# The Multistate Aquatic Resources Information System: New Design and Applied Uses

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# MARIS Overview

- Web based system to serve as a single access point for multiple states' data.
- Designed by a consortium of state and federal agencies.
- Focus is on data to assess status, trends, and presence (potentially absence).
- 14 states and growing.

# New Design

- Enhanced map based display of data available.
- Downloadable datasets.
- Online queries (under development).
- Map-based queries (future).

Multistate Aquatic Resources Information System

The Multistate Aquatic Resources Information System (MARIS) is an online resource that contains over one million population estimate, total catch, total weight, and water quality records for nearly 600 fish species sampled by a growing number of state fish and wildlife agencies.


*MARIS Status map - click on a state for more information*

USGS science for a changing world

New Jersey Division of Fish and Wildlife

Maryland Department of Natural Resources

Michigan DNR

Sport Fish Restoration

Minnesota Department of Natural Resources

### Download

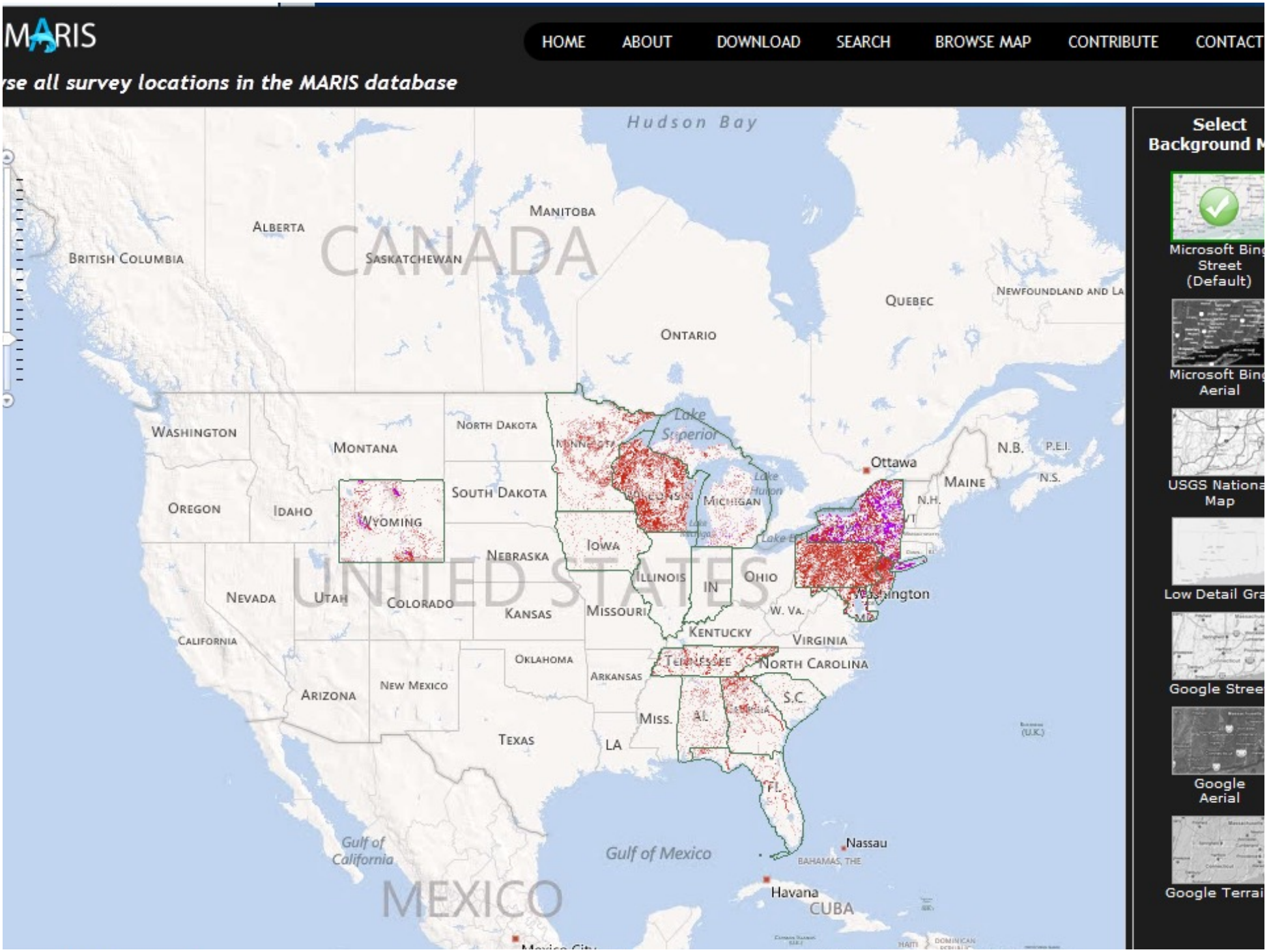
Download the entire MARIS database or selected states in various formats.

