

Expanding the boundaries of resilience: how considering the social creates a stronger Twin Ports

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Outline

- What is resilience?
- Why does GLTED care about resilience?
- What challenges resilience?
- Resilience in the Twin Ports and AOC communities

Remediation to Restoration to Revitalization (R2R2R)

To help transform remediation projects into sustainable revitalization of the surrounding community by maximizing the positive societal and environmental outcomes

Restoration & Revitalization



Managing Contamination

Partnering companies purchased a 15-acre parcel in Ashabula Township for a Sediment Consolidation Facility, where contaminated sediments from the riverbed would be stored. This facility was completed in 2006.

State and federal agencies implemented dredging of the Ashabula River between 2006 and 2011, removing over 700,000 cubic yards of contaminated sediment from the river and reopening it for commercial shipping and recreational boating. The contaminated material was pumped into a specifically designed landfill and isolated from the environment.



Restoring the River

Restoration of the Ashabula River began in 2008. About 2,500 feet of fish shelves and a total of 10.5 acres of river, wetland, and upland habitat were created, providing a home for mammals, birds, and fish.

Through the efforts of many, the Hush-tah-hush-lah River is returning to its former glory as a "river of many fish."

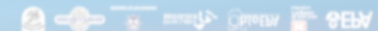


Using funds from the US EPA, US ACF, industry and the State of Ohio, approximately 700,000 cubic yards of contaminated sediment was removed from the river between 2006 and 2011, pumped up through a 2.5 mile pipeline to a specially designed containment facility and into permeable ridges, traps that separate contaminated sediment from the river water.

The Ashabula River Partnership: A model approach to environmental cleanup



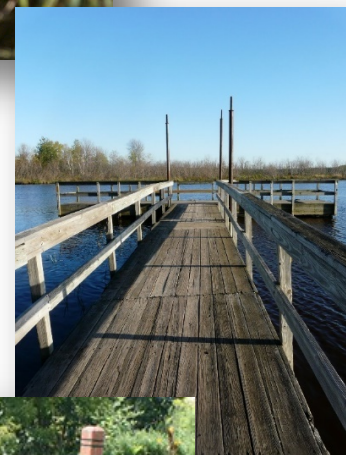
2011-2012 Ashabula River Partnership Annual Report



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R2R2R as a Social-Ecological System

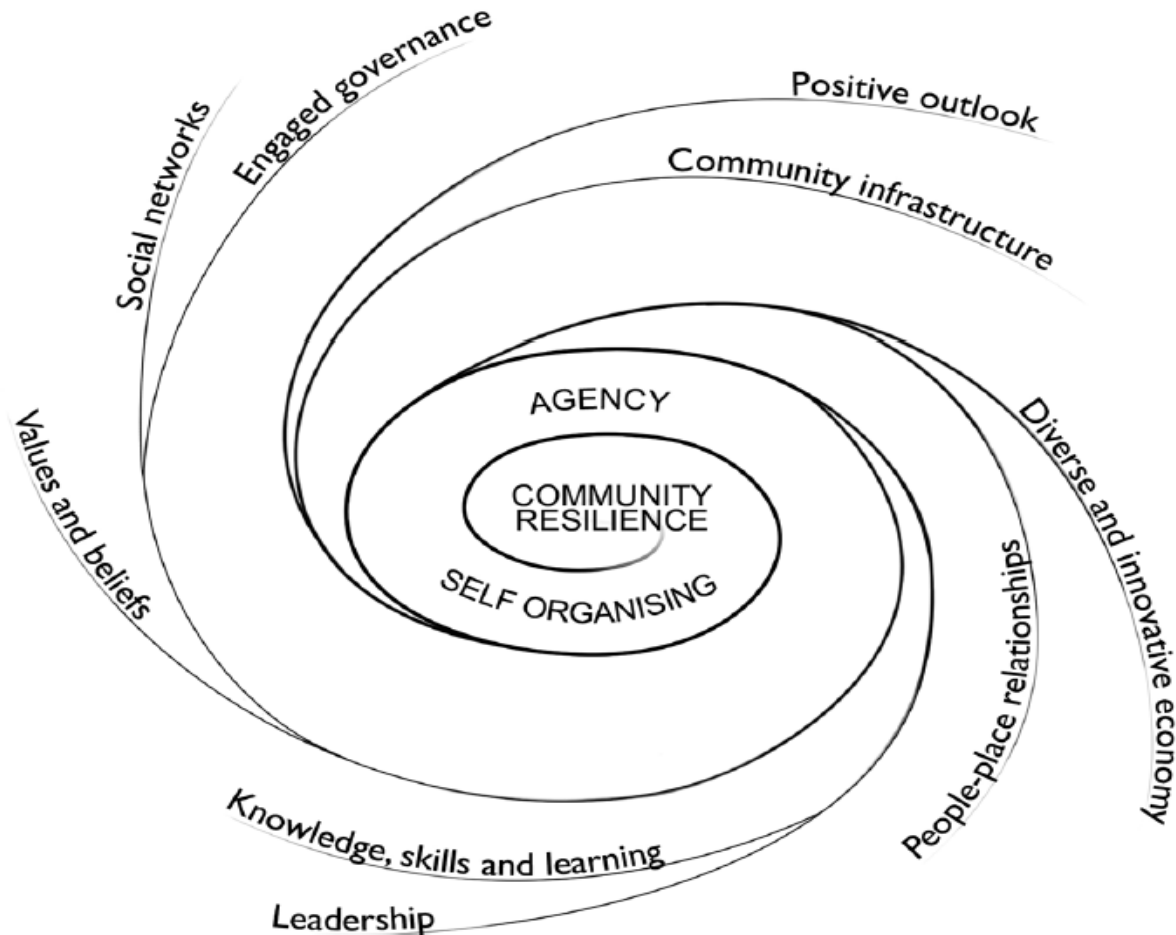
- Ecosystem-based
- Adaptive management (project effectiveness)
- Ecosystem services ~ environmental quality, ecological integrity
- Beneficiaries
- Community and stakeholder engagement



