

Enhancements to the Great Lakes Aquatic Nonindigenous Species Information System (GLANSIS)



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for
ICAIS
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GLANSIS is...

- A Great Lakes specific **portal** to the USGS Nonindigenous Aquatic Species database.
- A NOAA **project** to enhance access to information on nonindigenous species in the Great Lakes region.

<http://www.glerl.noaa.gov/res/Programs/glansis/glansis.html>

GLANSIS provides...

- A simple interface for accessing Great Lakes specific content from the national (USGS NAS) database.
- Advanced search capacity supporting research on the patterns and particulars of Great Lakes invasion biology.

GLANSIS contains...

- Comprehensive technical fact sheets on each of 182 nonindigenous species established in the Great Lakes.
- Detailed collection records for thousands of individual reports of invasive species in the Great Lakes basin.

GLANSIS Content – Fact Sheets

Hemimysis anomala G.O. Sars, 1907

Common Name: bloody red shrimp

Identification: This freshwater shrimp can be ivory-yellow in color or chromatophores in the carapax and telson (Janas and Wysocki 2005;

Size: Mature individuals range from 6-13 mm in length (Borcherding et al. 2006; and Hietalahti 1993). Females are slightly larger than males.

Native Range: *H. anomala* is native to freshwater margins of the Black Sea, Caspian Sea. It has historically occurred in the lower reaches of the Don, Dan

Nonindigenous Occurrences: *H. anomala* was reported for the first time in 2006 Great Lakes: southeastern Lake Ontario at Nine Mile Point near Oswego, New York,

Ecology: Most mysid species are found in marine environments, *Hemimysis anomala* is a brackish-water mysid able to adapt to fre

Means of Introduction: *H. anomala* was very likely introduced to the Great Lakes via ba transoceanic ships.

Status: The presence of juveniles and reproductive females is well established near Muskegon Lake in southern Lake Michigan

Impact of Introduction:

A) Realized: There are no recorded Lakes.

B) Potential: Ponto-Caspian mysids warmer temperatures (Bendtsen et al.

Remarks: In southern Lake Michigan basin,

References

bij de Vaate, A., K. Jazdzewski, H.A.M. Ketela

Other Resources: [Nationwide USGS Fact Sheet](#)
[Great Lakes Water Life](#)

Author: Rebekah M. Kipp and Anthony Ricciardi

Contributing Agencies:



NOAA - GLERL

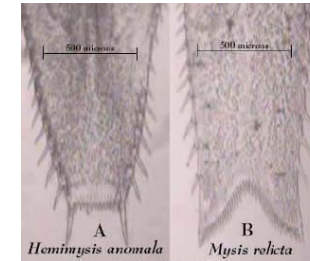
Revision Date: 8/8/2007

Citation for this information:

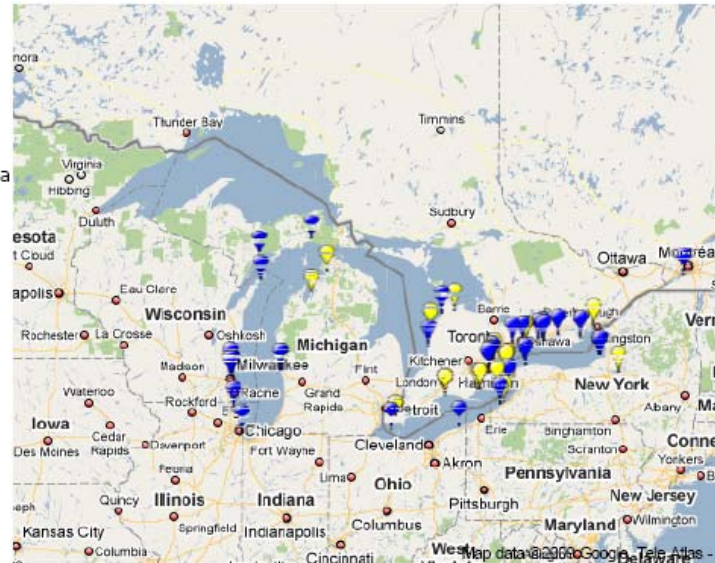
Rebekah M. Kipp and Anthony Ricciardi. 2010. *Hemimysis anomala*. USGS Nonindigenous Aquatic Species Database, Gainesville, FL.
<<http://nas.er.usgs.gov/queries/GreatLakes/SpeciesInfo.asp?NoCache=1%2F12%2F2010+3%3A43%3A01+PM&SpeciesID=2627&State=&HUCNumber=DGreatLakes>> Revision Date: 8/8/2007