### Browse Map

View a clickable map of every lake and stream surveyed by the MARIS partner agencies.

### Search (Under Development)

Search the MARIS database using several parameters and view/download the results.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Alberta
British Columbia
Saskatchewan
Quebec
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Ontario
Lake Superior
Lake Huron
Lake Michigan
Ottawa
N.B.
P.E.I.
N.S.
Maine
N.H.
Washington
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South Dakota
Oregon
Idaho
Wyoming
Nebraska
Iowa
Illinois
Ohio
Nevada
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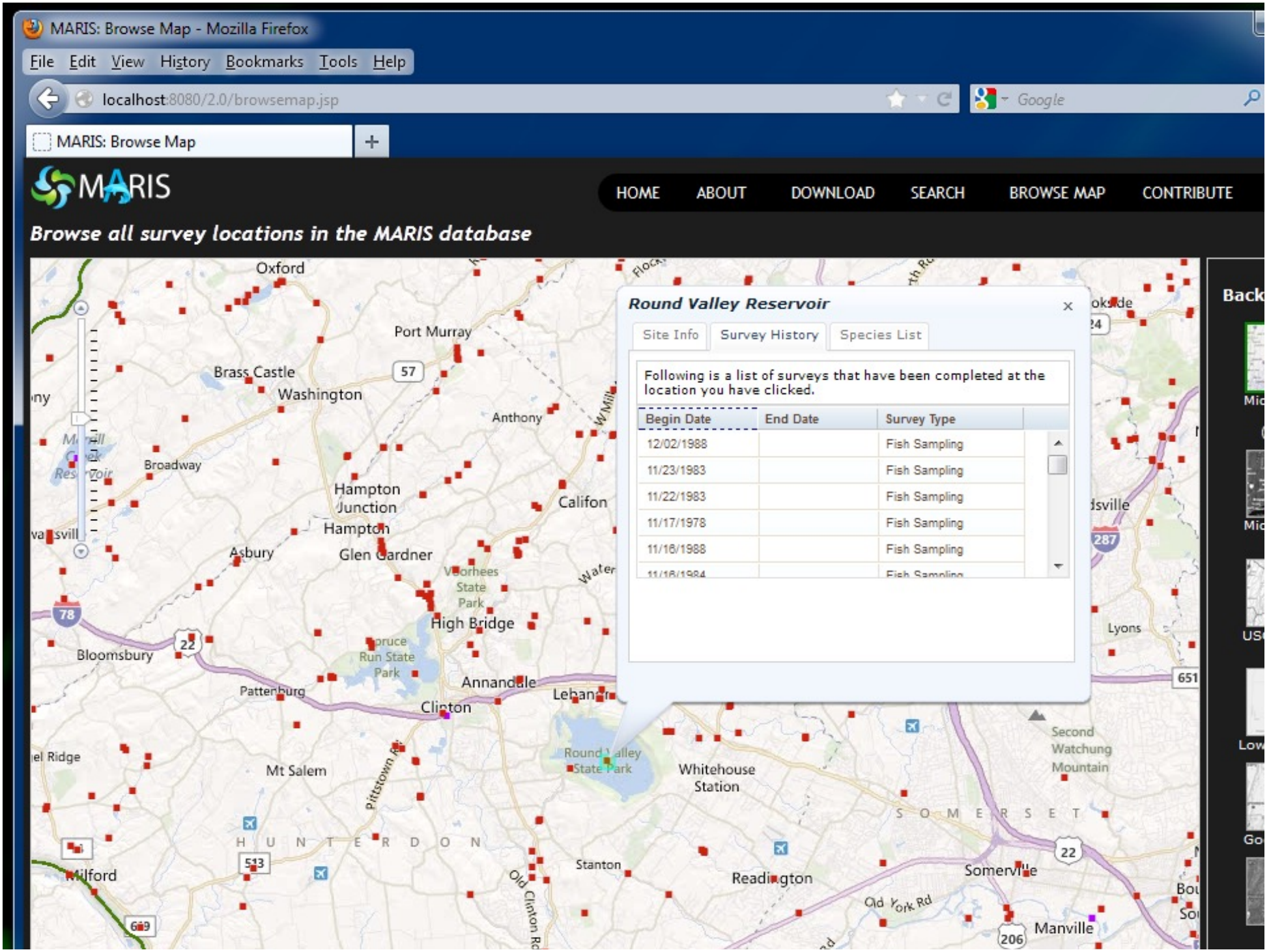
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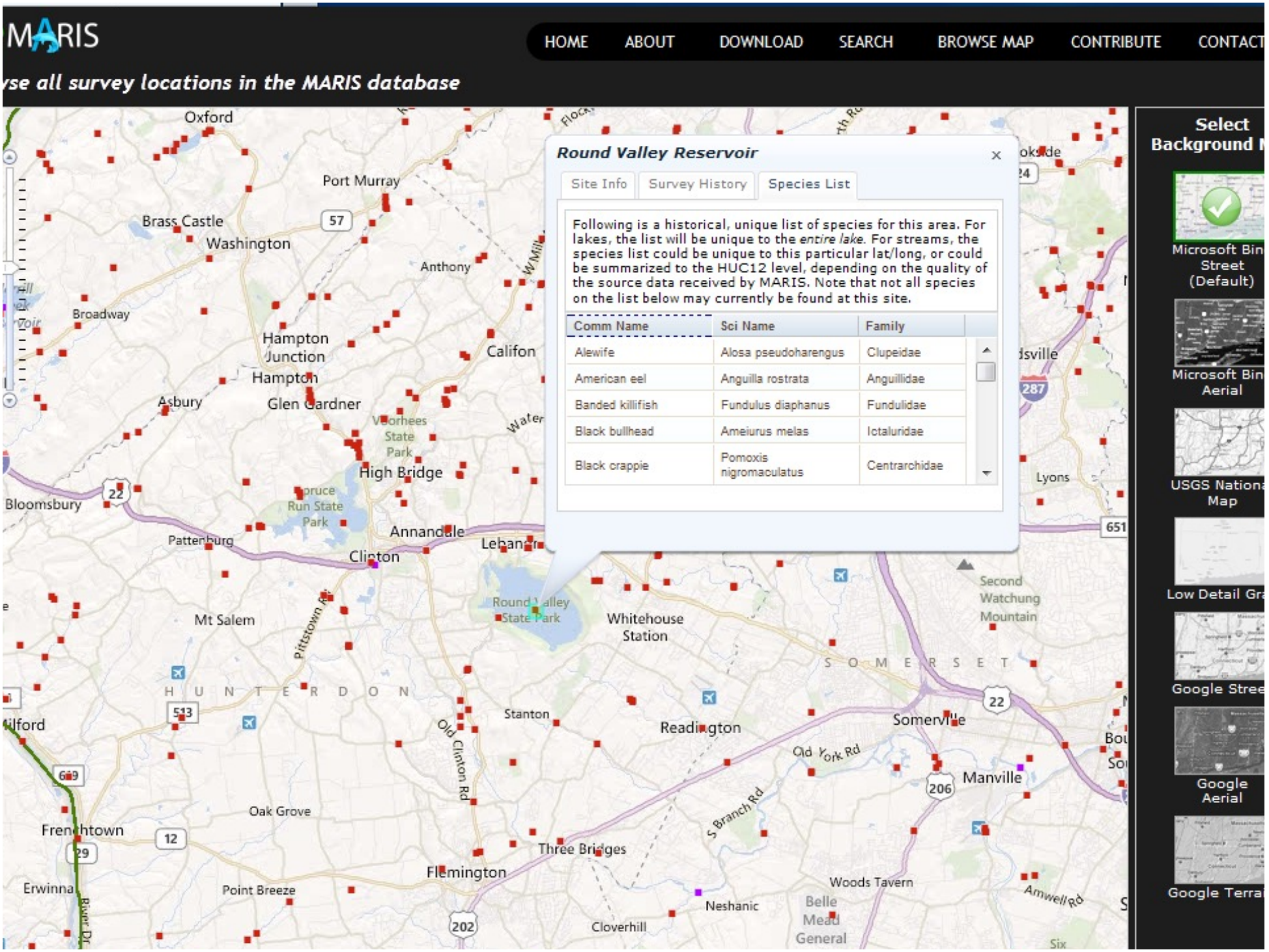
Browse all survey locations in the MARIS database
Round Valley Reservoir
Site Info
Survey History
Species List
Following is a list of surveys that have been completed at the location you have clicked.
Begin Date
End Date
Survey Type
12/02/1988 Fish Sampling
11/23/1983 Fish Sampling
11/22/1983 Fish Sampling
11/17/1978 Fish Sampling
11/16/1988 Fish Sampling
Oxford
Port Murray
Brass Castle
Washington
Anthony
Broadway
Hampton Junction
Hampton
Califon
Asbury
Glen Gardner
Voorhees State Park
High Bridge
Bloomsbury
Spruce Run State Park
Annandale
Patterburg
Clinton
Lyons
Second Watchung Mountain
Round Valley State Park
Whitehouse Station
Mt Salem
Pittstown Rd
HUNTERDON
SOMERSET
Milford
Stanton
Readington
Somerville
Old York Rd
