

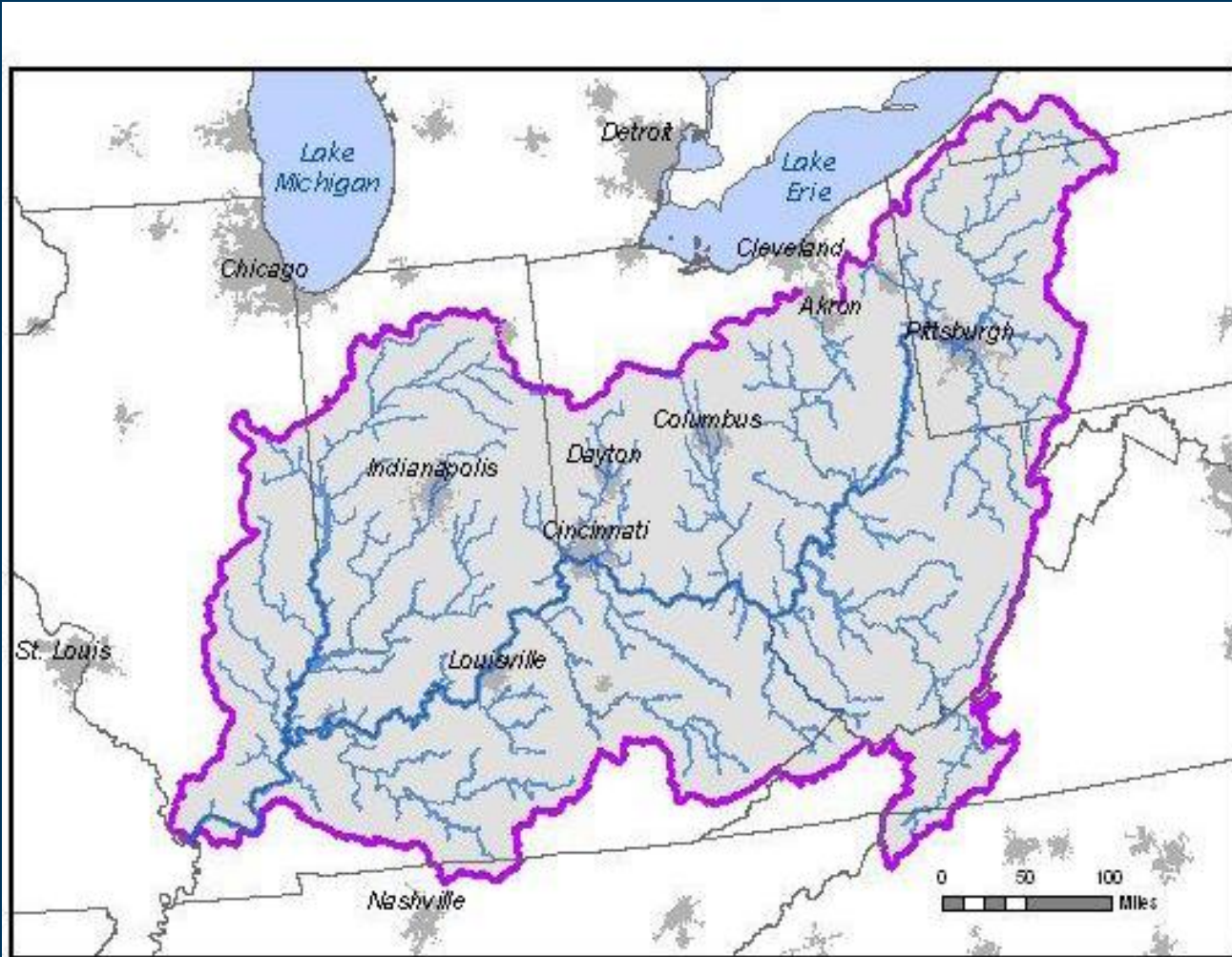


Background of Upper OH



TNC designated the “Upper OH” River as 1 of 12 Integrated Landscapes in 2007 with the Ohio OU in the lead.

