lower Illinois	Rubicon Creek [4]	23-Jul-2012	39.3199	-90.1992	0	0	0
Lower Illinois	Sandy Creek	27-Jul-2011	39.5664	-90.4865	0	0	6
Lower Illinois	Solomon Creek [4]	24-Jul-2012	39.3612	-90.0369	0	0	1
Lower Illinois	South Fork McKee Creek	25-Jul-2011	39.7594	-90.7259	0	0	0
Lower Illinois	Taylor Creek [4]	23-Jul-2012	39.2569	-90.2494	0	2	1
Mackinaw	Bray Creek	7-Jun-2010	40.5443	-88.6267	4	1	0
Mackinaw	Bray Creek [1]	14-Sep-2011	40.5443	-88.6267	5	1	1
Mackinaw	Crooked Creek	6-Jul-2010	40.6032	-88.7696	4	0	1
Mackinaw	Denman Creek	10-Jun-2010	40.6407	-89.1252	1	0	1
Mackinaw	Dillon Creek	12-Jul-2010	40.4651	-89.5705	0	0	1
Mackinaw	East Branch Panther Creek	10-Jun-2010	40.7700	-89.0595	11	1	1
Mackinaw	Frog Alley	7-Jun-2010	40.5438	-88.5512	6	0	0
Mackinaw	Frog Alley [1]	7-Jun-2011	40.5438	-88.5512	4	1	0
Mackinaw	Henline Creek	7-Jun-2010	40.5956	-88.6855	7	1	0
Mackinaw	Hickory Grove Ditch	1-Sept-2010	40.4788	-89.7348	0	2	4
Mackinaw	Little Mackinaw River	12-Jul-2010	40.4519	-89.4161	2	0	3
Mackinaw	Mackinaw River	14-Jul-2010	40.5706	-89.3185	10	1	3
Mackinaw	Mackinaw River	15-Jul-2010	40.5542	-88.5739	13	2	0
Mackinaw	Mackinaw River	15-Jul-2010	40.5711	-88.6751	12	1	0
Mackinaw	Mackinaw River	19-Jul-2010	40.6483	-88.8627	10	2	6
Mackinaw	Mackinaw River	22-Jul-2010	40.6396	-89.1481	12	0	7
Mackinaw	Mackinaw River	26-Jul-2010	40.4392	-89.4679	2	3	11
Mackinaw	Mackinaw River	26-Jul-2010	40.4475	-89.6910	4	1	13
Mackinaw	Mackinaw River	27-Jul-2010	40.6248	-89.2396	6	3	8
Mackinaw	Mackinaw River [2]	12-Jul-2012	40.6784	-88.9423	13	0	2
Mackinaw	Mackinaw River [4]	12-Jul-2012	40.6620	-89.1007	12	0	4
Mackinaw	Money Creek	6-Jul-2010	40.5941	-88.8888	3	2	0
Mackinaw	Mud Creek	13-Jul-2010	40.5408	-89.4253	2	0	3

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Mackinaw	Panther Creek	22-Jul-2010	40.6708	-89.1804	13	1	2
Mackinaw	Panther Creek	27-Jul-2010	40.7058	-89.1374	13	2	0
Mackinaw	Prairie Creek	12-Jul-2010	40.4680	-89.4447	1	1	5
Mackinaw	Six Mile Creek	9-Jun-2010	40.5764	-88.9774	3	1	0
Mackinaw	Turkey Creek	6-Jul-2010	40.6434	-88.7970	7	2	2
Mackinaw	Walnut Creek	13-Jul-2010	40.6492	-89.2276	7	1	4
Mackinaw	West Branch Panther Creek	14-Jul-2010	40.7733	-89.1186	11	0	0
Middle Illinois	Copperas Creek	14-Jul-2011	40.5206	-89.9144	1	6	2
Middle Illinois	Crow Creek East [4]	25-Jun-2012	40.9324	-89.4288	0	0	1
Middle Illinois	Crow Creek East [4]	25-Jun-2012	40.9545	-89.3093	0	1	2
Middle Illinois	Farm Creek	16-Jun-2011	40.6682	-89.5206	0	0	1
Middle Illinois	Jubilee Creek	14-Jun-2011	40.8187	-89.7825	1	3	2
Middle Illinois	Kickapoo Creek	14-Jun-2011	40.8217	-89.7553	0	3	5
Middle Illinois	Kickapoo Creek	14-Jul-2011	40.7113	-89.6537	0	4	2
Middle Illinois	Kickapoo Creek [4]	26-Jun-2012	40.8407	-89.6804	1	1	0
Middle Illinois	Main Ditch	13-Jul-2011	40.3377	-89.7340	0	0	0
Middle Illinois	North Branch Crow Creek [4]	19-Jul-2012	41.0001	-89.1903	7	2	0
Middle Illinois	Otter Creek	12-Sep-2011	40.2886	-90.2379	3	0	0
Middle Illinois	Otter Creek [4]	28-Jun-2012	40.2745	-90.3642	0	3	0
Middle Illinois	Quiver Creek	13-Jul-2011	40.3233	-89.9281	0	0	0
Middle Illinois	Richland Creek [4]	25-Jun-2012	40.8796	-89.4355	0	0	0
Middle Illinois	Sandy Creek [4]	17-Jul-2012	41.0898	-89.1510	8	4	2
Middle Illinois	Sandy Creek [4]	17-Jul-2012	41.0919	-89.2039	4	1	1
Middle Illinois	Senachwine Creek [4]	26-Jun-2012	40.9713	-89.5149	2	0	1
Middle Illinois	South Branch Crow Creek [2]	19-Jul-2012	40.9410	-89.1606	2	0	3
Middle Illinois	South Branch Otter Creek [4]	28-Jun-2012	40.2670	-90.3615	2	2	0
Middle Illinois	Sugar Creek	13-Jul-2011	40.2313	-90.4927	0	2	1
Middle Illinois	Walnut Creek [4]	26-Jun-2012	40.8079	-89.9470	1	0	0
Middle Illinois	West Branch Lamarsh Creek	14-Jul-2011	40.5914	-89.7084	0	0	1
Middle Illinois	West Fork Kickapoo Creek	14-Jun-2011	40.7663	-89.9093	3	2	7

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Middle Mississippi	Bear Creek [4]	13-Sept-2012	40.1203	-91.3984	9	0	0
Middle Mississippi	Bear Creek [4]	12-Sept-2012	40.2339	-91.2643	6	2	0
Middle Mississippi	Bear Creek [4]	12-Sept-2012	40.3139	-91.2388	5	0	1
Middle Mississippi	Honey Creek [4]	25-Jul-2012	39.5614	-90.8239	0	0	0
Middle Mississippi	Rock Creek [4]	13-Sept-2012	40.0428	-91.3806	0	0	0
Middle Mississippi	Slater Creek [4]	12-Sept-2012	40.2789	-91.1442	1	0	0
Middle Mississippi	South Fork Bear Creek [4]	13-Sept-2012	40.0869	-91.1550	2	0	0
Miss South Central	Cahokia Canal	28-Jul-2010	38.6672	-90.0650	4	1	0
Miss South Central	Cahokia Creek	24-Jun-2010	39.0787	-89.7816	1	1	2
Miss South Central	Cahokia Creek	28-Jul-2010	38.8244	-89.9747	1	0	1
Miss South Central	Canteen Creek	28-Jul-2010	38.6658	-90.0650	1	1	1
Miss South Central	Carr Creek	26-Jul-2010	38.4422	-90.2199	0	0	0
Miss South Central	East Fork Wood River	23-Jun-2010	38.9236	-90.0686	0	1	0
Miss South Central	Fountain Creek	29-Jul-2010	38.3261	-90.1958	0	0	1
Miss South Central	Fountain Creek	29-Jul-2010	38.3647	-90.2328	1	0	1
Miss South Central	Harding Ditch	29-Jul-2010	38.5950	-90.0883	0	0	2
Miss South Central	Indian Creek	28-Jul-2010	38.8497	-90.0333	0	1	3
Miss South Central	Maeystown Creek	28-Jul-2010	38.2131	-90.2642	0	0	1
Miss South Central	Mill Creek	20-Sept-2010	38.9528	-90.3044	0	0	2
Miss South Central	Piasa Creek	24-Jun-2010	38.9876	-90.2603	0	0	1
Miss South Central	Prairie DuPont	29-Jul-2010	38.4852	-90.1016	0	0	1
Miss South Central	Sherry Creek	23-Jun-2010	38.9193	-89.9059	0	0	4
Miss South Central	West Fork Wood River	23-Jun-2010	38.9356	-90.1281	0	0	2
Miss South Central	Wood River	20-Sept-2010	38.8834	-90.1232	0	0	0
Mississippi Central	Bay Creek	23-Jul-2009	39.5850	-90.7130	0	1	1
Mississippi Central	Bear Creek	14-Jul-2009	40.2838	-91.2518	4	2	0
Mississippi Central	Bear Creek	15-Jul-2009	40.1638	-91.3091	2	3	0
Mississippi Central	Burton Creek	14-Jul-2009	39.8691	-91.3084	0	0	0
Mississippi Central	Hadley Creek	13-Jul-2009	39.7023	-91.1297	0	0	0
Mississippi Central	Honey Creek	22-Jul-2009	39.5164	-90.7529	0	0	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Mississippi Central	Kiser Creek	13-Jul-2009	39.6329	-91.0921	0	0	0
Mississippi Central	McCraney Creek	13-Jul-2009	39.7542	-91.1500	0	0	0
Mississippi Central	Mill Creek	14-Jul-2009	39.8781	-91.3263	0	1	0
Mississippi Central	Six Mile Creek	22-Jul-2009	39.4885	-90.8969	0	0	0
Mississippi Central	South Fork Bear Creek	15-Jul-2009	40.1451	-91.2323	1	2	0
Mississippi Central	The Sny	22-Jul-2009	39.5061	-90.9843	0	2	4
Mississippi South	Dutch Creek	8-Jul-2009	37.4410	-89.3080	0	0	0
Mississippi South	Clear Creek	25-Jun-2009	37.5346	-89.3356	0	0	0
Mississippi South	Cox Creek	21-Jul-2009	37.9940	-89.6672	1	4	1
Mississippi South	Green Creek	25-Jun-2009	37.4570	-89.3260	0	0	0
Mississippi South	Hutchings Creek	25-Jun-2009	37.5320	-89.3960	0	0	0
Mississippi South	Little Mary's River	22-Jul-2009	37.9485	-89.7658	0	0	3
Mississippi South	Mary's River	21-Jul-2009	37.9562	-89.7062	3	2	0
Mississippi South	Mary's River	21-Jul-2009	38.0337	-89.6697	2	2	0
Mississippi South	Mary's River [1]	1-Oct-2009	37.9562	-89.7062	5	0	0
Mississippi South	Mary's River [4]	28-Aug-2012	37.9189	-89.7323	5	1	1
Mississippi South	Mary's River [4]	28-Aug-2012	38.0008	-89.6796	1	3	1
Mississippi South	Maxwell Creek	20-Jul-2009	38.0987	-89.6576	0	4	0
Mississippi South	Mill Creek [2]	28-Aug-2012	37.9092	-89.7249	4	1	0
Mississippi South	North Fork [4]	28-Aug-2012	38.0111	-89.6458	0	1	0
Mississippi South	Piney Branch	20-Jul-2009	37.9010	-89.6500	0	0	0
Mississippi South	Running Lake Ditch	23-Jul-2009	37.4471	-89.4015	3	1	0
Mississippi South	Sammons Creek	7-Jul-2009	37.2300	-89.4290	0	0	0
Mississippi South	Sexton Creek	7-Jul-2009	37.2698	-89.4055	0	0	0
N Central Mississippi	Camp Creek	14-Sept-2009	40.6105	-91.1270	0	0	1
N Central Mississippi	Camp Creek East [4]	31-Jul-2012	41.2690	-90.5160	9	0	0
N Central Mississippi	Cedar Creek	15-Sept-2009	40.9661	-90.6693	6	1	2
N Central Mississippi	Cedar Creek	16-Sept-2009	40.9223	-90.4866	0	2	0
N Central Mississippi	Cedar Creek [4]	20-Aug-2012	41.0056	-90.7863	13	2	2
N Central Mississippi	Copperas Creek	4-Aug-2009	41.3728	-90.8992	0	1	1