Manville
Old Clinton Rd
57
78
22
287
651
513
206
Back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vse all survey locations in the MARIS database
Round Valley Reservoir
Site Info
Survey History
Species List
Following is a historical, unique list of species for this area. For lakes, the list will be unique to the entire lake. For streams, the species list could be unique to this particular lat/long, or could be summarized to the HUC12 level, depending on the quality of the source data received by MARIS. Note that not all species on the list below may currently be found at this site.
Comm Name
Sci Name
Family
Alewife
Alosa pseudoharengus
Clupeidae
American eel
Anguilla rostrata
Anguillidae
Banded killifish
Fundulus diaphanus
Fundulidae
Black bullhead
Ameiurus melas
Ictaluridae
Black crappie
Pomoxis nigromaculatus
Centrarchidae
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Low Detail Gra
Google Stree
Google Aerial
Google Terra
Oxford
Port Murray
Brass Castle
Washington
Anthony
Broadway
Hampton Junction
Hampton
Califon
Asbury
Glen Gardner
Voorhees State Park
High Bridge
Bloomsbury
Spruce Run State Park
Annandale
Patterburg
Clinton
Lebanon
Mt Salem
Round Valley State Park
Whitehouse Station
Second Watchung Mountain
HUNTERDON
SOMERSET
Stanton
Readington
Somerville
Manville
Old York Rd
S Branch Rd
Old Clinton Rd
Oak Grove
Frenchtown
Three Bridges
Flemington
Erwinna
Point Breeze
Neshanic
Cloverhill
Woods Tavern
Belle Mead General
Lyons
Pittstown Rd
Amwell Rd