NOAA GLERL



S. Pothoven, NOAA.



This map only depicts Great Lake introductions.
[Click here for the national map](#)

[Great Lakes Region Collection Information](#)

GLANSIS – Collection Records

Collection Information for *Hemimysis anomala*

Results limited to All Great Lakes Drainages. To see the full collection list for this species [CLICK HERE](#)

(Click table header to sort)

Specimen ID#	State	County	Locality	Year	HUC Number	Drainage Name	Status
238923	IL	Cook	Lake Michigan, 1 nautical mile offshore of Jackson Harbor [Chicago area] depth 7m.	2007	04060200	Lake Michigan	established
241083	IL	Lake	Lake Michigan at just south of Waukegan Harbor about 1/2 to 3/4 of a mile offshore	2006	04040002	Pike-Root	established
264213	MI	Antrim	East Arm Grand Traverse Bay near Elk Rapids Harbor	2008	04060105	Boardman-Charlevoix	collected
241094	MI	Delta	Lake Michigan in Little Bay de Noc, Escanaba	2007	04030111	Tacoosh-Whitefish	
264215	MI	Emmet	Lake Michigan, Little Traverse Bay [E of Harbor Spring]	2008	04060200	Lake Michigan	

Specimen ID	238923
Group	Crustaceans-Mysids
Genus	Hemimysis
Species	anomala
Common Name	bloody red shrimp
State	IL
County	Cook
Locality	Lake Michigan, 1 nautical mile offshore of Jackson Harbor [Chicago area] depth 7m.
HUC8 Name	Lake Michigan
HUC8 Number	4060200
Day	31
Month	7 (July)
Year	2007
Year Accuracy (Specimen)	Actual
Contact	not displayed for privacy reasons
Status	established
Comments	Only 1 specimen observed in the July 31 samples. A second specimen picked up in samples taken 1.3mi south on July 24.
Record Type	Personal communication
Disposal	preserved in ethanol
Verifier	IL NHS
Fresh/Marine Introduction	Freshwater
Number Collected	2