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
N Central Mississippi	Edwards River [4]	31-Jul-2012	41.2289	-90.7326	8	3	0
N Central Mississippi	Edwards River [4]	31-Jul-2012	41.2589	-90.5181	1	2	2
N Central Mississippi	Edwards River [4]	21-Aug-2012	41.2698	-90.3392	2	2	1
N Central Mississippi	Eliza Creek	4-Aug-2009	41.2786	-90.9633	0	2	1
N Central Mississippi	Ellison Creek	14-Sept-2009	40.7858	-90.9881	6	0	2
N Central Mississippi	Henderson Creek	15-Sept-2009	40.9880	-90.8765	4	2	1
N Central Mississippi	Henderson Creek	15-Sept-2009	41.0295	-90.6097	3	3	1
N Central Mississippi	Henderson Creek [4]	30-Jul-2012	41.0458	-90.6542	6	3	1
N Central Mississippi	Henderson Creek [4]	30-Jul-2012	41.0482	-90.4242	1	0	0
N Central Mississippi	Henderson Creek [4]	21-Aug-2012	41.0341	-90.7860	7	1	0
N Central Mississippi	Honey Creek	14-Sept-2009	40.6916	-91.0455	0	1	1
N Central Mississippi	North Henderson Creek	3-Aug-2009	41.1008	-90.6875	4	1	0
N Central Mississippi	North Henderson Creek [4]	21-Aug-2012	41.0408	-90.8008	1	1	1
N Central Mississippi	Pope Creek	3-Aug-2009	41.1430	-90.7835	5	3	3
N Central Mississippi	Smith Creek	15-Sept-2009	40.9297	-90.9101	0	0	0
N Central Mississippi	South Henderson Creek	15-Sept-2009	40.8689	-90.9535	3	1	2
N Central Mississippi	South Henderson Creek [4]	20-Aug-2012	40.8569	-90.8726	2	1	1
Ohio River	Wabash River [2]	15-Aug-2012	38.2892	-87.8675	16	1	2
Ohio River	Wabash River [2]	15-Aug-2012	38.5024	-87.6774	14	2	0
Ohio River Tributaries	7 mile Creek	27-May-2010	37.1749	-88.6257	0	0	0
Ohio River Tributaries	Bay Creek	3-Jun-2010	37.4627	-88.7076	1	0	2
Ohio River Tributaries	Bay Creek Ditch	16-Jun-2010	37.3250	-88.6337	5	0	1
Ohio River Tributaries	Big Creek	17-Jun-2010	37.4981	-88.3275	0	0	0
Ohio River Tributaries	Big Grand Pierre Creek	9-Jun-2010	37.5003	-88.4994	8	0	1
Ohio River Tributaries	Big Grand Pierre Creek	21-Jun-2010	37.4827	-88.4404	3	1	0
Ohio River Tributaries	Dog Creek	27-May-2010	37.2038	-88.4947	0	0	0
Ohio River Tributaries	Flat Lick Branch	8-Jun-2010	37.3621	-88.6095	6	0	0
Ohio River Tributaries	Hayes Creek	3-Jun-2010	37.4429	-88.7008	0	0	0
Ohio River Tributaries	Hayes Creek	4-Jun-2010	37.4559	-88.6682	0	0	0
Ohio River Tributaries	Hayes Creek	16-Jul-2010	37.4638	-88.6306	5	0	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Ohio River Tributaries	Johnson Creek	8-Jun-2010	37.3871	-88.7786	4	1	0
Ohio River Tributaries	Lusk Creek	3-Jun-2010	37.5061	-88.5365	1	0	0
Ohio River Tributaries	Lusk Creek	4-Jun-2010	37.4722	-88.5472	2	0	2
Ohio River Tributaries	Lusk Creek	29-Jun-2010	37.4869	-88.5354	6	1	0
Ohio River Tributaries	Massac Creek	27-May-2010	37.1694	-88.7152	0	0	0
Ohio River Tributaries	Sugar Creek	10-Jun-2010	37.4168	-88.6714	0	0	0
Ohio River Tributaries	Three mile Creek	25-May-2010	37.4422	-88.3738	0	0	0
Ohio River Tributaries	Weaver Creek	27-May-2010	37.1694	-88.7184	0	0	0
Pecatonica	Cedar Creek	22-Jun-2010	42.3859	-89.6129	2	0	0
Pecatonica	Coolidge Creek	13-Sept-2010	42.3402	-89.2895	2	0	0
Pecatonica	Crane Grove Creek	21-Jun-2010	42.2369	-89.6048	2	0	1
Pecatonica	East Branch Richland Creek	22-Jun-2010	42.5036	-89.6131	0	1	0
Pecatonica	Lena Creek [4]	30-Aug-2012	42.3282	-89.8444	1	1	2
Pecatonica	North Branch Otter Creek	22-Jun-2010	42.4703	-89.3827	0	0	0
Pecatonica	Otter Creek	28-Aug-2012	42.4484	-89.2838	0	2	0
Pecatonica	Pecatonica River	30-Aug-2011	42.4929	-89.7902	12	0	1
Pecatonica	Pecatonica River	1-Sep-2011	42.3726	-89.7088	11	0	1
Pecatonica	Pecatonica River	1-Sep-2011	42.4315	-89.7364	6	0	3
Pecatonica	Pecatonica River	27-Aug-2012	42.3182	-89.3653	7	1	1
Pecatonica	Pecatonica River	28-Aug-2012	42.3079	-89.6340	6	2	2
Pecatonica	Pecatonica River	28-Aug-2012	42.4279	-89.1954	10	1	0
Pecatonica	Pink Creek	24-Jun-2010	42.3527	-89.3977	0	0	0
Pecatonica	Raccoon Creek	23-Jun-2010	42.4581	-89.1278	4	2	3
Pecatonica	Raccoon Creek	23-Jun-2010	42.4769	-89.1385	4	0	3
Pecatonica	Richland Creek	30-Aug-2011	42.5042	-89.6446	0	0	0
Pecatonica	Richland Creek	28-Aug-2012	42.4689	-89.6488	3	1	0
Pecatonica	Rock Run	22-Jun-2010	42.4238	-89.4427	1	0	1
Pecatonica	Spring Creek [4]	29-Aug-2012	42.2426	-89.8042	1	0	0
Pecatonica	Sugar River	13-Sept-2010	42.4733	-89.2493	6	1	0
Pecatonica	Sumner Creek	24-Jun-2010	42.2878	-89.4119	0	0	1