# Download data from MARIS

Use the links on this page to download either the entire MARIS database or individual state datasets extracted from the MARIS master database in either Access 2003 or delimited text format. All files have been compressed into .zip archives and include a complete .xml metadata record. and Disclaimer, Attribution, and Privacy Statement.

The following table summarizes the data contained in MARIS.

MARIS Database Status - June, 2012

| State | # Species | # Lakes[1] | # Streams[1] | Date Range | # Water Quality Samples |
|---|---|---|---|---|---|
| AL | 167 | 0 | 409 | 1953-2006 | 0 |
| FL | 229 | 126 | 149 | 1962-2000 | 0 |
| GA | 229 | 176 | 561 | 1984-2010 | 1002 |
| IA | 126 | 130 | 210 | 1994-2005 | 1323 |
| IL | 179 | 347 | 244 | 1981-2003 | 0 |
| IN | N/A | 12 | 1 | 1966-2008 | 43 |
| MD | 111 | 98 | 55 | 1974-2010 | 3407 |
| MI | 132 | 1047 | 484 | 1968-2005 | 4460 |
| MN | 138 | 2701 | 0 | 1948-2009 | 23675 |
| NJ | 102 | 1170 | 603 | 1950-2008 | 5972 |
| NY | 195 | 1318 | 1333 | 1976-2007 | 52804 |
| PA | 187 | 400 | 2157 | 1975-2007 | 10150 |
| SC | 97 | 0 | 107 | 2003-2007 | 0 |
| TN | 252 | 0 | 448 | 1991-2008 | 0 |
| WI | 239 | 1512 | 2029 | 1944-2008 | 14018 |
| WY | 74 | 957 | 1298 | 1952-2008 | 8514 |

[1]Note that many lake and stream locations have multiple associated survey points. See the map for the complete geographic extent of MARIS data.

