St Lawrence Environment Natural Resource Damage Assessment

Lisa Rosman, National Oceanic and Atmospheric Administration
Anne Secord, U.S. Fish and Wildlife Service
Barbara Tarbell, St. Regis Mohawk Tribe
Sharon Brooks, New York State Department Environmental Conservation

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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

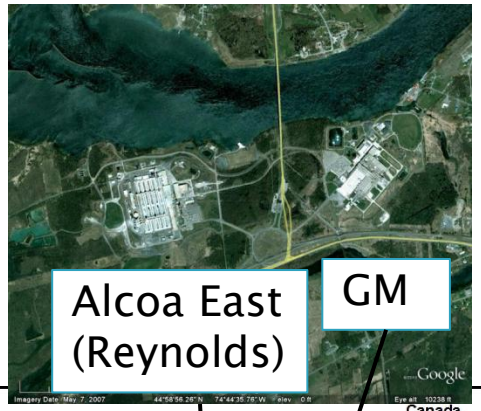
NRDAR Trustees

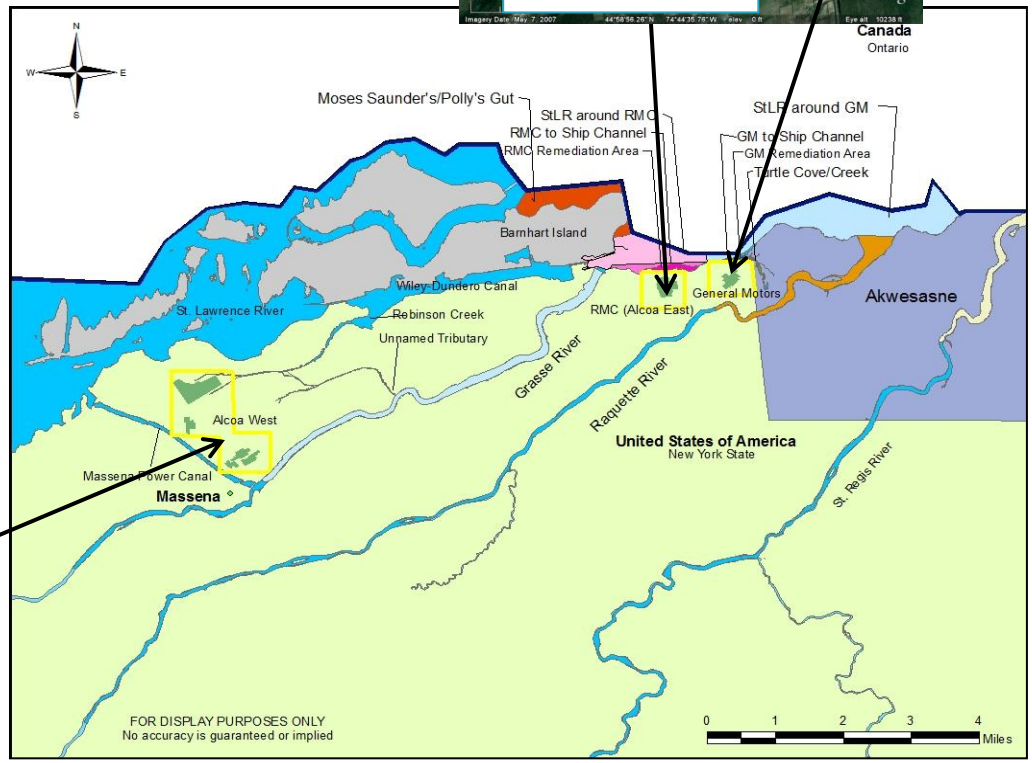
- State Governors
- Tribes/Indian Nations
- Secretaries of Federal Agencies (Agriculture, Commerce, Interior, Energy, Defense)

St. Lawrence NRDAR Trustees

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

St. Lawrence NRDAR Assessment Area





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

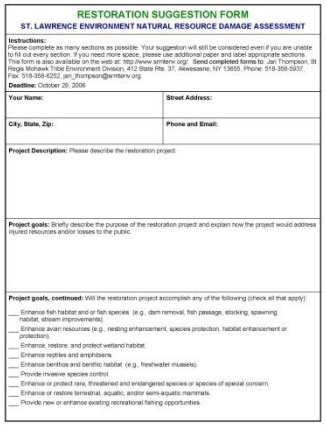
- Companies fund Trustee injury and compensation determination
- Parallel remedial efforts
- Enhances exchange of information and expertise
- Goal is to reduce interim losses, achieve settlements and restoration sooner than through litigation
- Challenges: trust, agreement, agree to disagree

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



RESTORATION SUGGESTION FORM
ST. LAWRENCE ENVIRONMENT NATURAL RESOURCE DAMAGE ASSESSMENT

Instructions:
Please complete as many sections as possible. Your suggestion will still be considered even if you are unable to fill out every section. If you need more space, please use additional paper and label appropriate sections. This form is also available on the web at: http://www.srmterv.org/ **Send completed forms to:** Jan Thompson, St Regis Mohawk Tribe Environment Division, 412 State Rte. 37, Akwesasne, NY 13655, Phone: 518-358-5937, Fax: 518-358-6252, jan_thompson@srmterv.org.

