

US EPA ARCHIVE DOCUMENT



**Isle Royale National Park
Protection & Response
Strategies:
Overcoming Contingency Planning
Challenges via the Regional Response Team**

**Michelle Jaster, U.S. EPA Region V
Freshwater Spills Symposium
April 6-8, 2004**



Isle Royale National Park

- Isolated within Lake Superior (world's largest freshwater lake)
- 850 square miles
- 99% Wilderness
- Series of islands (400+) and submerged lands
- Park property extends 4.5 miles into Lake Superior waters



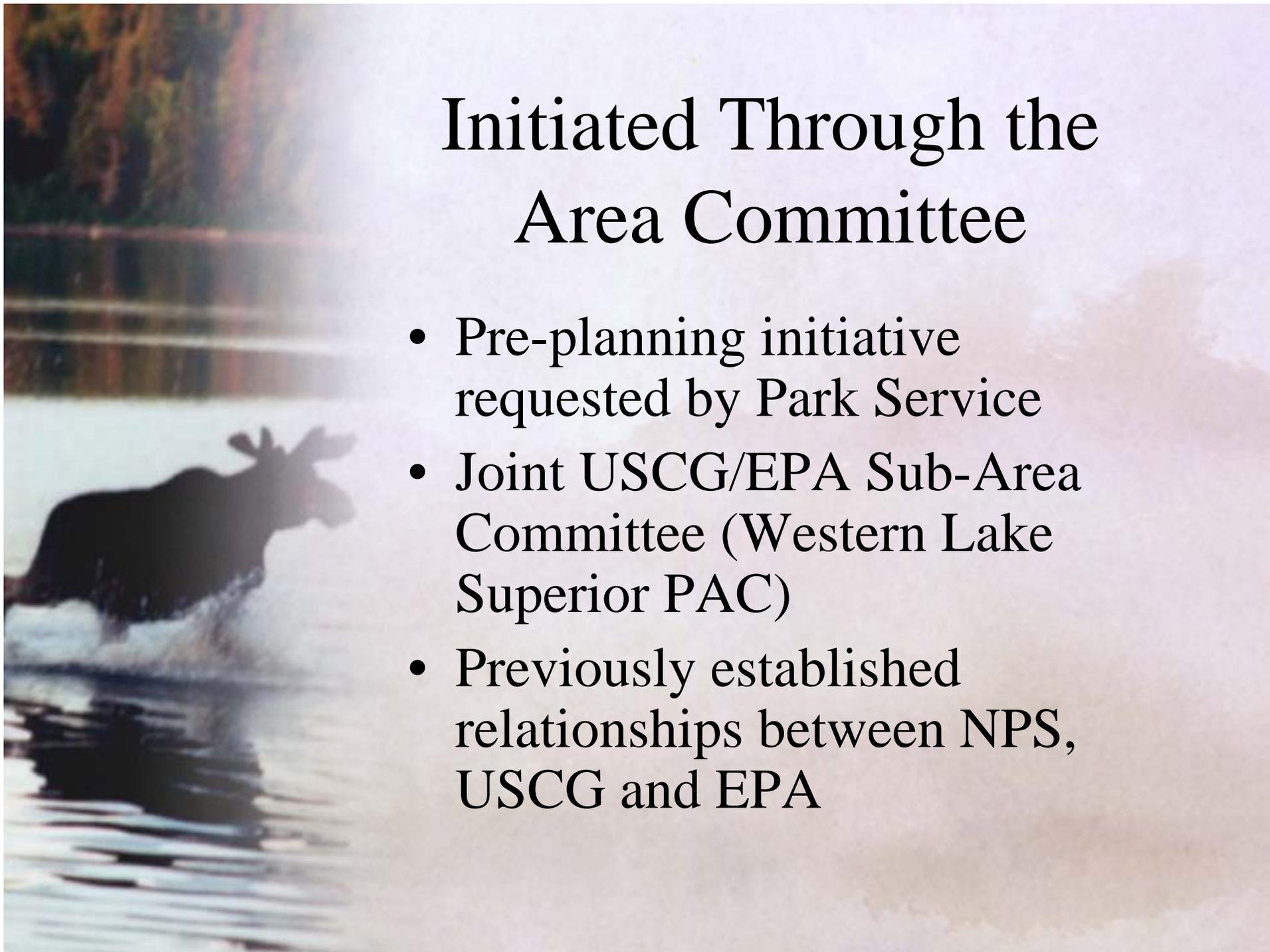
Isle Royale National Park

- Limited human influences
- < 20,000 visitors annually
- Open only 6.5 months per year
- Full transportation services only 3 months per year
- Limited development – no roads
- Accessible by boat or float plane only