All data downloaded from MARIS and used for any publication, presentation, or online purpose must be

## Download Complete MARIS Database

| MS Access 2003 format | Delimited Text |
|---|---|
| Download 49 MB .zip | Download 20 MB .zip |

## Download Individual State Datasets

| MS Access 2003 format | Delimited Text |
|---|---|
| Alabama Download | Alabama Download |

## View Metadata

View the metadata record for MARIS.

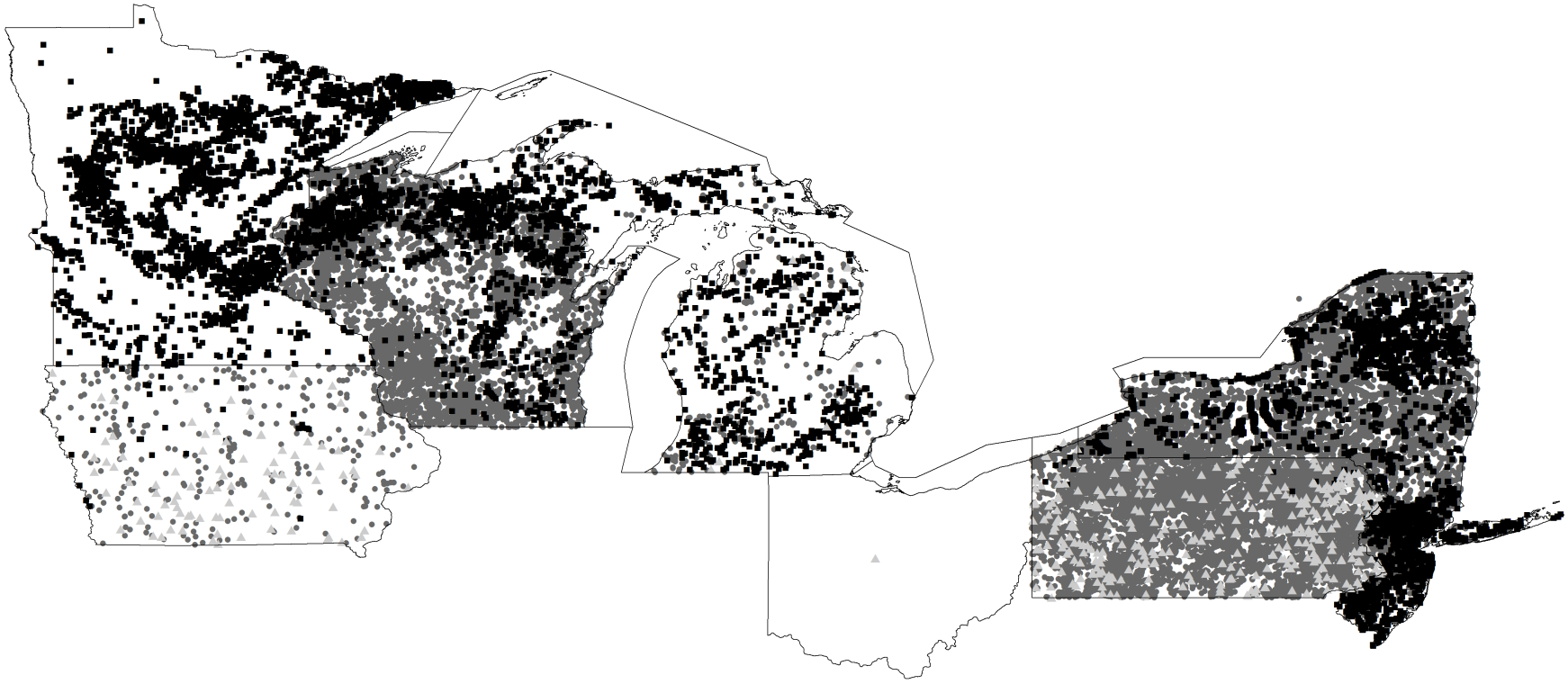
# What Can MARIS Be Used For?

- **Presence** of a species at a given time.
- **Presence/Absence**: if the field “Target Standard” is “All.” Sampling factors must be considered.
- **Minimum Distribution** of a species within the geographic boundaries of the data presented.
- **Abundance** (2 case studies).
- **Water Quality** taken at the approximate time that the sampling occurs. (not an extensive water quality database).
- **Community indices?** Size and Age table must be populated.

