International Conference on Engineering and Ecohydrology for Fish Passage

International Conference on Engineering and Ecohydrology for Fish Passage 2014

Jun 9th, 1:50 PM - 2:10 PM

Developing regional goals for connectivity restoration

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Developing Regional Goals for Connectivity Restoration

1

Todd Hogrefe, National Fish & Wildlife Foundation

Mary Khoury, The Nature Conservancy

- Grant funding to restore habitat in the Great Lakes basin

- $37 million awarded since 2006 ($8.3 million in 2013)

- Focal issues

  - ✓ **Aquatic connectivity**
  - ✓ Stream and riparian habitat
  - ✓ Wetlands
  - ✓ Coastal habitat

SOGL Aquatic Connectivity Investments

2006–2013

- Projects funded: **39**
- Project grant $: **10.3 million**
- % total grant $: **27.7**
- Barriers eliminated: **158**
- Miles reconnected: **1,044**

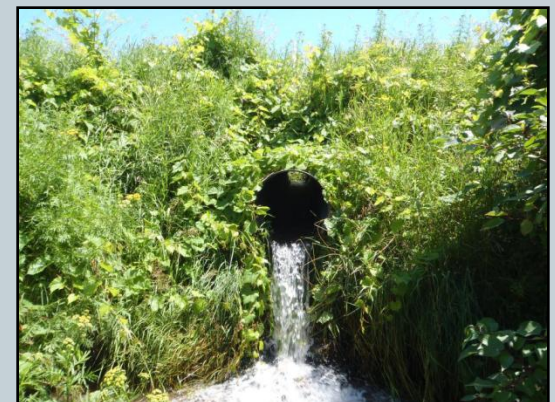Photo: Grand Traverse Cons. District

Photo: Conservation Resource Alliance

Photo: Ducks Unlimited

# Projected SOGL Connectivity Investments

2014–2024

- Barriers per $1 million: **15**
- Miles per $1 million: **100**

- Projected **$20 million** connectivity investment over 10 yrs

- Eliminate **300** fish passage barriers
- Restore upstream fish access to **2,000** stream miles

Scope of Issue, Scale of Impact

- Potential fish barriers: **275,902**
- Fully/partially impassable barriers: **170,000+**
- Barriers to be removed with SOGL $: **300 (0.17%)**
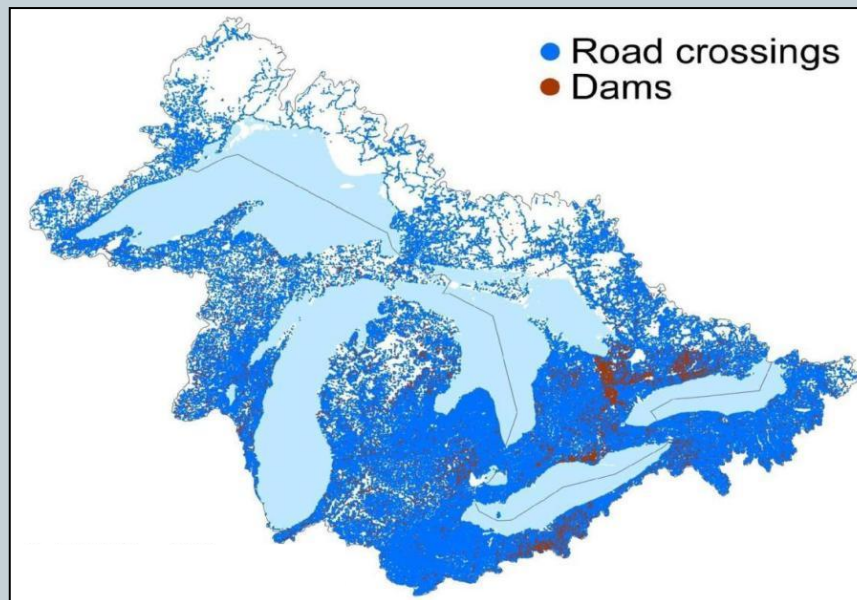
Januchowski-Hartley et al. 2013

Importance of Investing Strategically

- SOGL to address a very small percentage of existing barriers

- But barrier removals can have disproportionately large impact on connectivity if prioritized strategically

Photo: Conservation Resource Alliance

Current SOGL Selection Criteria

- Priorities
  - ✓ Biodiversity/species assemblages
  - ✓ Water quality
  - ✓ Areas of Concern

- Cost-effectiveness (e.g., miles/$)

- Grantee experience/past performance

- Social/ecological constraints

- Shovel-readiness

Photo: USFWS

But Without Goals . . .