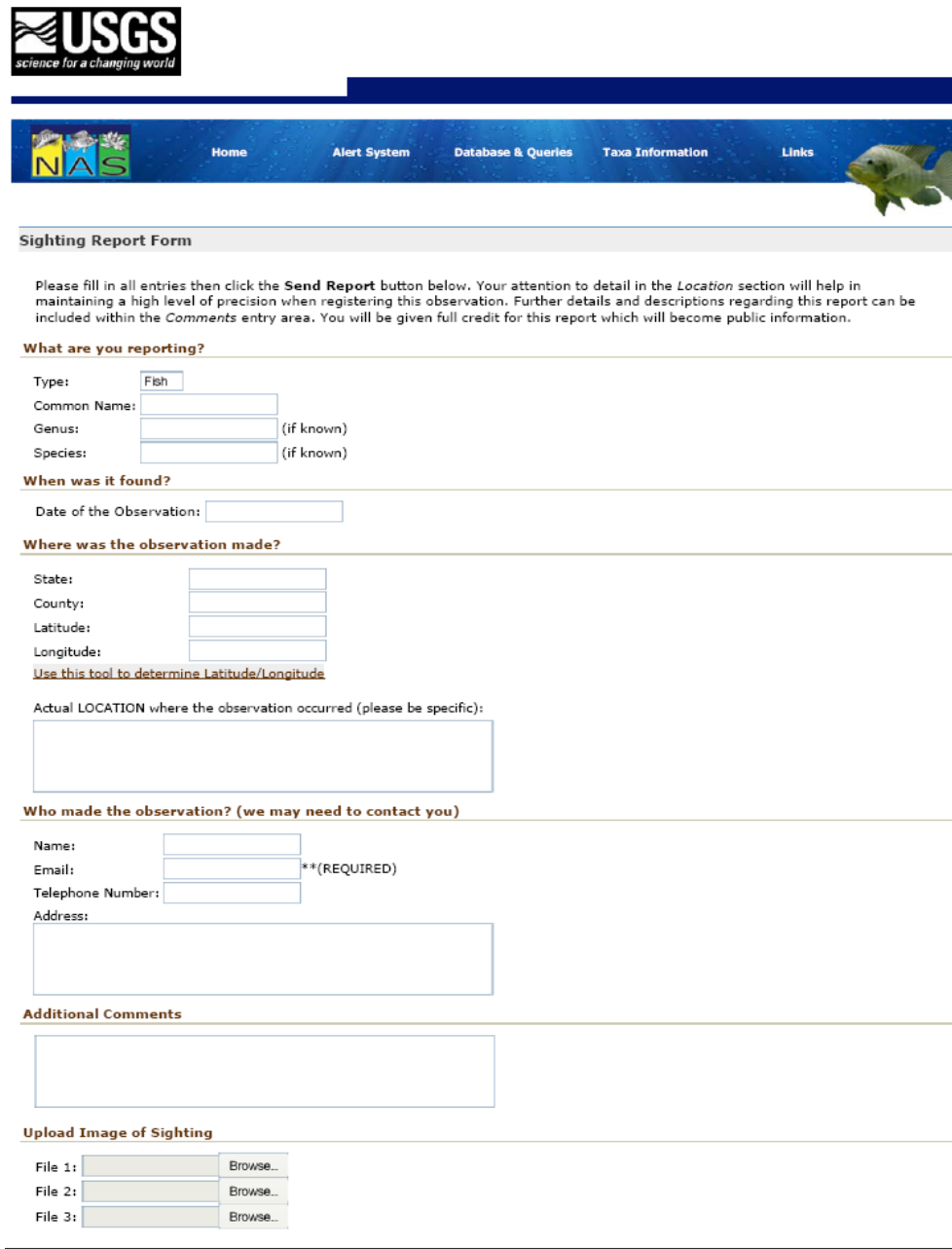
GLANSIS Reporting via USGS NAS

<http://nas3.er.usgs.gov/>

Or Phone 877-STOP-ANS

Or email GLANSIS directly
– rochelle.sturtevant@noaa.gov

We also have the capacity to
Backload in some large files
– e.g., GLIFWC,
OFAH, EPA, etc



The image shows a screenshot of the USGS NAS Sighting Report Form. At the top is the USGS logo with the tagline "science for a changing world". Below the logo is a navigation bar with links for Home, Alert System, Database & Queries, Taxa Information, and Links. A small fish icon is visible on the right side of the navigation bar. The main heading is "Sighting Report Form". Below this is a paragraph of instructions: "Please fill in all entries then click the **Send Report** button below. Your attention to detail in the *Location* section will help in maintaining a high level of precision when registering this observation. Further details and descriptions regarding this report can be included within the *Comments* entry area. You will be given full credit for this report which will become public information." The form is divided into several sections: "What are you reporting?" with fields for Type (a dropdown menu showing "Fish"), Common Name, Genus (with "(if known)" text), and Species (with "(if known)" text); "When was it found?" with a Date of the Observation field; "Where was the observation made?" with fields for State, County, Latitude, and Longitude, and a link "Use this tool to determine Latitude/Longitude"; "Actual LOCATION where the observation occurred (please be specific):" with a large text area; "Who made the observation? (we may need to contact you)" with fields for Name, Email (marked as required), Telephone Number, and Address; "Additional Comments" with a large text area; and "Upload Image of Sighting" with three file upload fields, each with a "Browse..." button.