Initiated Through the Area Committee

- Pre-planning initiative requested by Park Service
- Joint USCG/EPA Sub-Area Committee (Western Lake Superior PAC)
- Previously established relationships between NPS, USCG and EPA



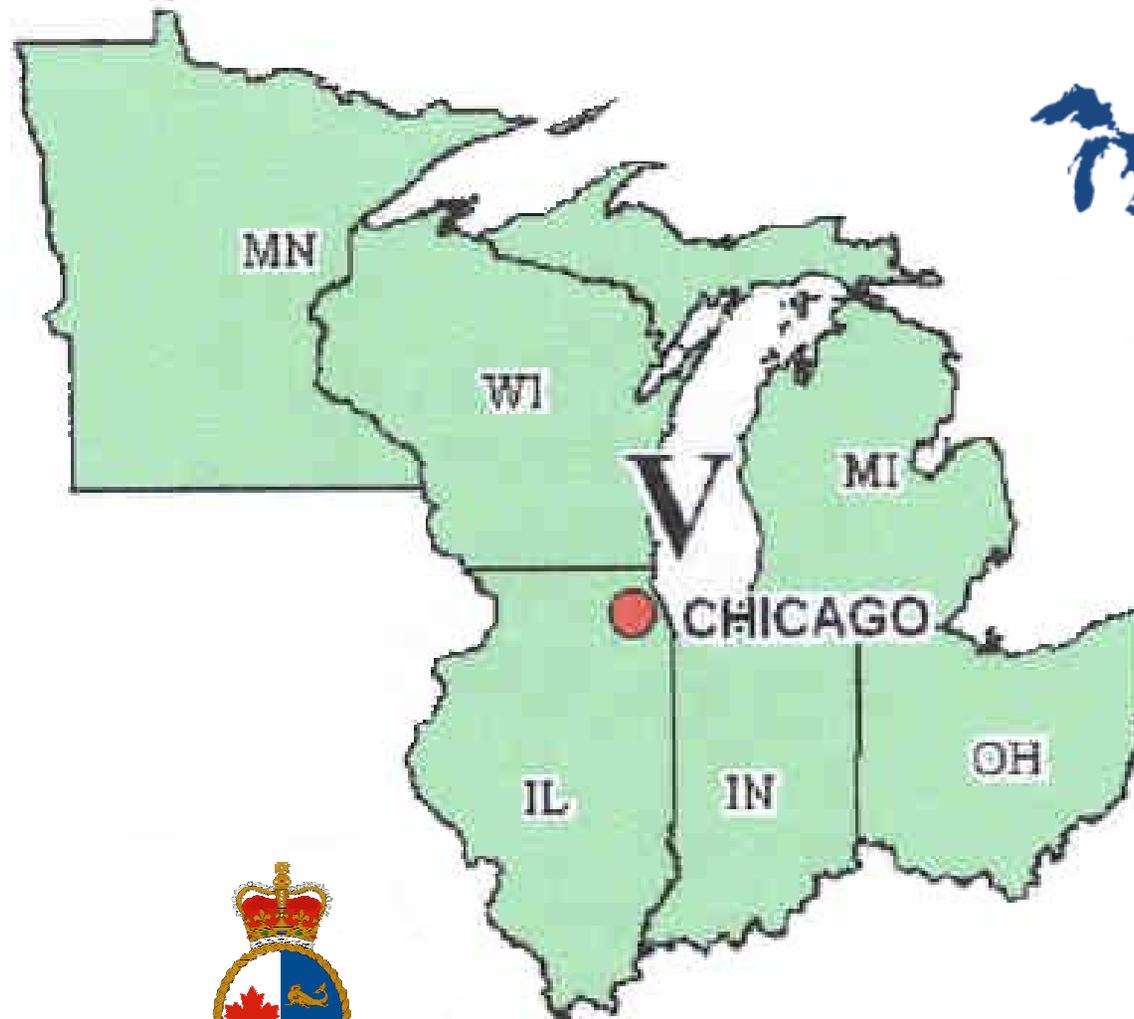
Driven Through RRT

- Requested by National Park Service
- Recognized as ecological “jewel”
- Extremely focused/site-specific intensive planning efforts
- Sub-group of RRT members volunteered
- On-going learning process for all involved