Resilience

In its broader context, resilience is about ecosystems and people together as integrated socio-ecological systems in which social systems and ecosystems are recognized as coupled, interdependent, and co-evolving

(Berkes and Folke 1998; Folke 2006) in Berkes and Ross 2013



Question 1. What does resilience look like?

Resilience

- Built around two-way communication, building trust, and equity
- Stakeholders and community were involved in creating the recommendations
- Ongoing research was responsive to the project design
- MNDNR has included the recommendations – improved eco and health outcomes



Social vulnerability

Hazards

Vulnerabilities

Adaptiveness

Resilience

These are intertwined terms and can impact not only the physical environment, but also social communities.

Question 2. In the context of community, what makes us vulnerable?

- Reality TV
- Fluffy bunnies
- When adverse conditions challenge the capacity to survive or thrive
- Taking quizzes

Social vulnerability

Is resilience always a good thing?

Question 3. What are the kinds of hazardous resilience that can contribute to vulnerability?

- Poverty
- Viruses
- Cancer
- Racism and discrimination
- All of the above

Hazards and resources

- Hazards can make communities vulnerable. But communities are made up of people and people can be very adaptive, as individuals, groups, civic support, and institutions.
- Which of these are examples of resources to help overcome vulnerabilities?

Question 4: Individual level

- Positive outlook
- Talents, skills and creativity
- Ability to cope with change
- All of the above

Question 5: Societal level

- Empathetic and trustworthy family and friends
- Leadership and organization
- Inclusive group activities, advocacy, and support
- All the above

Community and community vulnerability

Question 6: Civic

- Effective, inclusive communication and responsiveness
- Equitable economic and infrastructure support
- Gentrification
- Multiple choice that allows you to choose multiple answers

In a nutshell:

Multiple hazards and vulnerabilities at multiple physical and social scales

Multiple resources to support environmental and community resilience

Question 7: Health

- Community relevant trauma care
- Equitable access to clinics, hospitals, and emergency care
- Equitable access to healthy food, water, air, soil
- Equitable access to natural environment
- Chocolate

How do we get there from here?

How do we get
to community
resilience?

Is community
resilience
related to the
AOC?

Does it matter?



Hazards and the AOC

AOC

- Are there any hazards that threaten resilience in our AOC?
 - Climate change
 - Aquatic invasive species
 - Legacy contaminants
 - Contaminants of emerging concern

Communities

- Are there any hazards that threaten resilience in our communities?
 - Climate change
 - Aquatic invasive species
 - Legacy contaminants
 - Contaminants of emerging concern

The hazards on these lists are the same.
Are they the same?

Engaged governance and social networks

- If you have a challenge in your work, do you know who to call to help?
 - Yes
 - No
 - It depends
- This is an important resilience indicator



Image: NASA Earth Observatory

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