- Integrated landscapes are priority, system-level projects that extend across multiple states.
- Initial TNC planning started in Spring 08 & completed in Spring 09. Project scope now defined as much of the Ohio River Basin from NY to confluence with MS in Illinois.

“Upper” Ohio River Basin



Legend

-  Urban Areas
-  Ohio River Basin FHP

Vision for the Ohio River System

Revitalization of the Ohio River System for the benefit of people and nature through the cooperative restoration of key river processes and critical aquatic habitat.

- **2050 Vision:** The Ohio River and its tributaries are functionally restored with improved flood assimilation capacity and widespread and diverse native great river fish and freshwater mussel populations

Great River Fish Needs

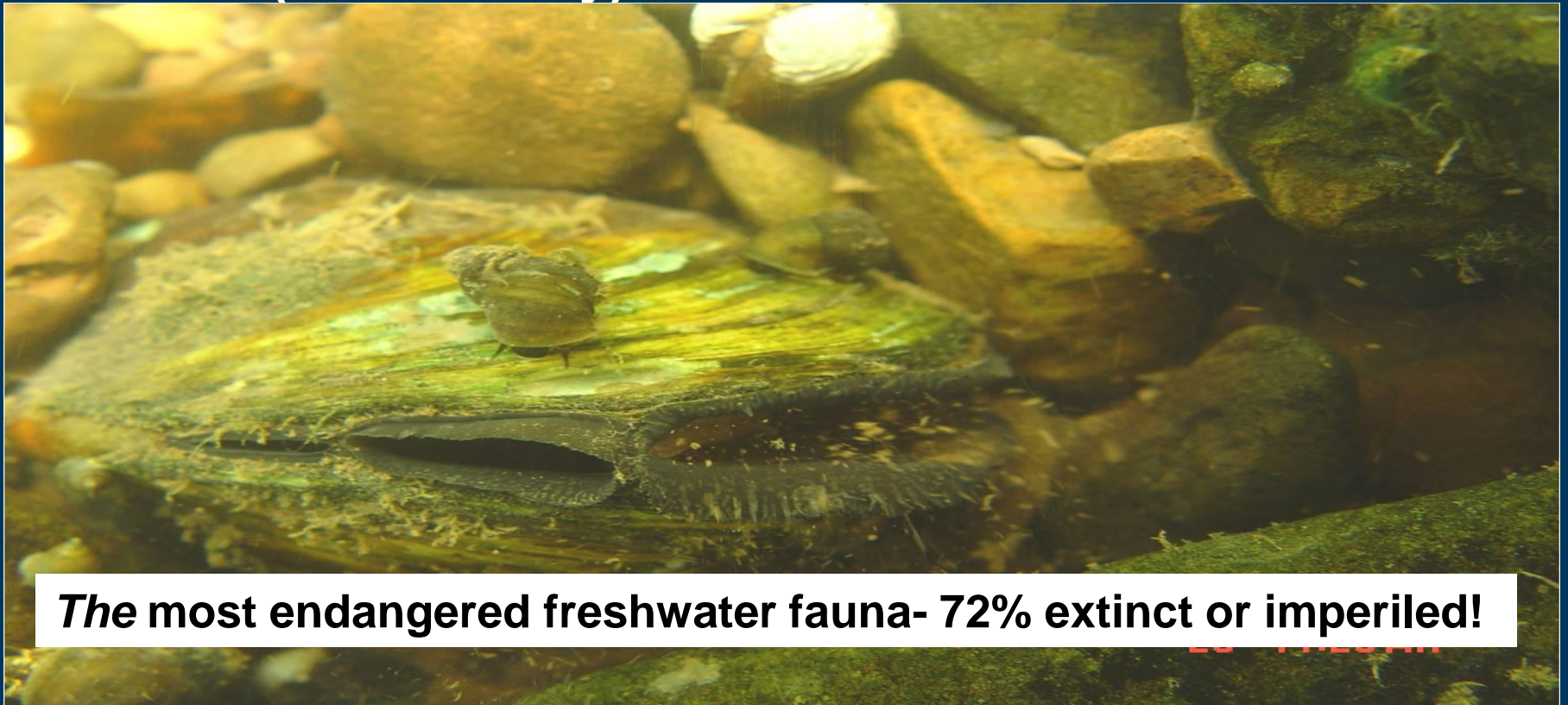
Ancient fishes such as sturgeon, paddlefish and blue sucker, and inland herrings:

- Range over *very* long distances (lack of connectivity is a key threat)
- Need rock bars for spawning (dredging and sedimentation are key threats)



Freshwater Mussel Key Ecological Needs

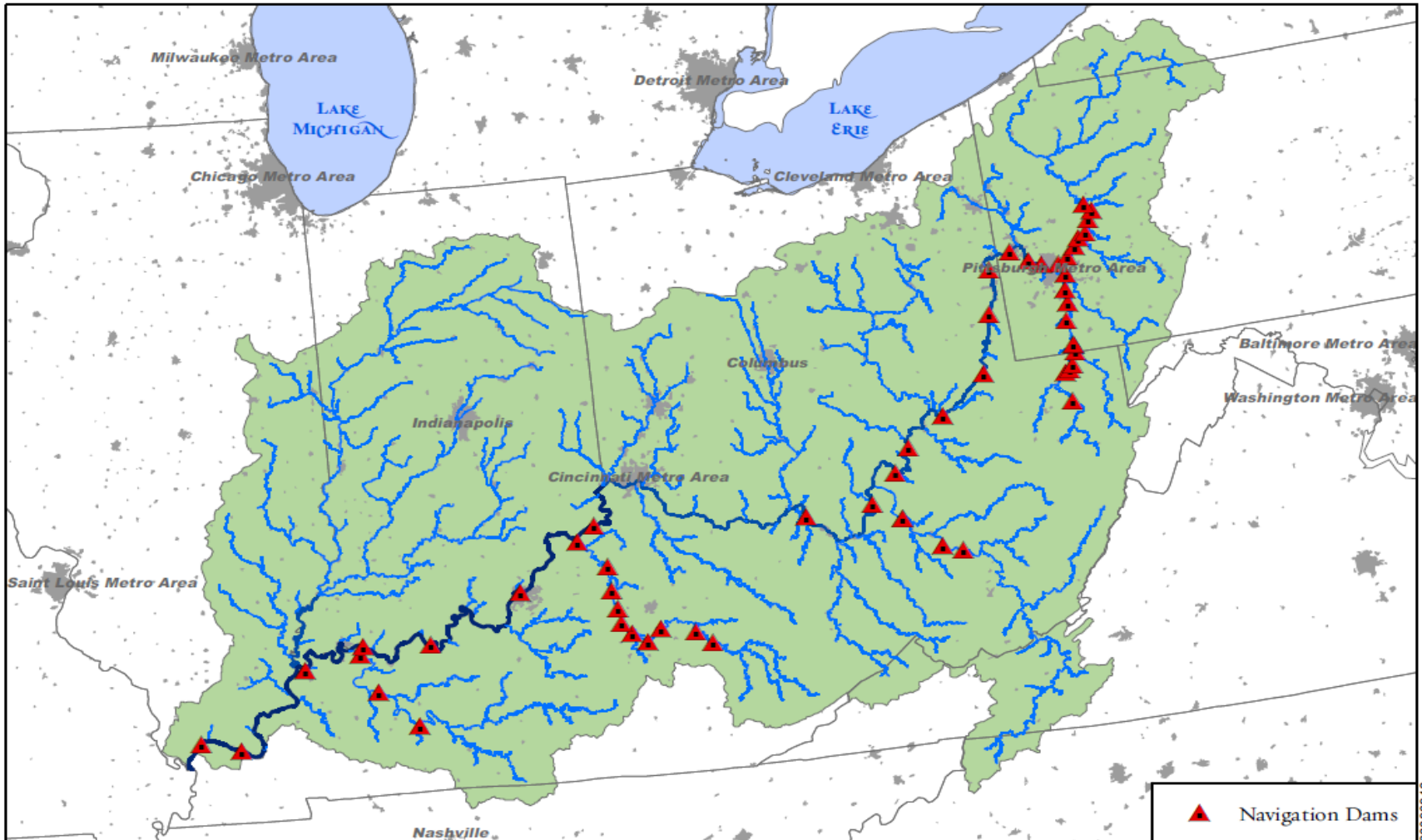
- **Stable gravel substrate (sediment and dredging)**
- **Correct fish hosts needed to complete lifecycle and distribute (connectivity)**