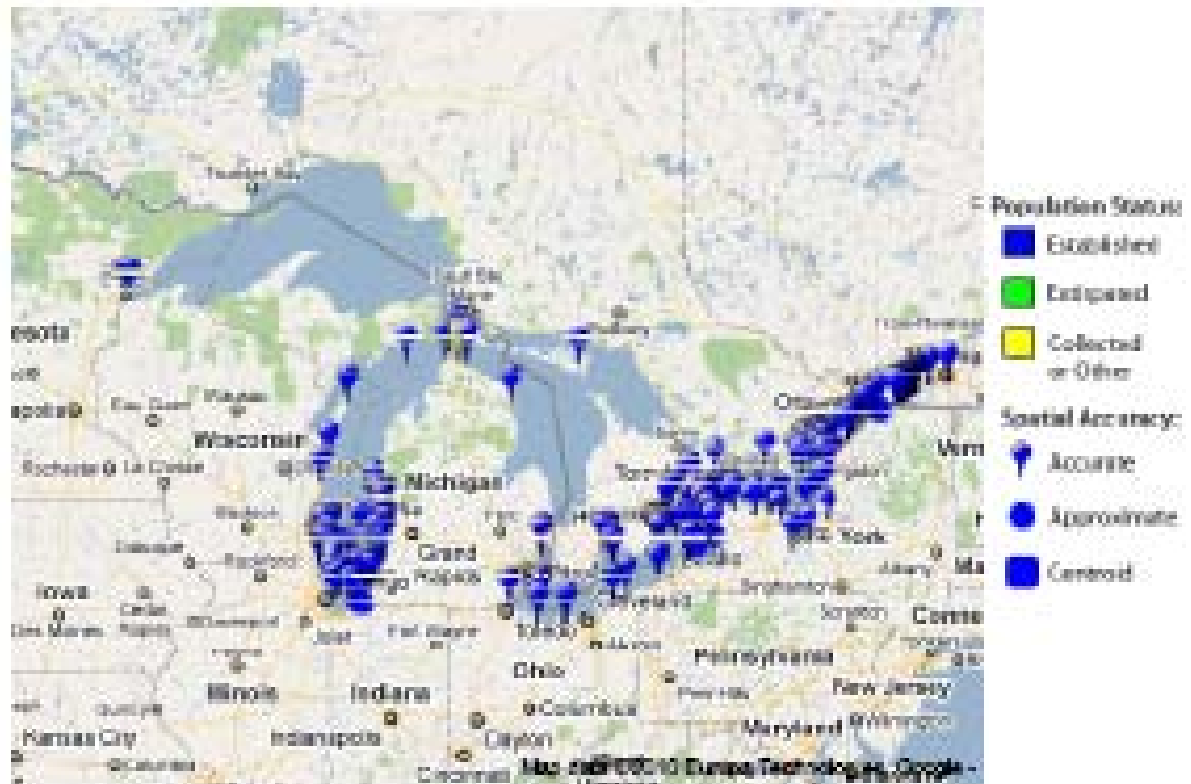
New in 2010 – Point Mapping

Replaces the older HUC (watershed) mapping system

All reports are now georeferenced

Zoomable to a particular geographic area of interest

Interactivity allows instant access to records at a particular geographic location



This map only depicts Great Lake introductions.
[Click here for the national map](#)

GLRI Enhancements

- Range Expansion Species
- Risk Assessment Information
- Watch List Species
- Expanded Bibliographies
- Expanded Access for non-technical audiences
- New field for Management Information (2011)

Range Expansions

- 'Range Expansions' are defined as those species native to one portion of the Great Lakes but which are considered invasive to other portions of the basin.



Range Expansion Criteria

The following criteria are used to evaluate species for inclusion on the 'range expansion' list:

- Species are regarded as 'native' to a portion of the Great Lakes basin, as specified within the GLANSIS criteria as historically recorded and established in a localized region of the basin (below ordinary high watermark, including connecting channels, etc.).
- Species suddenly appear in parts of the basin historically not documented.
- Species subsequently spread within the basin beyond historically recorded region of establishment.
- Anomalous distribution is associated with human vectors of dispersal.
- Species are genetically and morphologically similar to the formerly localized, 'native' population.
- Species that are cryptogenic to only a portion of the Great Lakes basin and are clearly spreading beyond their historically documented distribution are included as range expanding species.
- Species that are cryptogenic to the whole basin are not included if there is no evidence of expansion.