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Pecatonica	Waddams Creek	21-Jun-2010	42.3992	-89.7627	1	0	1
Pecatonica	Yellow Creek	29-Aug-2011	42.2719	-89.6630	6	2	6
Pecatonica	Yellow Creek	31-Aug-2011	42.2491	-89.7175	9	2	3
Pecatonica	Yellow Creek	31-Aug-2011	42.2791	-89.6493	11	2	2
Pecatonica	Yellow Creek	31-Aug-2011	42.3121	-89.8585	5	0	0
Pecatonica	Yellow Creek [2]	27-Aug-2012	42.2714	-89.6304	12	2	1
Pecatonica	Yellow Creek [4]	30-Aug-2012	42.2783	-89.5769	13	4	1
Rock	Buffalo Creek	15-Jul-2009	41.9280	-89.6335	0	1	0
Rock	Dry Creek [4]	11-Jul-2012	42.4398	-89.0425	0	1	1
Rock	Elkhorn Creek	15-Jul-2009	41.9029	-89.6963	4	2	2
Rock	Elkhorn Creek [4]	13-Aug-2012	42.0105	-89.7340	1	1	1
Rock	Franklin Creek	7-Jul-2009	41.8594	-89.3543	1	0	2
Rock	Keith Creek	23-Jul-2009	42.2560	-89.0845	0	0	2
Rock	Kent Creek	23-Jul-2009	42.3080	-89.1439	1	2	0
Rock	Kinnikinnick Creek	16-Jul-2009	42.4196	-88.9197	0	2	0
Rock	Kyte River	14-Jul-2009	41.9369	-89.1565	9	1	0
Rock	Kyte River	14-Jul-2009	41.9648	-89.2444	10	0	1
Rock	Kyte River [2]	15-Aug-2012	41.9862	-89.2945	13	0	2
Rock	Leaf River	8-Jul-2009	42.1441	-89.4669	2	1	0
Rock	Leaf River [4]	15-Aug-2012	42.0986	-89.3221	0	0	0
Rock	Middle Creek [4]	15-Aug-2012	42.1539	-89.2405	1	0	0
Rock	North Kinnikinnick Creek [4]	11-Jul-2012	42.4283	-89.0133	0	2	0
Rock	North Kinnikinnick Creek [4]	11-Jul-2012	42.4352	-88.9834	3	0	0
Rock	Pine Creek	7-Jul-2009	41.9905	-89.4663	4	2	3
Rock	Rock Creek	4-Aug-2009	41.8158	-89.9801	0	0	0
Rock	Rock River	22-Jul-2009	41.7487	-89.8132	13	3	4
Rock	Rock River	22-Jul-2009	41.8338	-89.5189	13	0	6
Rock	Rock River	6-Aug-2009	41.6394	-90.0657	6	4	5
Rock	Rock River	6-Aug-2009	41.6844	-89.9624	10	3	4
Rock	Rock River	25-Aug-2009	42.1210	-89.2736	7	1	5

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Rock	Rock River	25-Aug-2009	42.2472	-89.1036	5	3	7
Rock	Rock River	26-Aug-2009	42.3876	-89.0462	2	2	8
Rock	Rock River [2]	20-Jul-2009	41.9812	-89.3273	7	0	0
Rock	Rock River [2]	20-Jul-2009	41.9942	-89.3241	7	0	0
Rock	Rock River [2]	20-Jul-2009	42.0050	-89.3251	5	1	4
Rock	Rock River [2]	20-Jul-2009	42.0119	-89.3251	6	0	3
Rock	Rock River [2]	21-Jul-2009	41.9260	-89.3904	8	2	7
Rock	Rock River [2]	21-Jul-2009	41.9607	-89.3813	8	1	5
Rock	Rock River [2]	22-Jul-2009	41.8507	-89.4693	2	0	2
Rock	Rock River [2]	22-Jul-2009	41.9007	-89.4206	9	2	2
Rock	Rock River [2]	22-Jul-2009	41.9052	-89.4817	2	3	9
Rock	Rock River [2]	4-Aug-2009	41.4564	-90.5812	6	7	5
Rock	Rock River [2]	6-Aug-2009	41.6860	-89.9240	9	3	7
Rock	Rock River [2]	26-Aug-2009	42.4285	-89.0443	7	1	10
Rock	Rock River [2]	2-Aug-2012	41.7833	-89.7011	17	0	0
Rock	Rock River [2]	14-Aug-2012	42.2047	-89.1094	9	5	1
Rock	Rock River [4]	11-Jul-2012	42.4508	-89.0715	11	2	1
Rock	Rock River [4]	2-Aug-2012	41.7728	-89.7472	11	2	3
Rock	Rock River [4]	2-Aug-2012	41.7819	-89.6226	6	0	0
Rock	Rock River [4]	14-Aug-2012	42.1814	-89.1814	10	1	2
Rock	Rock River [4]	14-Aug-2012	42.1866	-89.1302	12	3	0
Rock	Rock River [4]	15-Aug-2012	42.0964	-89.3204	10	0	3
Rock	Stillman Creek	8-Jul-2009	42.0632	-89.1664	5	0	1
Rock	Sugar Creek	15-Jul-2009	41.8439	-89.6639	0	0	0
Rock	Three Mile Branch	7-Jul-2009	41.7821	-89.6018	0	0	2
Saline	Battleford Creek	1-Jun-2010	37.6327	-88.5550	2	0	0
Saline	Bear Creek	24-May-2010	37.8902	-88.3314	3	0	1
Saline	Brush Creek	7-Jun-2010	37.8783	-88.3868	3	0	0
Saline	Cane Creek	7-Jun-2010	37.8683	-88.3161	4	0	0
Saline	Cypress Ditch	1-Jun-2010	37.7168	-88.2569	0	0	2

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Saline	Harris Creek	26-May-2010	37.5647	-88.2082	1	0	0
Saline	Hogg Creek	24-May-2010	37.9769	-88.5320	0	0	0
Saline	Little Saline River	16-Jun-2010	37.5887	-88.6981	0	0	0
Saline	Little Saline River	29-Sept-2010	37.6247	-88.9636	0	0	0
Saline	Little Saline River	29-Sept-2010	37.6283	-88.9512	0	0	0
Saline	Long Branch	24-May-2010	37.8994	-88.5316	3	0	0
Saline	Middle Fork Saline River	14-Jun-2010	37.7083	-88.4917	2	2	3
Saline	North Fork Saline River	25-Jun-2010	37.8678	-88.3511	11	3	0
Saline	North Fork Saline River	4-Aug-2010	37.7438	-88.3304	18	0	0
Saline	North Fork Saline River	5-Aug-2010	37.8273	-88.3263	8	1	1
Saline	Pond Creek	10-Jun-2010	37.6136	-88.6993	2	0	0
Saline	Rock Creek	21-May-2010	37.5660	-88.1629	0	0	0
Saline	Saline River	4-Aug-2010	37.7306	-88.3478	10	0	1
Saline	South Fork Saline River	29-Sept-2010	37.6379	-88.6775	0	0	0
Saline	Sugar Creek	14-Jun-2010	37.5677	-88.8004	1	0	0
Saline	Sugar Creek [4]	13-Aug-2012	37.6551	-88.7634	0	0	0
Sangamon	Bear Creek	27-Jul-2009	39.5097	-89.3968	0	0	0
Sangamon	Big Creek	13-Jul-2009	39.7853	-88.8520	1	4	2
Sangamon	Big Ditch	2-Sept-2009	40.2378	-88.3613	0	0	0
Sangamon	Big Ditch	2-Sept-2009	40.2674	-88.3276	9	1	0
Sangamon	Big Ditch	4-Jun-2010	40.2984	-88.2519	7	2	1
Sangamon	Brush Creek	27-Jul-2009	39.6475	-89.5858	0	0	0
Sangamon	Camp Creek	24-Jun-2009	40.0986	-88.4427	3	1	0
Sangamon	Camp Creek	18-Aug-2009	40.0582	-88.5204	6	4	1
Sangamon	Clary Creek	3-Aug-2009	40.0467	-89.9225	0	0	0
Sangamon	Coon Creek	23-Jun-2009	40.1243	-88.9986	0	1	1
Sangamon	Cox Creek	30-Jul-2009	40.0236	-90.1158	0	0	1
Sangamon	Cox Creek [4]	26-Jul-2012	39.9982	-90.0575	1	0	0
Sangamon	Crane Creek	3-Aug-2009	40.2297	-89.8767	2	0	0
Sangamon	Deer Creek	6-Aug-2009	40.1301	-89.2920	4	1	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Sangamon	Dickerson Slough	29-Jul-2009	40.4059	-88.3382	6	2	1
Sangamon	Drummer Creek	11-Jun-2009	40.4205	-88.3851	9	1	1
Sangamon	Fancy Creek	12-Aug-2009	39.8956	-89.6973	0	0	1
Sangamon	Finley Creek	13-Jul-2009	39.7407	-88.8926	0	0	1
Sangamon	Flat Branch	7-Aug-2009	39.5526	-89.2535	4	5	0
Sangamon	Friends Creek	24-Jun-2009	40.0492	-88.7561	1	0	0
Sangamon	Friends Creek	1-Sept-2009	40.0056	-88.8035	16	0	0
Sangamon	Friends Creek Ditch	24-Jun-2009	40.1012	-88.7233	3	2	0
Sangamon	Goose Creek	18-Aug-2009	40.0761	-88.6208	0	4	2
Sangamon	Horse Creek	14-Jul-2009	39.5797	-89.5589	0	0	0
Sangamon	Kickapoo Creek	16-Jul-2009	40.3119	-89.0142	5	1	2
Sangamon	Kickapoo Creek	29-Jul-2009	40.1733	-89.3759	9	2	3
Sangamon	Kickapoo Creek [2]	9-Jul-2010	40.3997	-88.8819	11	2	0
Sangamon	Kickapoo Creek [2]	23-Jul-2010	40.4384	-88.8665	5	2	1
Sangamon	Lake Fork	29-Jul-2009	40.0197	-89.4186	0	0	4
Sangamon	Lick Creek	13-Aug-2009	39.6767	-89.7864	0	0	1
Sangamon	Little Kickapoo Creek	16-Jul-2009	40.3452	-88.9786	6	2	1
Sangamon	Little Kickapoo Creek [1]	22-Jul-2009	40.3452	-88.9786	10	0	0
Sangamon	Little Kickapoo Creek [2]	9-Jul-2010	40.3647	-88.9638	7	0	3
Sangamon	Little Kickapoo Creek [2]	9-Jul-2010	40.3858	-88.9516	5	0	2
Sangamon	Lone Tree Creek	14-Aug-2009	40.3608	-88.4040	9	0	4
Sangamon	Lone Tree Creek [3]	12-Oct-2010	40.3608	-88.4040	8	4	1
Sangamon	Long Point Creek	16-Jul-2009	40.2667	-89.0152	6	2	1
Sangamon	Long Point Creek [3]	2-Aug-2012	40.2667	-89.0152	7	1	2
Sangamon	Middle Fork Sugar Creek	7-Jul-2009	40.4011	-89.2366	10	0	0
Sangamon	Mosquito Creek	27-Aug-2009	39.7993	-89.2457	1	1	10
Sangamon	North Fork Lake Fork	29-Jul-2009	39.9735	-89.2151	6	1	2
Sangamon	North Fork Salt Creek	18-Aug-2009	40.2824	-88.7730	7	0	6
Sangamon	North Fork Salt Creek [4]	2-Aug-2012	40.2243	-88.8207	5	2	2
Sangamon	North Fork Salt Creek [4]	2-Aug-2012	40.2533	-88.7951	13	0	1