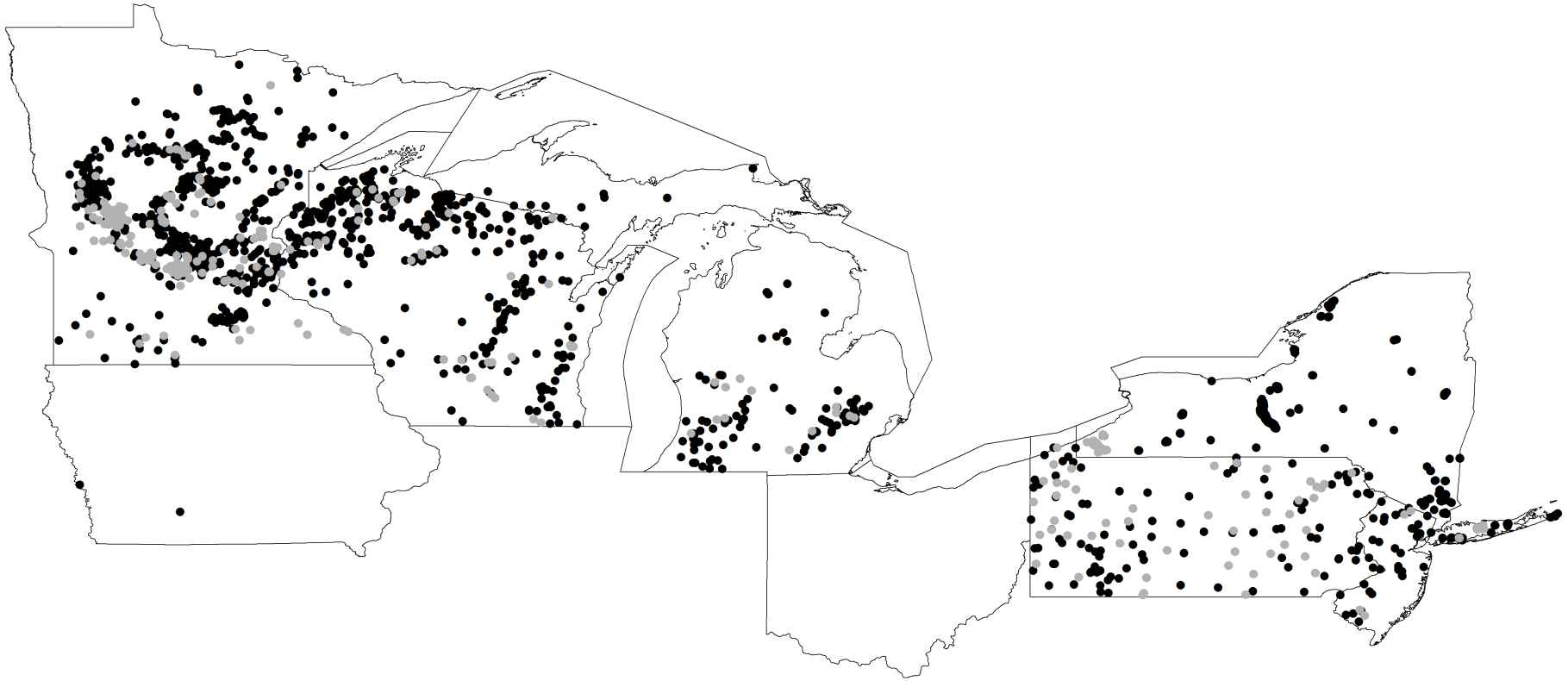
# Example: Applied Use

Nate, Nancy and A. Loftus. 2012. Exploring trends in largemouth bass relative abundance with MARIS. In: Loftus, Andrew J.; Flather, Curtis H. 2012. Fish and other aquatic resource trends in the United States: A technical document supporting the Forest Service 2010 RPA Assessment. Gen Tech. Rep. RMRS-GTR-283. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 79p.