RRT Sub-group



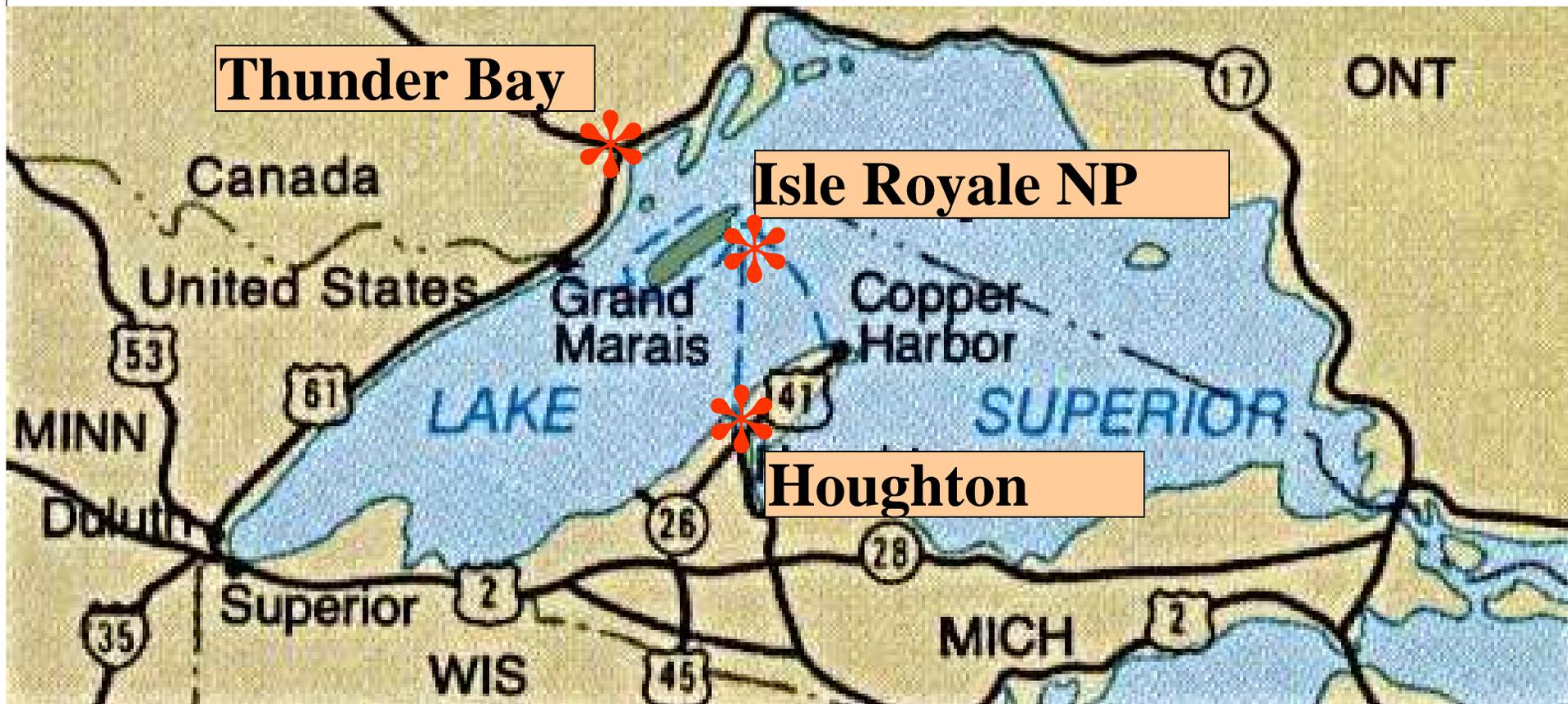
Why Isle Royale?