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Sangamon	Owl Creek	22-Jun-2009	40.3252	-88.3530	1	1	0
Sangamon	Panther Creek	30-Jul-2009	40.0178	-90.1126	0	0	0
Sangamon	Panther Creek [4]	26-Jul-2012	39.9780	-90.0977	0	0	0
Sangamon	Phillippe Creek	22-Jun-2009	40.2231	-88.3512	0	0	0
Sangamon	Prairie Creek	16-Sept-2009	40.1792	-89.6072	3	1	5
Sangamon	Richland Creek	13-Aug-2009	39.8779	-89.8264	0	1	1
Sangamon	Rock Creek	13-Aug-2009	39.9316	-89.8025	0	0	0
Sangamon	Salt Creek	18-Aug-2009	40.2818	-88.6040	11	0	3
Sangamon	Salt Creek	27-Aug-2009	40.1022	-89.5508	5	4	9
Sangamon	Salt Creek	1-Sept-2009	40.1300	-89.3879	3	4	9
Sangamon	Salt Creek	16-Sept-2009	40.1336	-89.7354	6	0	13
Sangamon	Salt Creek	19-Sep-2011	40.1089	-89.0163	14	2	3
Sangamon	Sangamon River	12-Aug-2009	39.8428	-89.5478	5	4	0
Sangamon	Sangamon River	18-Sept-2009	40.3105	-88.3232	15	0	1
Sangamon	Sangamon River	18-Sept-2009	40.4103	-88.4795	10	2	0
Sangamon	Sangamon River	19-Sep-2011	40.0736	-88.5563	9	2	2
Sangamon	Sangamon River	21-Sep-2011	40.1915	-88.3971	13	1	1
Sangamon	Sangamon River [1]	21-Sep-2011	40.3105	-88.3232	13	1	1
Sangamon	Sangamon River [2]	23-Aug-2012	40.0023	-88.6467	3	13	0
Sangamon	Sangamon River [2]	15-Sept-2012	40.2035	-88.3873	14	0	4
Sangamon	Sangamon River [4]	10-Sept-2012	39.8309	-88.9762	9	2	6
Sangamon	South Fork Sangamon	11-Aug-2009	39.5678	-89.3791	9	3	0
Sangamon	Spring Creek	12-Aug-2009	39.8211	-89.6878	5	1	1
Sangamon	Stevens Creek	13-Jul-2009	39.8442	-89.0003	0	3	10
Sangamon	Sugar Creek	7-Jul-2009	40.4294	-89.0809	0	0	5
Sangamon	Sugar Creek	27-Jul-2009	39.6089	-89.7131	1	1	1
Sangamon	Sugar Creek	28-Jul-2009	40.2219	-89.4020	9	0	3
Sangamon	Sugar Creek	30-Jul-2009	40.1758	-89.5188	1	4	10
Sangamon	Sugar Creek [4]	30-Jul-2012	40.4585	-89.0416	0	0	0
Sangamon	Ten Mile Creek	6-Aug-2009	40.1295	-89.0476	1	0	8

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Sangamon	Timber Creek	23-Jun-2009	40.3607	-89.1373	8	1	1
Sangamon	Timber Creek [1]	1-Sep-2011	40.3607	-89.1373	11	0	1
Sangamon	West Branch Drummer	7-Jun-2011	40.4789	-88.4108	1	0	1
Sangamon	West Branch Drummer Creek	14-Aug-2009	40.4495	-88.4038	6	2	0
Sangamon	West Fork Sugar Creek	30-Jul-2009	40.3388	-89.3374	7	3	3
Sangamon	Wildcat Slough	8-Jun-2009	40.2985	-88.3276	7	1	1
Skillet Fork	Auxier Creek	1-Aug-2011	38.2456	-88.7120	5	1	0
Skillet Fork	Brush Creek	13-Jun-2011	38.4758	-88.6347	11	2	1
Skillet Fork	Dry Fork	1-Aug-2011	38.3627	-88.4947	2	0	4
Skillet Fork	Four Mile Creek	1-Aug-2011	38.3155	-88.6589	2	1	1
Skillet Fork	Horse Creek	13-Jun-2011	38.4237	-88.7561	4	0	2
Skillet Fork	Puncheon Creek	2-Aug-2011	38.3716	-88.7000	2	0	2
Skillet Fork	Skillet Fork	2-Aug-2011	38.5194	-88.7271	6	0	0
Skillet Fork	Skillet Fork	2-Aug-2011	38.5892	-88.7472	13	0	1
Skillet Fork	Skillet Fork	2-Aug-2011	38.7082	-88.7031	3	0	2
Skillet Fork	Skillet Fork	25-Aug-2011	38.1636	-88.2839	10	0	0
Skillet Fork	Skillet Fork	25-Aug-2011	38.4394	-88.6264	15	1	0
Spoon	Barker Creek	5-Aug-2010	40.4713	-90.3930	0	2	0
Spoon	Big Creek	5-Aug-2010	40.4588	-90.1335	3	3	2
Spoon	Brush Creek	22-Jul-2010	40.8014	-90.3180	1	3	0
Spoon	Camp Run	20-Jul-2010	41.0094	-89.7351	1	1	7
Spoon	Cedar Creek	2-Aug-2010	40.6926	-90.3363	10	0	3
Spoon	Cedar Creek	4-Aug-2010	40.7814	-90.5705	3	0	1
Spoon	Cedar Fork	2-Aug-2010	40.7590	-90.4678	6	1	0
Spoon	Coal Creek	2-Aug-2010	40.6580	-90.2337	0	2	2
Spoon	Coopers Defeat Creek	20-Jul-2010	41.1497	-89.7351	1	1	1
Spoon	Court Creek	21-Jul-2010	40.9294	-90.1393	3	0	3
Spoon	Court Creek [2]	27-Jun-2012	40.9187	-90.1119	4	5	0
Spoon	East Fork Spoon River	19-Jul-2010	41.1610	-89.7351	8	2	2
Spoon	French Creek	21-Jul-2010	40.8088	-90.0624	8	0	2