The most endangered freshwater fauna- 72% extinct or imperiled!

Great River Fish Passage Challenges

Locations of Federal Locks and Dams in the Ohio River Basin Fish Habitat Partnership Project Area



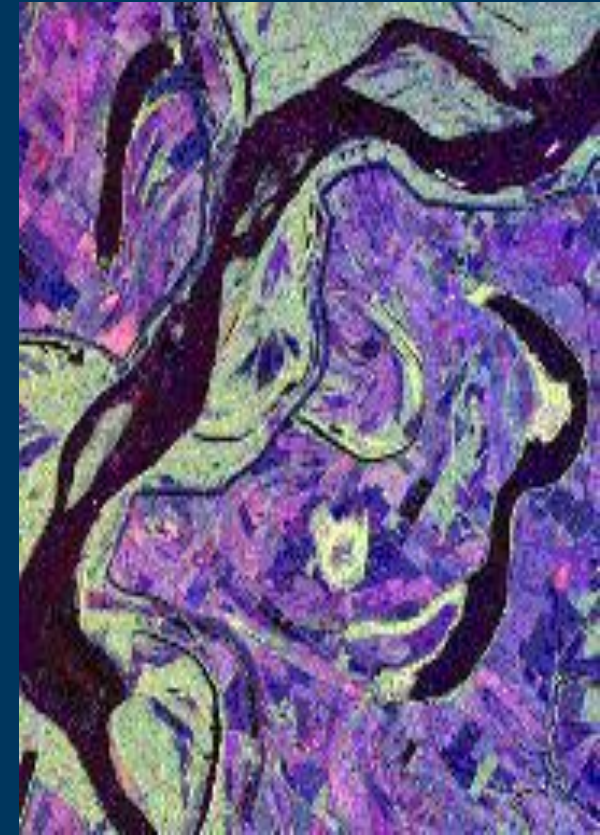
FY 10-11 Ohio River Conservation Strategy/Plans

Improving Great River Fish Passage (System Connectivity)

- a) Obtain TNC - USACE Great Lakes & Ohio River Div MOU that includes project passage and floodplain feature connectivity (Signature stage).
- b) Identify operational changes needed to facilitate GR fish passage during key life history events (spawning and return).
- c) Incorporation of permanent fish passage structure/operations into renovated Upper OH River Navigation Projects

Protecting and restoring floodplain function (Addressing loss of Floodplain connectivity)

- a) Complete an analysis of the active river area and its features along the Ohio River main stem and high biodiversity tributaries (Completed).
- b) Identify potential partnerships for future cooperative protection/restoration (several identified including Ohio River Islands NWR, & USACE).



Restoring **key** aquatic habitat (addressing multiple threats)

- a) TNC leads the strategic planning for the Ohio River Basin Fish Habitat Partnership (ORBFHP) and facilitates its official recognition by the National Fish Habitat Board (Achieved Oct 2009).
- b) Basin-wide habitat assessment (with 5 other partnerships ORBFHP recently secured a USFWS grant to do this).
- c) Amendment of 2000 WRDA authorization for a Ohio River Ecosystem Restoration Program to include the northern half of the basin.