Range Expansion Species To Date



Species native/cryptogenic in Lake Ontario, invading above Niagara Falls



Sea lamprey



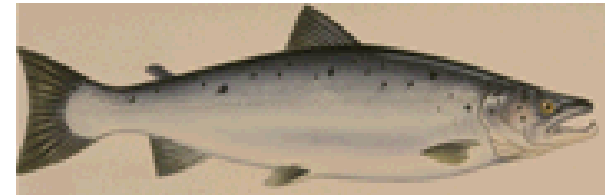
Alewife



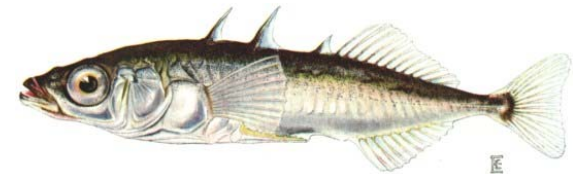
American eel



Margined madtom

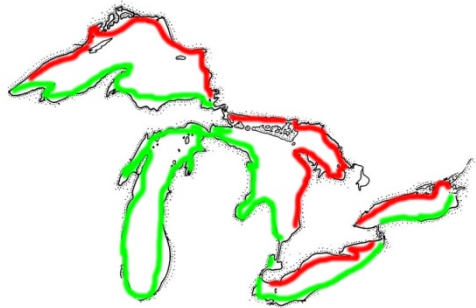


Atlantic salmon

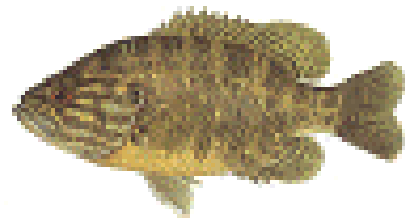


3-spine stickleback

Range Expansion Species To Date



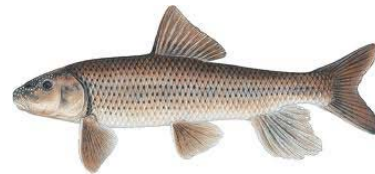
Expanding northward - native to US Great Lakes but considered invasive on the Canadian side



warmouth



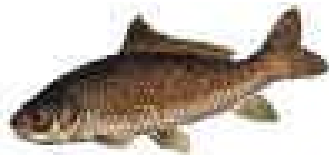
Lake chubsucker



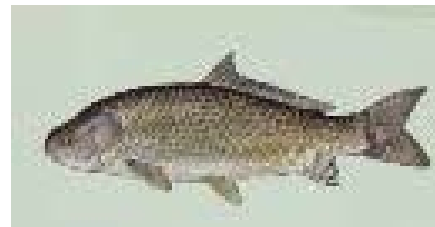
Spotted sucker



Northern madtom



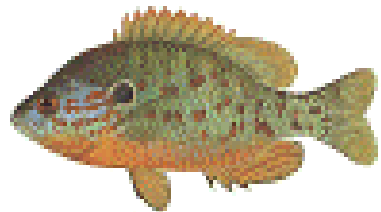
Bigmouth buffalo



Black buffalo

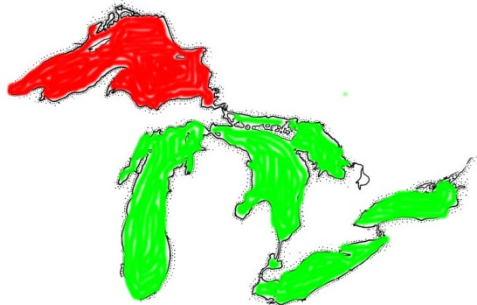


Flathead catfish



Orange-spotted sunfish

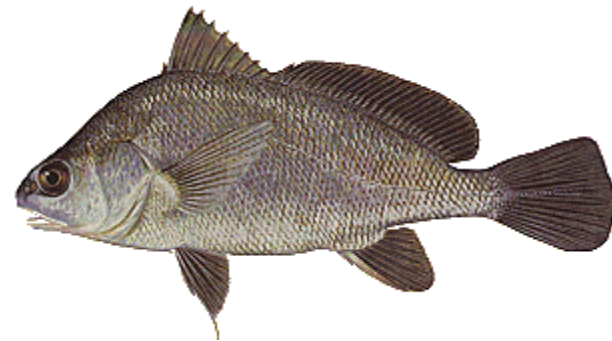
Range Expansion Species To Date



Native to the lower Great Lakes, invading Lake Superior above the Soo locks



Brook silverside



Freshwater drum

Range Expansion Species To Date



Native/cryptogenic to Lake Erie – expanding northward



Rusty crayfish



Native/cryptogenic to Lake Erie and Huron, invading Lake Michigan



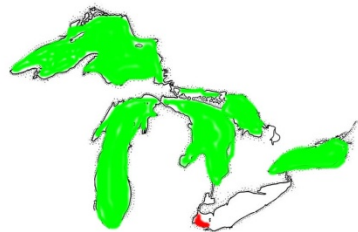
River darter



Native/cryptogenic to Lake Michigan, invading Lake Erie



Bullhead minnow



Native in Lakes Superior, Michigan, Huron and Ontario; Introduced Lake Erie and Lake St. Clair



Brook trout

Impact Assessment



- Objective: Improve the consistency of formatting in the “Impact” section of the fact sheets and improve the capacity of the GLANSIS database to support cross-species comparisons of relative impact.
- Tool developed and in final testing phase.

Watchlist



- Assessment criteria
- Literature review -> list of the 75 highest risk invaders (for the Great Lakes)
- Currently out for review