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Spoon	Haw Creek	22-Jul-2010	40.7722	-90.2221	7	1	1
Spoon	Haw Creek	22-Jul-2010	40.8532	-90.2470	4	3	0
Spoon	Indian Creek	21-Jul-2010	41.0404	-89.8347	6	1	4
Spoon	Littlers Creek	22-Jul-2010	40.7359	-90.2006	6	2	0
Spoon	Negro Creek	23-Jul-2010	40.7305	-90.5448	6	0	0
Spoon	North Creek	21-Jul-2010	40.9616	-90.2100	2	2	1
Spoon	Prince Run	20-Jul-2010	40.9597	-89.7724	4	0	2
Spoon	Put Creek	4-Aug-2010	40.5236	-90.2691	2	3	0
Spoon	Shaw Creek	4-Aug-2010	40.5198	-90.3806	3	2	2
Spoon	Slug Run [4]	28-Jun-2012	40.4734	-90.1439	4	5	0
Spoon	Spoon River	3-Aug-2010	40.8541	-90.1089	11	0	5
Spoon	Spoon River	3-Aug-2010	40.9071	-90.0857	6	3	3
Spoon	Spoon River	3-Aug-2010	41.0636	-89.7957	6	5	4
Spoon	Spoon River	30-Aug-2010	40.5319	-90.3109	4	4	5
Spoon	Spoon River	30-Aug-2010	40.8075	-90.1333	6	4	2
Spoon	Spoon River	30-Aug-2010	40.9582	-89.9794	11	2	6
Spoon	Spoon River	1-Sept-2010	40.3372	-90.1300	3	2	2
Spoon	Spoon River	1-Sept-2010	40.4027	-90.3218	2	2	6
Spoon	Spoon River [1]	12-Sep-2011	40.3372	-90.1300	4	1	0
Spoon	Spoon River [2]	3-Aug-2010	40.7137	-90.2667	4	2	0
Spoon	Spoon River [4]	26-Jun-2012	40.9650	-89.9283	9	1	9
Spoon	Spoon River [4]	27-Jun-2012	40.9178	-90.1100	8	0	2
Spoon	Swan Creek	23-Jul-2010	40.6850	-90.5020	8	0	0
Spoon	Tater Creek	5-Aug-2010	40.3485	-90.2112	0	2	1
Spoon	Turkey Creek	4-Aug-2010	40.5567	-90.2605	0	3	3
Spoon	Walnut Creek	21-Jul-2010	41.0616	-89.9951	9	2	4
Spoon	Walnut Creek [4]	27-Jun-2012	41.0652	-90.0717	10	0	1
Spoon	Walnut Creek [4]	27-Jun-2012	41.0707	-90.0395	4	2	2
Spoon	West Fork Spoon River	19-Jul-2010	41.1807	-89.7883	2	2	0
Upper Illinois	Aux Sable	30-Jun-2009	41.4686	-88.3071	5	1	7

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Upper Illinois	Aux Sable	4-Aug-2009	41.3950	-88.3303	7	2	4
Upper Illinois	Aux Sable	4-Aug-2009	41.4170	-88.3477	10	1	4
Upper Illinois	Aux Sable	4-Aug-2009	41.5122	-88.3108	5	0	0
Upper Illinois	Aux Sable [4]	26-Jun-2012	41.4978	-88.2994	6	1	0
Upper Illinois	Big Bureau Creek	16-Jun-2009	41.4854	-89.3669	2	0	4
Upper Illinois	Big Bureau Creek	1-Jul-2009	41.3006	-89.4614	0	0	8
Upper Illinois	Big Bureau Creek	1-Jul-2009	41.3663	-89.4981	0	0	2
Upper Illinois	Big Bureau Creek [4]	10-Jul-2012	41.4167	-89.4775	2	1	1
Upper Illinois	Big Bureau Creek [4]	11-Jul-2012	41.2787	-89.3833	0	0	12
Upper Illinois	Cedar Creek [4]	9-Jul-2012	41.3042	-89.1312	0	0	0
Upper Illinois	Covel Creek	30-Jun-2009	41.2949	-88.8358	0	0	3
Upper Illinois	East Bureau Creek	15-Jun-2009	41.4364	-89.3497	0	0	0
Upper Illinois	East Fork Mazon River	9-Jun-2009	41.1574	-88.2733	4	0	4
Upper Illinois	Johnny Run	10-Jun-2009	41.2709	-88.3926	3	2	0
Upper Illinois	Little Vermilion River	21-Jul-2009	41.3676	-89.0841	0	3	4
Upper Illinois	Little Vermilion River	21-Jul-2009	41.4700	-89.0690	2	1	4
Upper Illinois	Little Vermilion River [1]	13-Aug-2009	41.3676	-89.0841	1	2	4
Upper Illinois	Little Vermilion River [4]	11-Jul-2012	41.3333	-89.0812	0	4	2
Upper Illinois	Masters Fork [4]	10-Jul-2012	41.4801	-89.4252	3	1	0
Upper Illinois	Mazon River	3-Aug-2009	41.2144	-88.2902	15	0	0
Upper Illinois	Mazon River	3-Aug-2009	41.2735	-88.3607	11	0	1
Upper Illinois	Mazon River [4]	11-Jul-2012	41.2862	-88.3603	14	1	2
Upper Illinois	Mendota Creek [4]	30-Jul-2012	41.5272	-89.1082	0	0	0
Upper Illinois	Nettle Creek	3-Aug-2009	41.3432	-88.4174	1	1	3
Upper Illinois	Nettle Creek [4]	26-Jun-2012	41.3854	-88.4677	7	1	0
Upper Illinois	Pike Creek [4]	10-Jul-2012	41.5098	-89.2915	4	0	0
Upper Illinois	Pike Creek [4]	10-Jul-2012	41.5106	-89.3250	0	0	2
Upper Illinois	Plow Hollow [4]	10-Jul-2012	41.2892	-89.4852	0	0	0
Upper Illinois	Spring Creek	15-Jun-2009	41.3186	-89.1961	0	0	2
Upper Illinois	Tomahawk Creek	16-Jun-2009	41.3781	-89.0848	0	2	2

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Upper Illinois	Tomahawk Creek [4]	9-Jul-2012	41.4478	-89.0444	3	0	1
Upper Illinois	Waupecan Creek	9-Jun-2009	41.2980	-88.4300	0	0	4
Upper Illinois	West Bureau Creek	15-Jun-2009	41.3683	-89.5712	0	0	2
Upper Illinois	West Bureau Creek [4]	10-Jul-2012	41.3320	-89.5439	0	0	2
Upper Illinois	West Fork Mazon River	10-Jun-2009	41.1826	-88.4355	8	1	0
Upper Illinois	West Fork Mazon River	29-Jun-2009	41.2274	-88.3737	8	0	4
Upper Mississippi	Apple River	14-Sept-2010	42.3408	-90.2055	5	1	3
Upper Mississippi	Apple River	14-Sept-2010	42.4012	-90.1323	0	0	0
Upper Mississippi	Apple River	14-Sept-2010	42.4484	-90.0552	0	0	0
Upper Mississippi	Apple River [2]	31-Aug-2011	42.2557	-90.2868	10	2	1
Upper Mississippi	Apple River [2]	23-Jun-2012	42.2441	-90.2720	9	3	4
Upper Mississippi	Apple River [4]	29-Aug-2012	42.3542	-90.1870	0	0	1
Upper Mississippi	Carroll Creek	15-Sept-2010	42.1033	-89.9822	0	0	2
Upper Mississippi	Carroll Creek	31-Aug-2011	42.1079	-90.0558	0	0	0
Upper Mississippi	Clear Creek	28-Jun-2010	42.4494	-90.0456	0	0	1
Upper Mississippi	East Fork Galena River	30-Jun-2010	42.4675	-90.3388	0	0	0
Upper Mississippi	Furnace Creek [4]	29-Aug-2012	42.3302	-90.2577	0	0	0
Upper Mississippi	Galena River	14-Sept-2010	42.4764	-90.4065	0	0	11
Upper Mississippi	Long Hollow	29-Jun-2010	42.3449	-90.2640	0	0	0
Upper Mississippi	Menominee River	15-Sept-2010	42.5046	-90.5914	0	0	0
Upper Mississippi	Muddy Plum River	29-Jun-2010	42.2416	-90.0042	0	0	0
Upper Mississippi	Plum River	15-Sept-2010	42.2438	-90.0400	0	0	0
Upper Mississippi	Rush Creek	15-Sept-2010	42.2354	-90.2065	3	1	0
Upper Mississippi	Smallpox Creek	29-Jun-2010	42.3706	-90.3933	2	0	0
Upper Mississippi	South Fork Apple River	14-Sept-2010	42.4245	-90.0232	4	0	3
Vermilion (Illinois)	Bailey Creek	29-Jun-2009	41.2257	-89.0496	1	0	1
Vermilion (Illinois)	Baker Run	6-Jul-2009	40.9603	-88.7259	4	1	2
Vermilion (Illinois)	Deer Creek	15-Jun-2009	40.9614	-88.6055	0	4	3
Vermilion (Illinois)	Eagle Creek [4]	21-Jun-2012	41.1353	-88.8595	2	0	2
Vermilion (Illinois)	Fivemile Creek	28-Jul-2009	40.8533	-88.4322	9	2	0