Deadline: October 29, 2006

Your Name:	**Street Address:**
City, State, Zip:	**Phone and Email:**

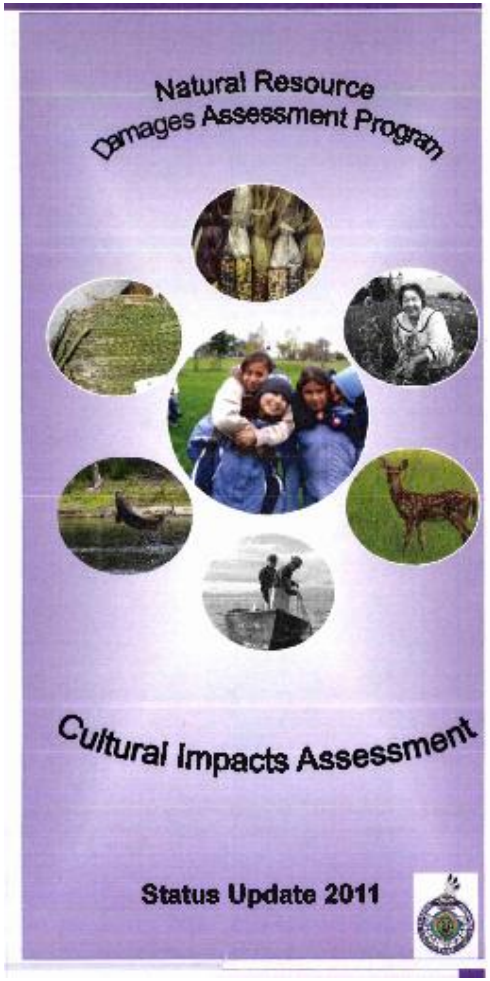
Project Description: Please describe the restoration project.

Project goals: Briefly describe the purpose of the restoration project and explain how the project would address injured resources and/or losses to the public.

Project goals, continued: Will the restoration project accomplish any of the following (check all that apply):

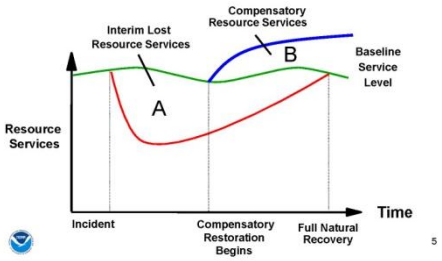
___ Enhance fish habitat and or fish species (e.g., dam removal, fish passage, stocking, spawning habitat, stream improvements).
___ Enhance avian resources (e.g., nesting enhancement, species protection, habitat enhancement or protection).
___ Enhance, restore, and protect wetland habitat.
___ Enhance reptiles and amphibians.
___ Enhance benthos and benthic habitat (e.g., freshwater mussels).
___ Provide invasive species control.
___ Enhance or protect rare, threatened and endangered species or species of special concern.
___ Enhance or restore terrestrial, aquatic, and/or semi-aquatic mammals.
___ Provide new or enhance existing recreational fishing opportunities.

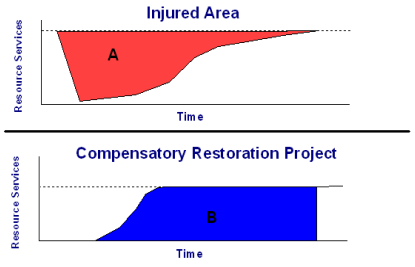
- St. Regis Mohawk Tribe: Community Advisory Committee, Oral History Project, surveys, radio announcements, Cultural Impacts DVD



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

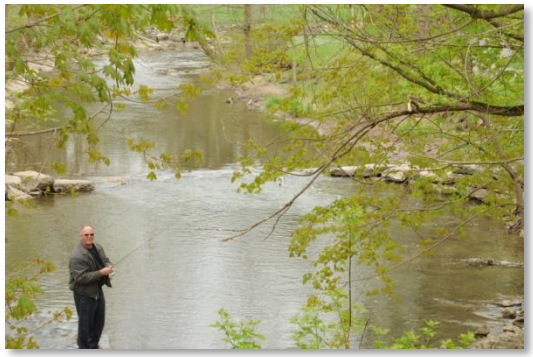
Habitat restoration and stocking of lake sturgeon, Atlantic salmon, northern pike

Native warm season grassland restoration

Riparian buffers

Human Use Recreational Losses

- 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

	Boat	Canoe	Shore	Parking	Upgrade	New
Mid-Raquette River Boat Launch		✓	✓	✓	✓	✓	
Lower Grasse River Boat Launch		✓	✓	✓	✓		✓
Lower Raquette River Canoe Launch			✓	✓	✓		✓
Upper Grasse River Boat Launch		✓	✓	✓	✓	✓	
Middle Grasse River Boat Launch		✓	✓	✓	✓		✓

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*

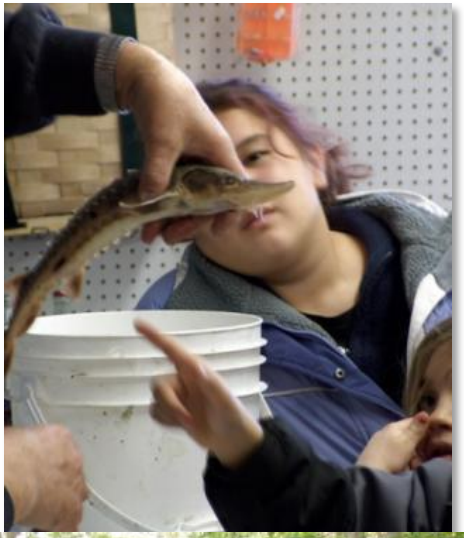
Ultimate Goal: *Restore ecosystems to full function (ecosystems include the people)*

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

Summary

- 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.srmtenv.org/index.php?spec=nrda_main
  - http://www.fws.gov/northeast/nyfo/ec/nrda.htm
  - http://www.darrp.noaa.gov/northeast/lawrence/index.html
  - http://www.dec.ny.gov