



A National Fisheries Data Infrastructure Overview

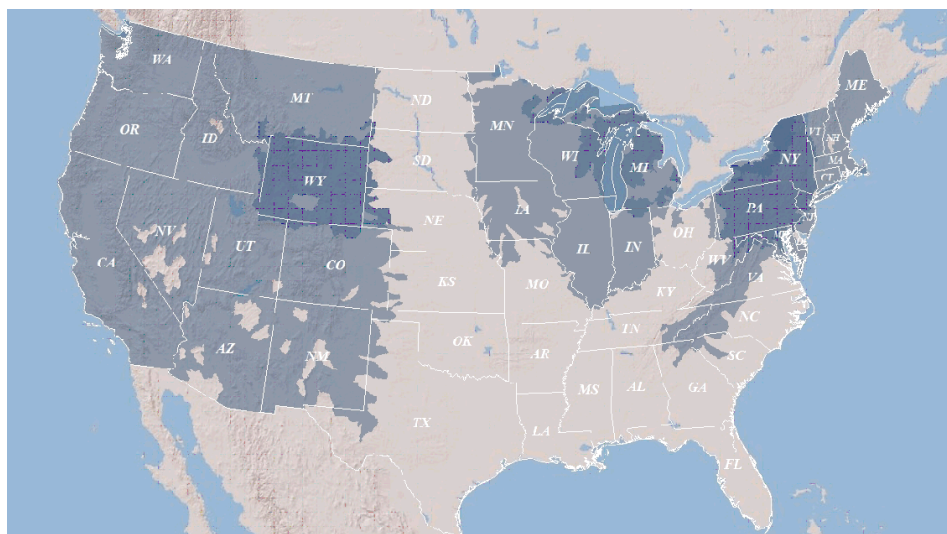
A single source providing U.S. fish distribution information will soon be available. It's called the National Fisheries Data Infrastructure (NFDI) and you can reach it via the National Biological Information Infrastructure (NBII) Fisheries and Aquatic Resources Node (FAR) at <http://far.nbii.gov>.

Fisheries biologists, resource managers, conservationists, and the general public are invited to visit the NFDI to gain synthesized distribution data on freshwater fish species summarized from multiple information systems.

Origins

The NFDI will be hosted by the NBII, a Web-based program coordinated by the U.S. Geological Survey that provides information on the nation's biological resources. The NFDI is scheduled to go live in September 2009, but its origins can be traced back more than a year to the National Fish Habitat Action Plan (NFHAP) <http://fishhabitat.org/>, a non-regulatory and voluntary effort focused on the protection, restoration, and enhancement of fish habitat in key watersheds.

Because the NFHAP is science-based, there is a great need to integrate data from many sources to help researchers assess the condition of the nation's fish habitat. The NFHAP Data Team is working to provide additional tools to the Fish Habitat Partnerships to aid their decisions of where to focus conservation efforts. One of the data needs identified is nationwide information on fish species distribution. The NFDI is committed to answering this need by creating a fish species presence layer at the Hydrologic Unit Code 8 scale to be made available for the assessment of current fish habitat conditions.



Spatial extent of the data currently captured in the National Fisheries Data Infrastructure.

Partnership Driven

The NFDI integrates species distribution information from disparate databases across the nation to support the needs of the NFHAP. Thus far, four databases representing existing regional fisheries information systems have been integrated: Multistate Aquatic Resources Information System (MARIS); Sturgeon Information Infrastructure; Eastern Brook Trout Joint Venture; and AFS Western Native Fishes Database. Each of these databases, though created at differing resolutions, for different purposes, and containing widely variable data, has crucial information which can be aggregated to create a national level view of fish presence. The resulting interface seamlessly queries the multiple systems to make nationwide fisheries information available for users.

NFDI users can search by species, state, and Hydrologic Unit Code. Data output is presented in table format, which can also be downloaded to a file ready to import into any spreadsheet or database software application. Distribution of the

queried species is presented in a map that is generated on-the-fly to help the user visualize the available data.

Coming Soon

The next phase of NFDI development includes incorporating data from the U.S. Fish and Wildlife Service's Fisheries Information System Population Module. By incorporating these data, many gaps in the coverage of U.S. species distribution information will be filled.

By continuing to develop the NFDI, future assessments of the fish habitat across the nation will be refined to help provide improved information to natural resource managers and the conservation community.

For More Information

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Multistate Aquatic Resources Information System

Integrating State Data into the National Fish Habitat Assessment

To address the need for quantitative aquatic species information over large geographic scales, the Multistate Aquatic Resources Information System (MARIS) initiative <www.marisdata.org> is being conducted by 11 states (Iowa, Michigan, Wisconsin, Minnesota, Illinois, Indiana, Pennsylvania, Maryland, New Jersey, New York, and Wyoming). MARIS is designed to link existing aquatic databases of several states and to make that information accessible in a common format via the Internet. Each state maintains authority and responsibility for its own database, but supports Internet access through a defined set of summary queries and reports.

Beyond the strong collaborative working relationships between agencies, a unique feature of MARIS is the goal for implementing connections between data servers in each state and the centralized query server. This system alleviates many requests directly to states for data and greatly enhances the utilization of data from multiple agencies.

Does MARIS Work?

One implication of this project is the ability to compile and compare status and trend information on aquatic species at larger geographic scales. An initial analysis of the system conducted by the U.S. Forest Service determined that the data available through MARIS met this objective. Further analysis to link the information to existing physical/chemical databases, land use databases, GIS systems, and so forth will offer agencies the capability of evaluating the effects of various management projects, land use decisions, climate change impacts, fish passage projects, and other factors on aquatic systems over larger inter-



Eleven MARIS states as of 2009.

jurisdictional scales. The initial states in the MARIS project expressed a willingness to work together and with the federal agencies; thus, they are establishing a template for data sharing that may be adopted by other states that recognize the need and advantages of compatible information systems across the country.

Benefits of Participation

MARIS is a good example of the accomplishments that can be achieved through strong cooperative relationships between state and federal agencies. State agencies directly benefit by improving their internal system of data management and ultimately more streamlined and cost efficient programs. Financial support is generally provided to states to assist them in strengthening their internal fisheries information management systems. Additionally, MARIS states benefit greatly from interaction and exchange of ideas with other states and with from the technical expertise available from three research institutions currently under contract to conduct MARIS work, including the University of Iowa Geographic Modeling Systems Laboratory which houses the MARIS system.

All agencies benefit by gaining access to quality data on the status and trends of aquatic species across jurisdictional boundaries. Available data extends from the 1930s to the present in some states. The value of data that can be made available nationwide – when taking into account the time and effort expended on data collection, analyses, and compilation – is immeasurable. Based on current annual fisheries expenditures, this would be in the billions of dollars over a period of years. At the 1998 Freshwater Fisheries Database Summit attended by 47 state agencies, participants identified the MARIS model as one that should be explored and developed further.

For More Information

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