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Vermilion (Illinois)	Ida Creek	15-Jun-2009	40.9788	-88.7095	4	0	1
Vermilion (Illinois)	Indian Creek	10-Jun-2009	40.7229	-88.5300	2	6	1
Vermilion (Illinois)	Indian Creek [4]	7-Jun-2012	40.7586	-88.4912	7	0	2
Vermilion (Illinois)	Kelly Creek	9-Jun-2009	40.8349	-88.2174	6	6	0
Vermilion (Illinois)	Long Point Creek	30-Jun-2009	41.0057	-88.8438	0	7	2
Vermilion (Illinois)	Mole Creek	17-Jun-2009	40.9962	-88.8126	2	1	2
Vermilion (Illinois)	Mud Creek	1-Jul-2009	41.0254	-88.7576	7	0	0
Vermilion (Illinois)	Murry Creek	30-Jun-2009	41.0690	-88.7951	1	4	1
Vermilion (Illinois)	North Fork Vermilion	9-Jul-2009	40.8366	-88.2608	7	3	1
Vermilion (Illinois)	North Fork Vermilion River [4]	7-Jun-2012	40.8277	-88.4317	8	0	1
Vermilion (Illinois)	Otter Creek	29-Jun-2009	41.1515	-88.8248	4	3	1
Vermilion (Illinois)	Otter Creek [4]	21-Jun-2012	41.1499	-88.7978	5	2	2
Vermilion (Illinois)	Prairie Creek	30-Jun-2009	41.0506	-88.8143	5	2	0
Vermilion (Illinois)	Rooks Creek	16-Jun-2009	40.9163	-88.7506	8	1	2
Vermilion (Illinois)	Scattering Point	17-Jun-2009	40.9743	-88.7762	0	2	1
Vermilion (Illinois)	South Fork Vermilion	9-Jul-2009	40.7409	-88.4077	9	0	0
Vermilion (Illinois)	South Fork Vermilion River [4]	7-Jun-2012	40.8055	-88.5103	4	1	4
Vermilion (Illinois)	Vermilion River	29-Jun-2009	41.2085	-88.9303	1	7	5
Vermilion (Illinois)	Vermilion River	28-Jul-2009	40.8307	-88.5750	6	0	1
Vermilion (Illinois)	Vermilion River	30-Jul-2009	40.9344	-88.7173	10	3	2
Vermilion (Illinois)	Vermilion River	30-Jul-2009	41.0913	-88.8282	6	3	3
Vermilion (Illinois)	Vermilion River [2]	7-Sep-2011	40.8774	-88.6324	12	2	3
Vermilion (Illinois)	Vermilion River [4]	24-Jul-2012	40.8881	-88.6628	12	3	1
Vermilion (Illinois)	Vermilion River [4]	24-Jul-2012	40.9734	-88.7531	14	1	1
Vermilion (Illinois)	Vermilion River [4]	25-Jul-2012	41.2411	-88.9834	10	1	1
Vermilion (Illinois)	Vermilion River [4]	25-Jul-2012	41.2550	-89.0136	1	2	0
Vermilion (Illinois)	Vermilion River [4]	26-Jul-2012	41.1665	-88.8778	10	2	0
Vermilion (Illinois)	Vermilion River [4]	26-Jul-2012	41.3025	-89.0386	6	2	3
Vermilion (Illinois)	Wolf Creek	6-Jul-2009	40.9340	-88.7009	4	1	1
Vermilion (Illinois)	Wolf/Otter Creek [4]	21-Jun-2012	41.1529	-88.8550	1	0	6

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Vermilion (Wabash)	Big Four Ditch	17-Aug-2009	40.4747	-88.2131	13	0	0
Vermilion (Wabash)	Big Four Ditch	4-Jun-2010	40.5157	-88.2559	7	2	0
Vermilion (Wabash)	Big Four Ditch [1]	11-Jul-2011	40.4747	-88.2131	11	2	0
Vermilion (Wabash)	Butler Branch [2]	12-Jun-2012	40.1020	-87.7162	0	0	0
Vermilion (Wabash)	Collison Branch [4]	14-Jun-2012	40.2341	-87.7717	0	2	5
Vermilion (Wabash)	Grape Creek	21-Jun-2011	40.0634	-87.6067	0	0	1
Vermilion (Wabash)	Jordan Creek	21-Jun-2011	40.0692	-87.8256	1	0	2
Vermilion (Wabash)	Jordan Creek	19-Jul-2011	40.3541	-87.5501	6	3	6
Vermilion (Wabash)	Jordan Creek	13-Sep-2011	40.3367	-87.6198	1	4	4
Vermilion (Wabash)	Lick Creek [4]	9-Aug-2012	40.1098	-87.5981	0	0	0
Vermilion (Wabash)	Little Vermilion River	27-Jul-2009	39.9142	-87.7328	8	1	0
Vermilion (Wabash)	Little Vermilion River	27-Jul-2009	39.9211	-87.8228	9	0	1
Vermilion (Wabash)	Little Vermilion River	7-Jul-2011	39.9203	-87.8044	7	1	2
Vermilion (Wabash)	Little Vermilion River	10-Aug-2011	39.9413	-87.5514	10	0	6
Vermilion (Wabash)	Little Vermilion River [3]	5-Jun-2012	39.9203	-87.8044	6	0	0
Vermilion (Wabash)	Little Vermilion River [3]	5-Jun-2012	39.9604	-87.6393	9	2	0
Vermilion (Wabash)	Little Vermilion River [4]	13-Sep-2011	39.9604	-87.6393	10	1	3
Vermilion (Wabash)	Middle Branch	19-Aug-2009	40.3956	-87.5733	6	3	1
Vermilion (Wabash)	Middle Branch [2]	20-Sep-2011	40.3190	-87.6357	1	4	6
Vermilion (Wabash)	Middle Branch [2]	20-Sep-2011	40.3288	-87.6217	1	5	8
Vermilion (Wabash)	Middle Branch & Jordan Creek [2]	13-Sep-2011	40.3382	-87.6236	3	4	5
Vermilion (Wabash)	Middle Branch [4]	13-Sep-2011	40.3110	-87.6230	9	0	6
Vermilion (Wabash)	Middle Fork Vermilion River	10-Aug-2009	40.2353	-87.7718	2	0	7
Vermilion (Wabash)	Middle Fork Vermilion River	10-Aug-2009	40.2994	-87.8890	14	2	7
Vermilion (Wabash)	Middle Fork Vermilion River	12-Jul-2011	40.1362	-87.7459	5	2	5
Vermilion (Wabash)	Middle Fork Vermilion River [1]	12-Jul-2011	40.2353	-87.7718	3	0	7
Vermilion (Wabash)	Middle Fork Vermilion River [4]	12-Jul-2011	40.2972	-87.8008	8	3	11
Vermilion (Wabash)	Middle Fork Vermilion River [4]	15-Jun-2012	40.3274	-87.9325	12	0	3
Vermilion (Wabash)	North Fork Vermilion River	19-Aug-2011	40.3850	-87.9641	10	3	5
Vermilion (Wabash)	North Fork Vermilion River [1]	20-Sep-2011	40.3087	-87.6336	7	5	5

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Vermilion (Wabash)	North Fork Vermilion River [2]	18-Jul-2011	40.4446	-87.6627	10	1	2
Vermilion (Wabash)	North Fork Vermilion River [2]	18-Jul-2011	40.4599	-87.6379	3	6	2
Vermilion (Wabash)	North Fork Vermilion River [2]	19-Jul-2011	40.3307	-87.6612	5	1	8
Vermilion (Wabash)	North Fork Vermilion River [2]	19-Jul-2011	40.4152	-87.6819	11	2	2
Vermilion (Wabash)	North Fork Vermilion River [2]	16-Aug-2011	40.2492	-87.6290	3	0	12
Vermilion (Wabash)	North Fork Vermilion River [2]	6-Sep-2011	40.2661	-87.6419	4	3	4
Vermilion (Wabash)	North Fork Vermilion River [2]	12-Jun-2012	40.1226	-87.6410	7	0	5
Vermilion (Wabash)	North Fork Vermilion River [2]	14-Jun-2012	40.2997	-87.6182	4	2	8
Vermilion (Wabash)	North Fork Vermilion River [4]	19-Aug-2011	40.3912	-87.9897	9	3	3
Vermilion (Wabash)	North Fork Vermilion River [4]	6-Sep-2011	40.3037	-87.6220	6	2	10
Vermilion (Wabash)	North Fork Vermilion River [4]	12-Jun-2012	40.1433	-87.6522	8	0	0
Vermilion (Wabash)	Saline Branch	21-Jun-2011	40.1278	-88.0803	0	0	8
Vermilion (Wabash)	Saline Branch	16-Aug-2011	40.1709	-88.2040	0	6	1
Vermilion (Wabash)	Saline Branch Drainage Ditch [1]	20-Sep-2011	40.1332	-88.1050	0	0	5
Vermilion (Wabash)	Saline Branch Drainage Ditch [2]	23-Jul-2010	40.1332	-88.1050	2	0	2
Vermilion (Wabash)	Salt Fork Drainage Ditch	11-Jul-2011	40.1498	-88.0340	2	1	4
Vermilion (Wabash)	Salt Fork Vermilion River	8-Jul-2011	40.0547	-87.9892	1	0	12
Vermilion (Wabash)	Salt Fork Vermilion River	8-Jul-2011	40.0917	-88.0508	0	0	9
Vermilion (Wabash)	Salt Fork Vermilion River	11-Aug-2011	40.0883	-87.8250	13	0	7
Vermilion (Wabash)	Salt Fork Vermilion River [2]	9-Aug-2012	40.0873	-87.8438	10	1	7
Vermilion (Wabash)	Salt Fork Vermilion River [4]	8-Aug-2012	40.0622	-87.9395	11	1	0
Vermilion (Wabash)	Spoon River	11-Jul-2011	40.1643	-88.0274	4	3	2
Vermilion (Wabash)	Stony Creek [4]	11-Aug-2011	40.0988	-87.8267	2	0	0
Vermilion (Wabash)	Stony Creek [4]	11-Aug-2011	40.1181	-87.8447	3	1	0
Vermilion (Wabash)	Stony Creek [4]	9-Aug-2012	40.0835	-87.5881	0	0	1
Vermilion (Wabash)	Sugar Creek [4]	21-Jun-2011	40.3849	-87.9440	5	0	0
Vermilion (Wabash)	Upper Salt Fork Drainage	21-Jun-2011	40.2453	-88.0977	0	0	3
Vermilion (Wabash)	Vermilion River	10-Aug-2011	40.0157	-87.5463	14	0	7
Vermilion (Wabash)	Vermilion River	11-Aug-2011	40.1024	-87.7157	14	0	0
Vermilion (Wabash)	Vermilion River	13-Sep-2011	40.0850	-87.5938	10	0	9

