St Lawrence Environment
Natural Resource Damage Assessment

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What is Natural Resource Damage Assessment?

- Regulatory authority: CERCLA, Oil Pollution Act, Clean Water Act
- A process to determine
  - Injuries and service losses
  - Appropriate amount & type of restoration needed
- Goal is to “make public whole” following release of hazardous substances & oil
- “Trustees” act on behalf of public
- NRDA success:
  - Measured by amount of appropriate restoration achieved
NRDAR Trustees

- State Governors
- Tribes/Indian Nations

St. Lawrence NRDAR Trustees

- NYS Department of Environmental Conservation
- St Regis Mohawk Tribe
- U.S. Dept Interior
- U.S. Dept Commerce
St. Lawrence NRDAR Case Background

- **Responsible parties:**
  - ALCOA (Reynolds)
  - General Motors

- **Trustees:**
  - St. Regis Mohawk Tribe
  - Department of the Interior (US Fish and Wildlife Service)
  - National Oceanic and Atmospheric Administration
  - New York State Department of Environmental Conservation

- Multiple Contaminants: PCBs, PAHs, Fluoride, metals

- One of first cooperative NRDAR cases

- One of first cultural assessments
Cooperative NRDAR

- Companies fund Trustee injury and compensation determination
- Parallel remedial efforts
- Enhances exchange of information and expertise
- Goal is to reduce interim losses, achieve settlements and restoration sooner than through litigation
- Challenges: trust, agreement, agree to disagree
Three-Pronged Approach to Damage Assessment

- Ecological Injury/Losses
  - Injury to natural resources

- Human Use Recreational Fishing Losses
  - Lost fishing opportunities

- Cultural Injury
  - Injury to natural resources that affects significant cultural uses of those resources
Restoration Planning

- Press release and letters sent to potentially interested individuals, agencies, organizations in 2006
- St. Regis Mohawk Tribe: Community Advisory Committee, Oral History Project, surveys, radio announcements, Cultural Impacts DVD
Ecological Injury

- Quantified injury to birds, fish and benthic organisms for PCBs, benthic organisms for PAHs and mammals for fluoride using Habitat Equivalency Analysis (HEA)
  - additional qualitative injury associated with other contaminants
  - toxicity thresholds from the literature
- Calculated interim (past and future) injury from contaminants
- Final output for HEA is acre-years of habitat loss
- Restoration projects have nexus to injury
  - selected to provide similar acre-years of habitat gain

Source: Stratus
Challenges to Assessing Ecological Injury

- Geographical scope
- Contaminants of concern
- Receptors
- Background
- Effects thresholds
- Service losses over time and space
Types of Ecological Restoration Projects Under Consideration

- Wetland Enhancement/Restoration
- Fishery Enhancement/Restoration
- Benthic Restoration
- Streambank Enhancement/Restoration
- Upland Enhancement/Restoration
- Avian Enhancement/Restoration
- Amphibian and Reptile Enhancement/Restoration
- Submerged Aquatic Vegetation Restoration
- Beluga Conservation Measures
- Fisheries Assessment and Management Plan
- Land Acquisition
Ecological Restoration Project Examples

Coles Creek Blandings Turtle Habitat Acquisition and Restoration

Dickerson Island/Murphy Islands Predator Control, Revegetation
Ecological Restoration Project Examples

Fish Passage - Hogansburg & Madrid Dams/Little Sucker Brook

Habitat Acquisition - Snye Marsh (RAMSAR) and Wilson Hill
Ecological Restoration Project Examples

Habitat restoration and stocking of lake sturgeon, Atlantic salmon, northern pike

Native warm season grassland restoration

Riparian buffers
Fish consumption advisories for PCBs exist for the Grasse River, and St. Lawrence River.

Used data from “RTI/TER St. Lawrence Area Outdoor Recreation Survey, 1991”

Random Utility Model used to estimate loss to recreational fishing
- calculated “lost” fishing trips between 1981 and 2030

Restoration projects sought to replace lost recreational opportunities: shoreline fishing and boat access.
Challenges to Assessing Recreational Fishing Injury

- Source data was planned and gathered without Trustee input.

- Double-counting potential with Cultural Methodology necessitated removal of any Tribal responses from the data (subsistence vs. recreation)

- Random Utility Models are less transparent than HEAs - challenging for most of the group

- Output in trips; damages also expressed in dollars.
# Recreational Projects Considered

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Recreational Fishing Projects Considered

Mid-Raquette River Launch

Lower Raquette River Launch

Upper Grasse River Launch
Cultural Injury

- Impact on uses of natural resources for cultural purposes
- Community driven approach
- Interviews with elders and others to understand sense of cultural loss and identify compensatory restoration projects
- Professional Anthropologist - Cultural Restoration Plan
Challenges to Assessing Cultural Injury

- Culture as practice
- Different world views of all parties
- Isolate the effects of contamination from other influences on culture
- Community-based research approach - *control of research given to Tribe*

Ultimate Goal: Restore ecosystems to full function (ecosystems include the people)
Cultural Services Restoration Goals

- Seek to promote the restoration of land-based cultural practices and traditional economic activities within the community and preservation of the Mohawk language

- Four areas of traditional cultural practice
  - Water, fishing, use of the river
  - Medicine plants and healing
  - Hunting and trapping
  - Horticulture, farming, basket-making
Cultural Restoration Projects Under Consideration

Master Apprentice Program

Youth Programs
Cultural Restoration Projects Under Consideration

Promote traditional use of natural resources
Status of NRDA and Next Steps

- 2011 Settlement of GM NRD claim
- Future resolution of remainder of NRD claim
- Release of Restoration Determination and Compensation Plan (RCDP) for public comment
- Restoration Planning, Implementation and Monitoring
Fifteen year process

Evaluate and quantify effects of contaminants on natural resources and the services they provide

Develop restoration projects to compensate for impacts to natural resources/services

Positive relationship with responsible parties

For more info:

- [http://www.fws.gov/northeast/nyfo/ec/nrda.htm](http://www.fws.gov/northeast/nyfo/ec/nrda.htm)
- [http://www.dec.ny.gov](http://www.dec.ny.gov)