Ohio River Basin FHP Strategic Planning



- Approximately 50 agencies, organizations, agencies, and universities represented in the planning process
- 5 in-person meetings and numerous video calls during 2007-10

Mission Statement

The Ohio River Basin Fish Habitat Partnership focuses protection, restoration, and enhancement efforts on priority habitat for fish and mussels in the watersheds of the Ohio River Basin for the benefit of the public.

Ohio River Basin Fish Habitat Partnership



Fish

340 species (14 federally listed)

Freshwater Mussels

130 species (38 federally listed)



Habitat Conservation Targets

- Headwater and small streams (watersheds < 200 sq miles) and the signature long-ear sunfish, rainbow, and orangethroat darters
- Medium rivers (watersheds 200-3,681 sq miles) and the signature fish of smallmouth and spotted bass, tippecanoe and logperch darters
- Large and great rivers (watersheds > 3,681 sq miles) and the signature fish of sauger, paddlefish, sturgeon, and blue suckers

Conservation Targets Cont'd

- Off-channel systems (e.g. oxbows, sloughs, and other secondary channels) and the signature fish of largemouth bass, pickerel, & paddlefish
- Native aquatic vegetation
- Native mussels (native , fluvial dependent species)

Target Viability Analysis/ Desired Future Conditions

Great and Large River Fish			Indicator Ratings					Desired future condition = Good or V. G.	
Category	Key Attribute	Indicator	Poor	Fair	Good	Very Good	Current status	Rating Source	
Landscape Context	Flow Regime	% of key projects with flow regimes that enable spawning	<20%	21-50%	51-75%	>75%	Poor	USGS Conn. Study	
	Lateral Connectivity (FP features)	% of FP features connected in 2 year flood	<20%	20-35%	35-50%	>50%	TBD	ARA Anal.	
	Longitudinal Connectivity (stream reaches)	% of contiguous stream miles connected	<70	70-79	80-90	>90	Poor	Expert Opin.	

Protection/Restoration Strategies

- Identify and protect intact and healthy waters
- Restore natural variability in river and stream flows
- Reconnect fragmented river and stream habitat, to allow access to historic spawning, nursery, and rearing grounds
- Reduce and maintain sedimentation, phosphorus and nitrogen runoff to river, and stream habitats to a level within 25% of the expected natural variance in these factors or above numeric State Water Quality Criteria

Strategy Areas Cont'd

- Reduce other key pollutants or degrading environmental conditions (acid drainage, heavy metals, altered temperatures, or oxygen levels) in degraded priority stream habitat to a level within 25% of natural rates or above numeric Stream Water Quality criteria by 2020

Reduce the potential for invasive species impact through prevention and control measures at the basin-level and within priority systems.

Example of Strategic Actions

Strategy 3 – Reconnect fragmented river, stream, reservoir, coastal, and off-river habitats to allow access to historic spawning, nursery and rearing grounds.

1. Physically remove or modify (where possible) 25 dams and other barriers that prevent aquatic organism movement by 2025.
2. Modify operational regimes to improve fish and aquatic organism passage through 25 locks, dams and other structures by 2025.
3. Reconnect 1000 acres of key floodplain and off-river spawning habitat along priority streams to allow access for signature conservation targets by 2025.

Early Action Sites



Legend

- Early Action Sites
- Ohio River Basin FHP

Ongoing ORBFHP Activities

- **Enable removal of 5 small dams (with cooperative funding from the USFWS) in the Wabash River watershed (IN) and Stillwater River (OH) that will reconnect approximately 400 stream miles**
- **Analysis of floodplain features (ie oxbow lakes, secondary river channels) with different connectivity/successional fishery conditions**
- **Comprehensive basin-wide Habitat Assessment**