Basin	Stream	Date Sampled	Latitude	Longitude	Live species	Dead Species	Relict Species
Vermilion (Wabash)	Vermilion River [2]	16-Jul-2012	40.1146	-87.6185	9	2	4
Vermilion (Wabash)	Vermilion River [2]	16-Jul-2012	40.1206	-87.6303	17	2	1
Vermilion (Wabash)	Wall Town Drain Ditch [4]	11-Jun-2012	40.5020	-88.1705	8	1	2
Vermilion (Wabash)	Whippoorwill Branch [4]	6-Jun-2012	39.9909	-87.5422	0	0	0
Wabash tributaries	Brouilletts Creek [4]	6-Jun-2012	39.7047	-87.5542	5	0	3
Wabash tributaries	Crabapple Creek [4]	6-Jun-2012	39.7106	-87.5528	6	1	2
Wabash tributaries	East Mill Creek [4]	18-Jul-2012	39.3592	-87.7418	3	0	0
Wabash tributaries	Mill Creek [4]	18-Jul-2012	39.4765	-87.8206	0	0	0
Wabash tributaries	Robinson Creek [4]	16-Jul-2012	39.0130	-87.6848	0	0	0
Wabash tributaries	Sugar Creek [4]	16-Jul-2012	39.0046	-87.5975	0	0	0
Wabash Tributaries	Big Creek	8-Jun-2011	39.3564	-87.6051	0	0	1
Wabash Tributaries	Brouilletts Creek	14-Jul-2011	39.7056	-87.5947	7	2	3
Wabash Tributaries	Crabapple Creek/N Fork Brouilletts	21-Jun-2011	39.7606	-87.5925	0	5	4
Wabash Tributaries	Mill Creek	8-Jun-2011	39.2669	-87.6967	0	1	1
Wabash Tributaries	Salt Fork Brouilletts Creek	22-Jun-2011	39.7449	-87.5721	0	0	5
Wabash Tributaries	Sugar Creek-North	14-Jul-2011	39.4986	-87.5533	0	1	1
Wabash Tributaries	Sugar Creek-North	14-Jul-2011	39.5291	-87.5830	0	0	2

Table 2. Breakdown of sampling sites (events) by basin.

Basin	# of sampling sites	# of sampling events
Big Muddy	29	30
Cache River	26	28
Des Plaines	20	20
Embarras	56	57
Fox	47	48
Green River	20	22
Iroquois	41	43
Kankakee	25	26
Kaskaskia	96	98
Kishwaukee	33	33
Lake Michigan Tributaries	11	11
LaMoine	23	23
Little Wabash	43	45
Lower Illinois	31	31
Mackinaw	28	30
Middle Illinois	23	23
Middle Mississippi	7	7
Miss South Central	17	17
Mississippi Central	12	12
Mississippi South	17	18
N Central Mississippi	23	23
Ohio River Tributaries	21	21
Pecatonica	29	29
Rock	48	48
Saline	21	21
Sangamon	75	80
Skillet Fork	11	11
Spoon	41	42
Upper Illinois	36	37
Upper Mississippi	19	19
Vermilion (Illinois)	35	35
Vermilion (Wabash)	59	64
Wabash tributaries	13	13
Total		
33	**1036**	**1065**

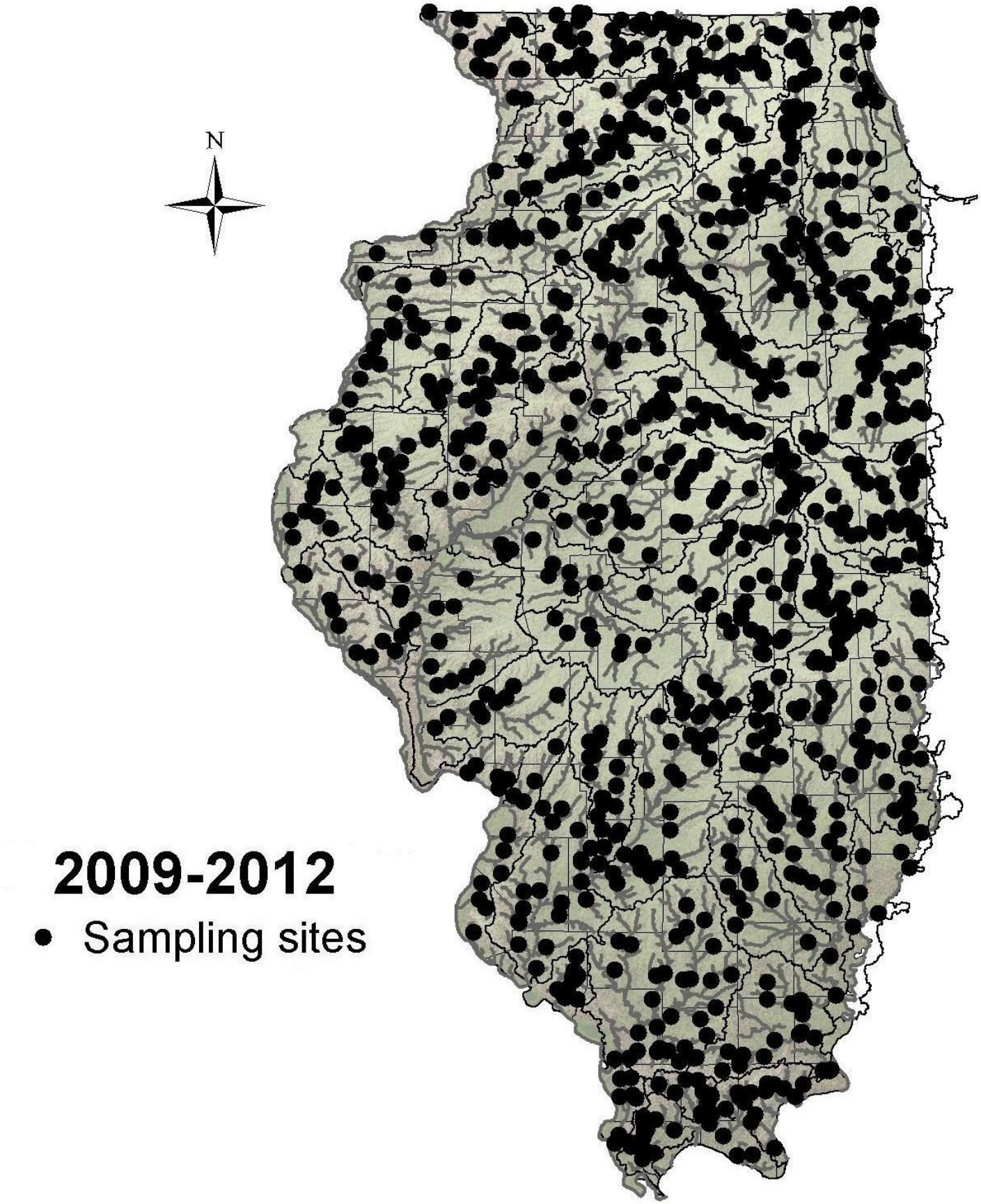

Figure 1. Completed sampling sites 2009-2012 (n=1036).