- Can't assess contribution of individual projects toward a broader set of objectives

- Hard to determine total investment needed

- No context for tracking progress
  (We've helped reconnect 1,044 miles – Is that a lot?)

- Hard to define impact in meaningful terms

Value of Shared Goals

- Strategic focus

- Resource leverage

- Cumulative benefits

- Tracking of ecologically significant outcomes (beyond miles)

- Assessment of individual and collective impact

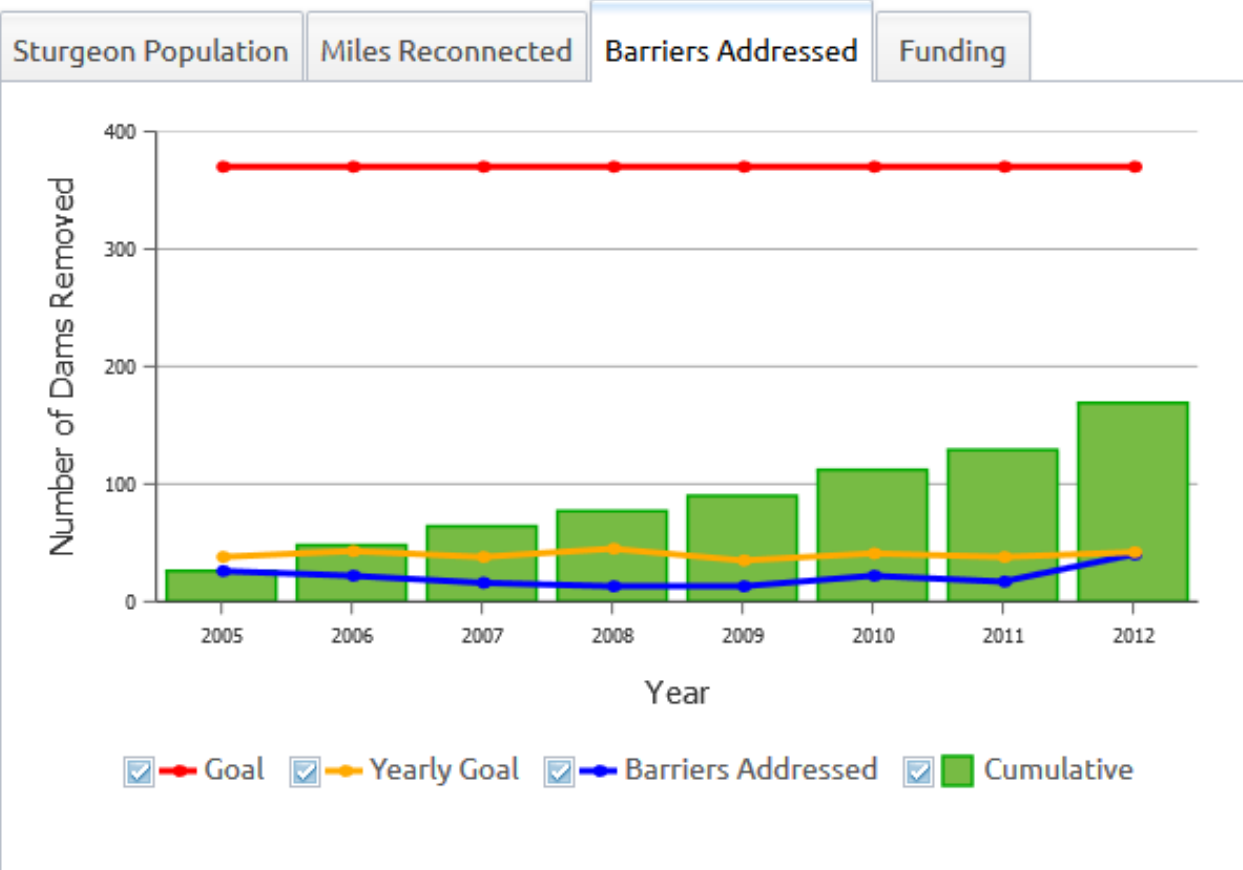Photo: USFWS

A framework for goals

Scale	Inputs	Interim Outputs	Interim Outcomes	Ultimate Outcomes
Example	$$	• Stream miles opened • Barriers removed	% increase in fish population	Viable populations in representative river types
Great Lakes Basin				
Individual Great Lake basin				
Sub-basins				

Relate population goal to conservation actions

Approach to goal setting in the Great Lakes

- You're invited: Wednesday, June 11 3:15 – 5:15

Goal-Setting Workshop:

Establishing Regional Goals for Connectivity Restoration in the Great Lakes Based on Migratory Fish Populations

Matt Herbert, Mary Khoury, The Nature Conservancy   Wednesday, June 11, 2014

The Trailer

In search of the ideal . . .
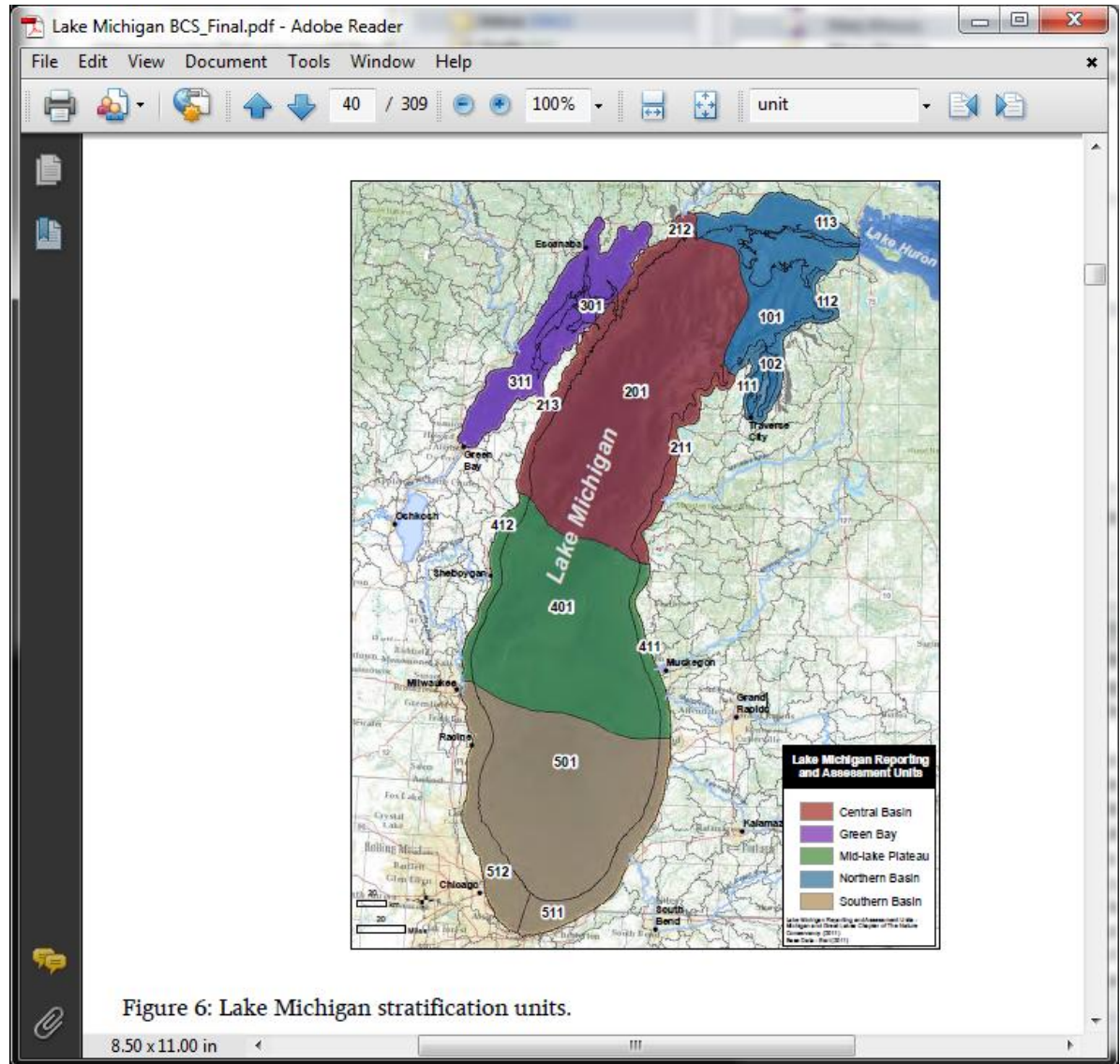
Ideal population goal

- Tributary population size
- Regional population size
- % population increase (regional or tributary specific)

Explore other approaches

- Extrapolate from open water to tributaries
- Base goal on increased spawning habitat

Coming attraction . . .

Sub-regional webinars with regional experts to develop, review and refine proposed goals

Figure 6: Lake Michigan stratification units.

Tributary connectivity goals based on population goals

- Identify specific tributary reaches that could contribute to goals