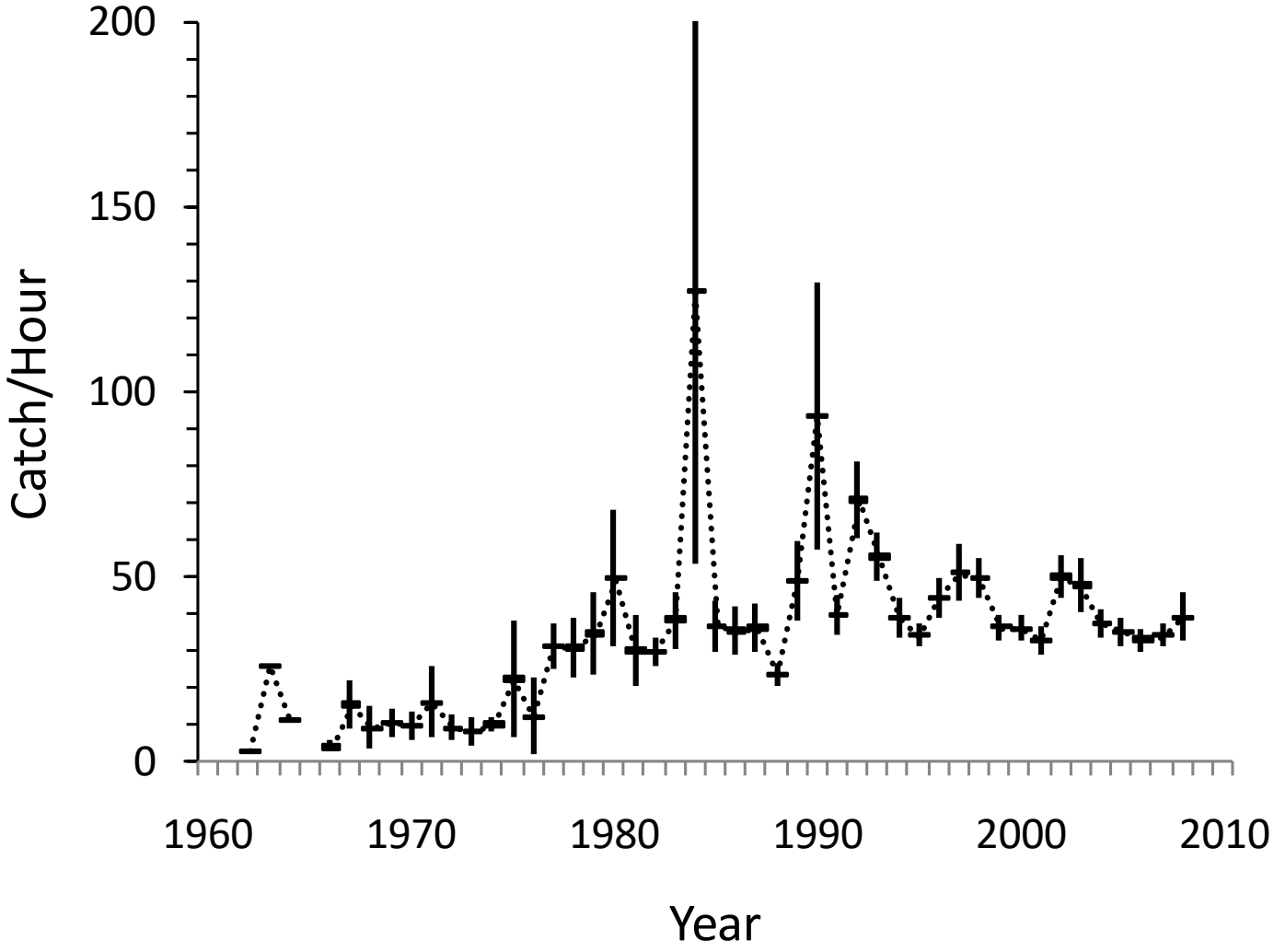
# Lakes and Impoundments with Largemouth Bass Present in the MARIS Assessment Database (2008)



# Lakes and Impoundments with 3+ Years Largemouth Bass Data During May Electrofishing



# Regional Trends in Largemouth Bass Relative Abundance for Spring Electrofishing Surveys



# Case Study Conclusions

- MARIS data can be used to examine patterns in fish distribution and trends at larger geographic scales.
- MARIS opens the potential to explore fish communities over time based on waterbody characteristics that influence presence or relative abundance.
- The robustness of these analyses depends on the completeness of each state's collection of these data and subsequent contribution to MARIS.
- MARIS will provide greater opportunities as more historic data are included and more states become involved.

# The Multistate Aquatic Resources Information System

www.marisdata.org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