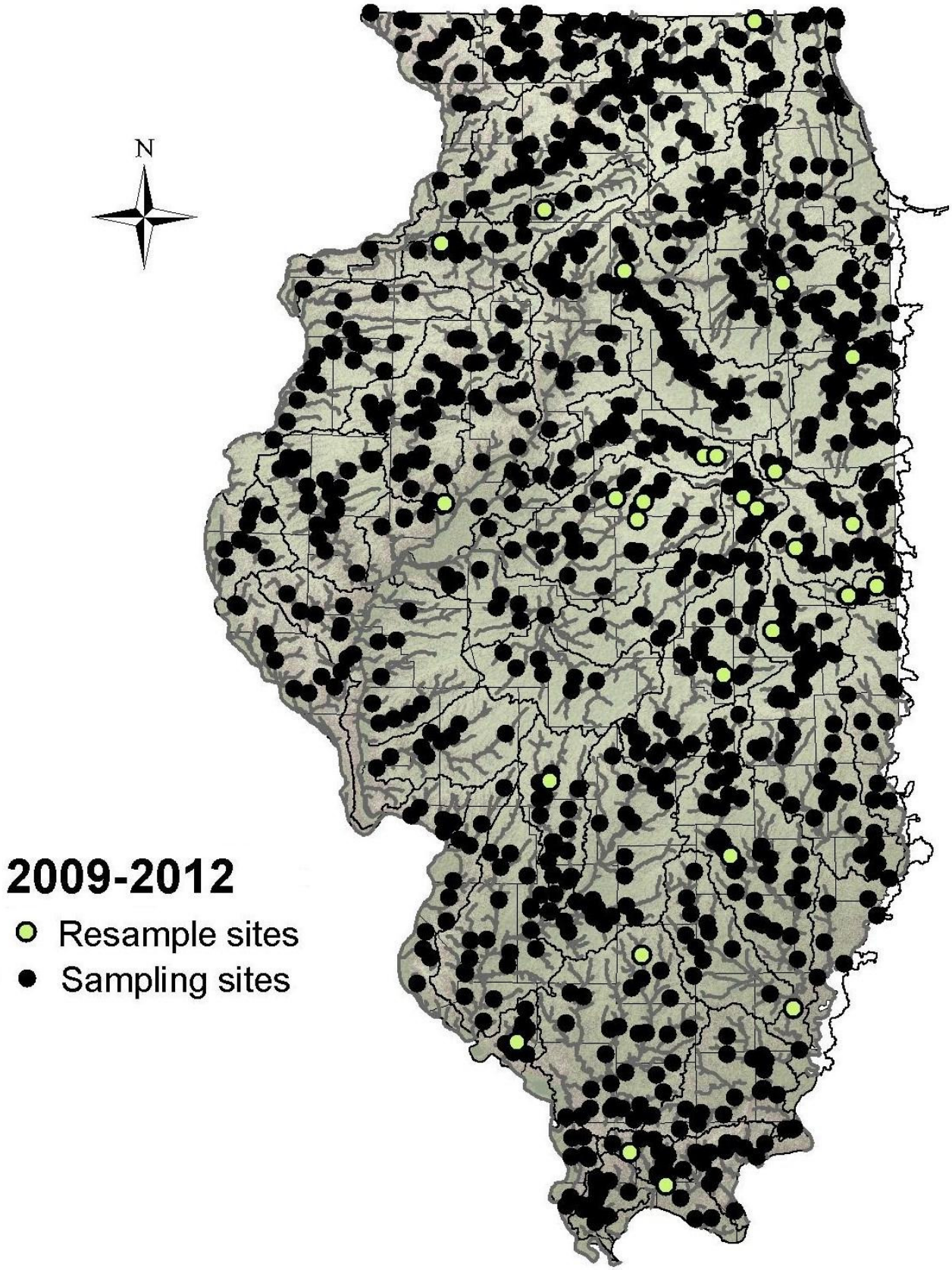

Figure 2. Resample sites 2009-2012 (n=29).

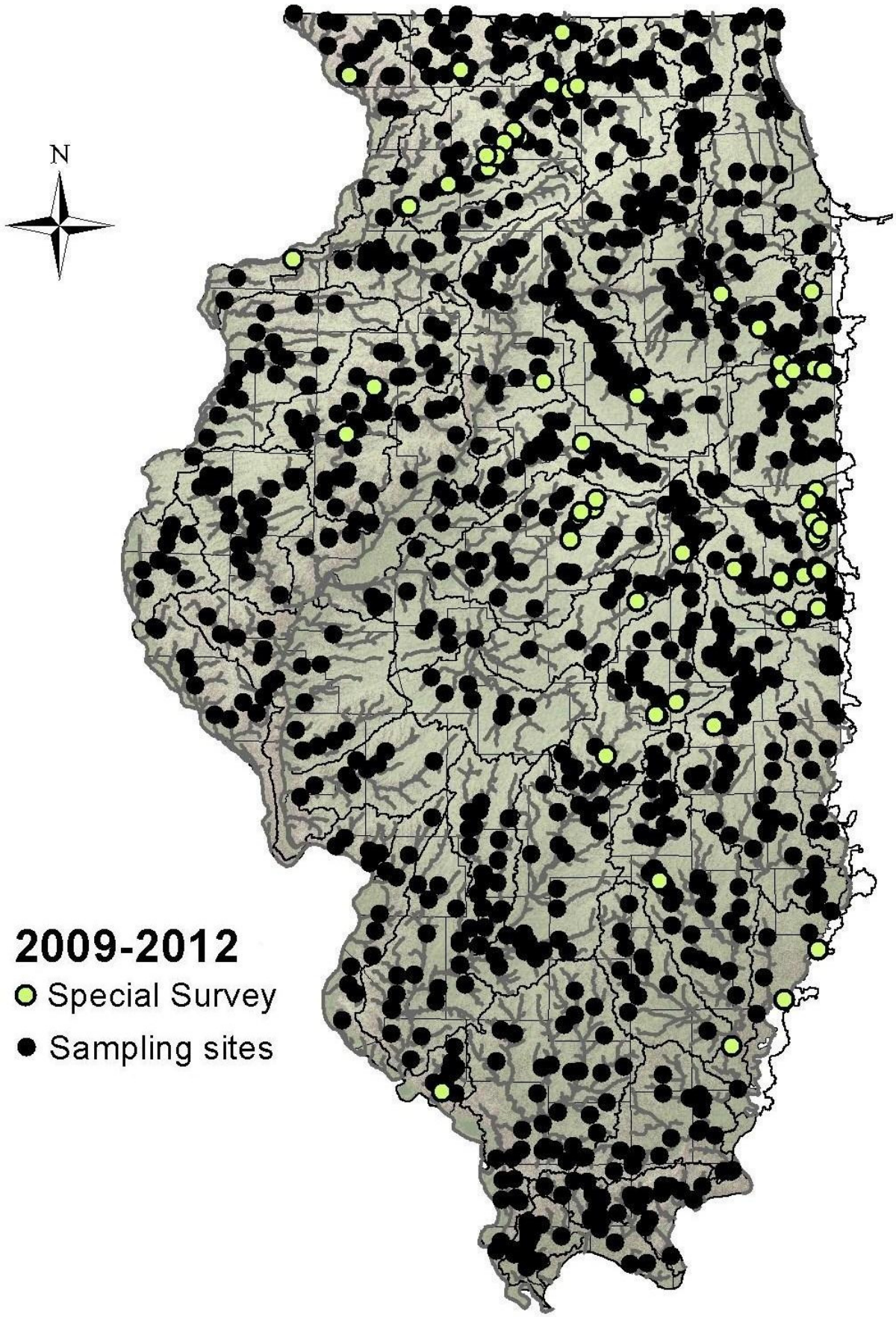

Figure 3. Special survey sites 2009-2012 (n=77).

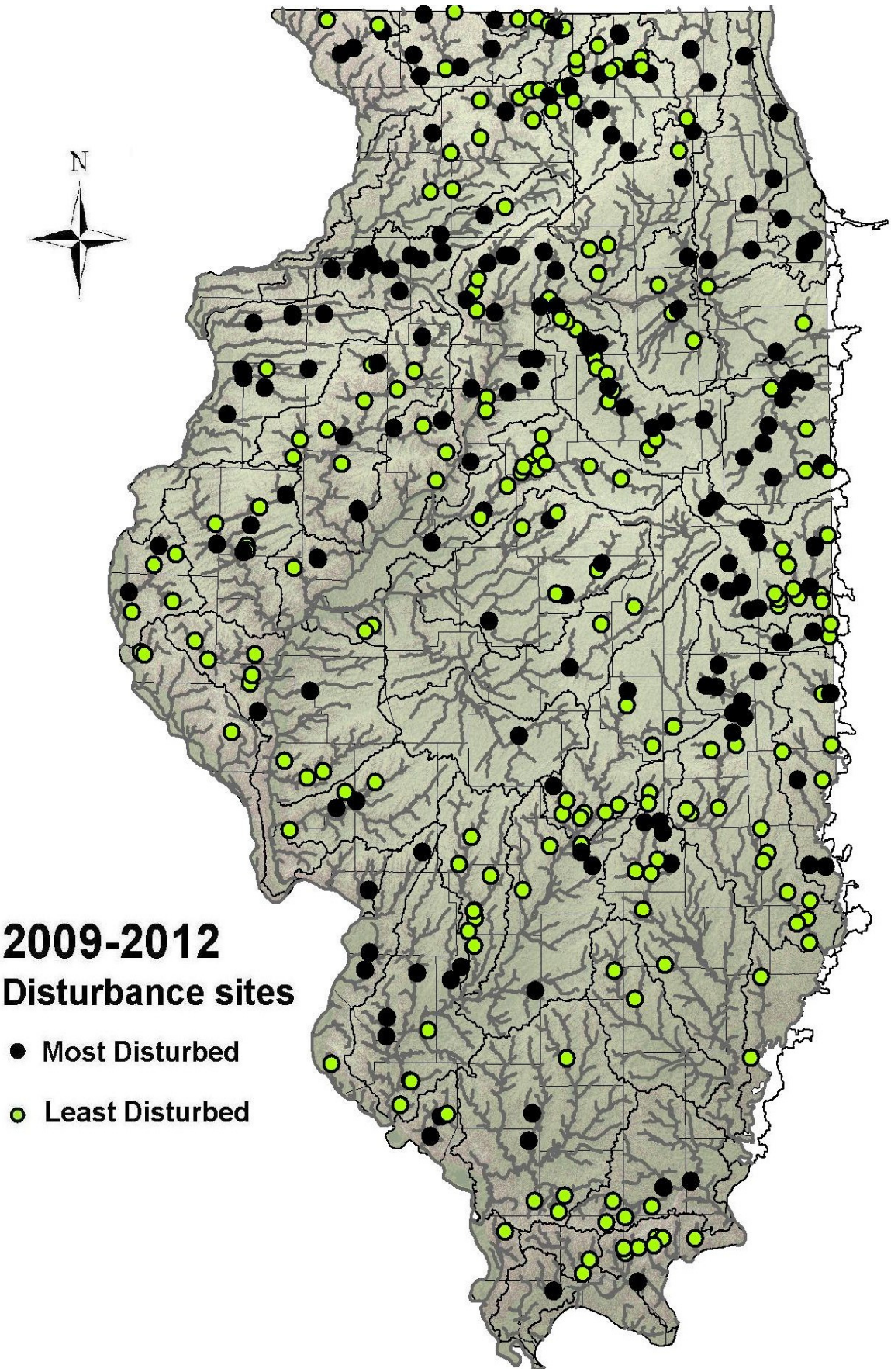

Figure 4. Disturbance rated sites 2009-2012 (n=399).