- Extremely sensitive natural resource
- International boundaries
- Limited local response resources
- Park is only staffed part-time
- Historical groundings/wrecks





Why Isle Royale?



Isle Royale Sensitivity

- International Biosphere
- Brook Trout (highly sensitive coastal run & lake trout populations)
- Nesting Loons
- Moose, otter, mink, gray wolf (longest running predator-prey study)
- Multiple State endangered plant species



Isle Royale Sensitivity

- Arctic Plant Species – narrow strip in splash zone
- Mussel population – one of the largest native remaining refuges in the Great Lakes
- Eagle and Grey Wolf – Federal listed species
- Historic and/or cultural – fishing camps, docks, marinas, beaches, light houses



Isle Royale Sensitivity



Threats to Isle Royale

- International shipping lane within 1 mile of Isle Royale
- Approximately 600 ships per year – 1200 trips past
- 3% liquid cargo
- Vessel fuel load (~200,000 gal)
- Heaviest traffic during late fall/early winter
- Oil storage on Isle Royale itself



The Planning Begins....

- RRT Members are approached for volunteers
- Discussions begin with regularly scheduled conference calls
- The Park Service invites the RRT Sub-group to Isle Royale



June 2003 Site Visit

Participants from multiple RRT
Members/Response Groups:

- NPS, USEPA, USCG MSO
- NOAA, USCG AST
- MDEQ, Houghton Co. EMA
- MPC, GLC

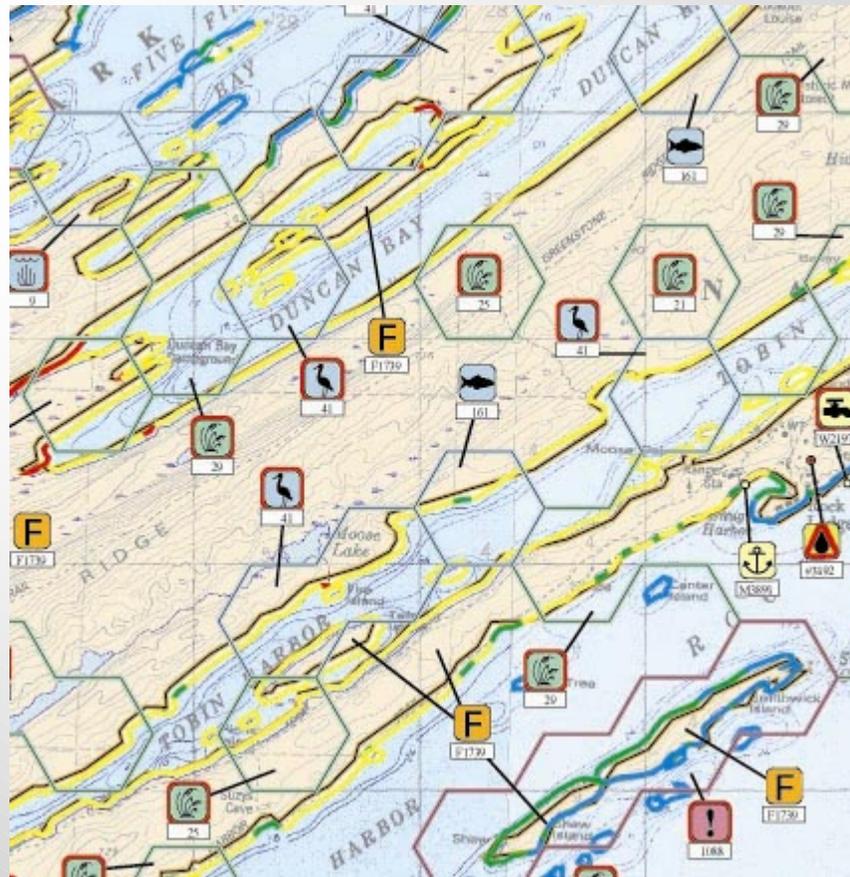


June 2003 Site Visit

- Overview of entire Park via sea-plane
- Site-specific visits to 10 areas of greatest concern via boat
- Develop potential protection strategies for each of the areas
- Identify limitations/resource needs

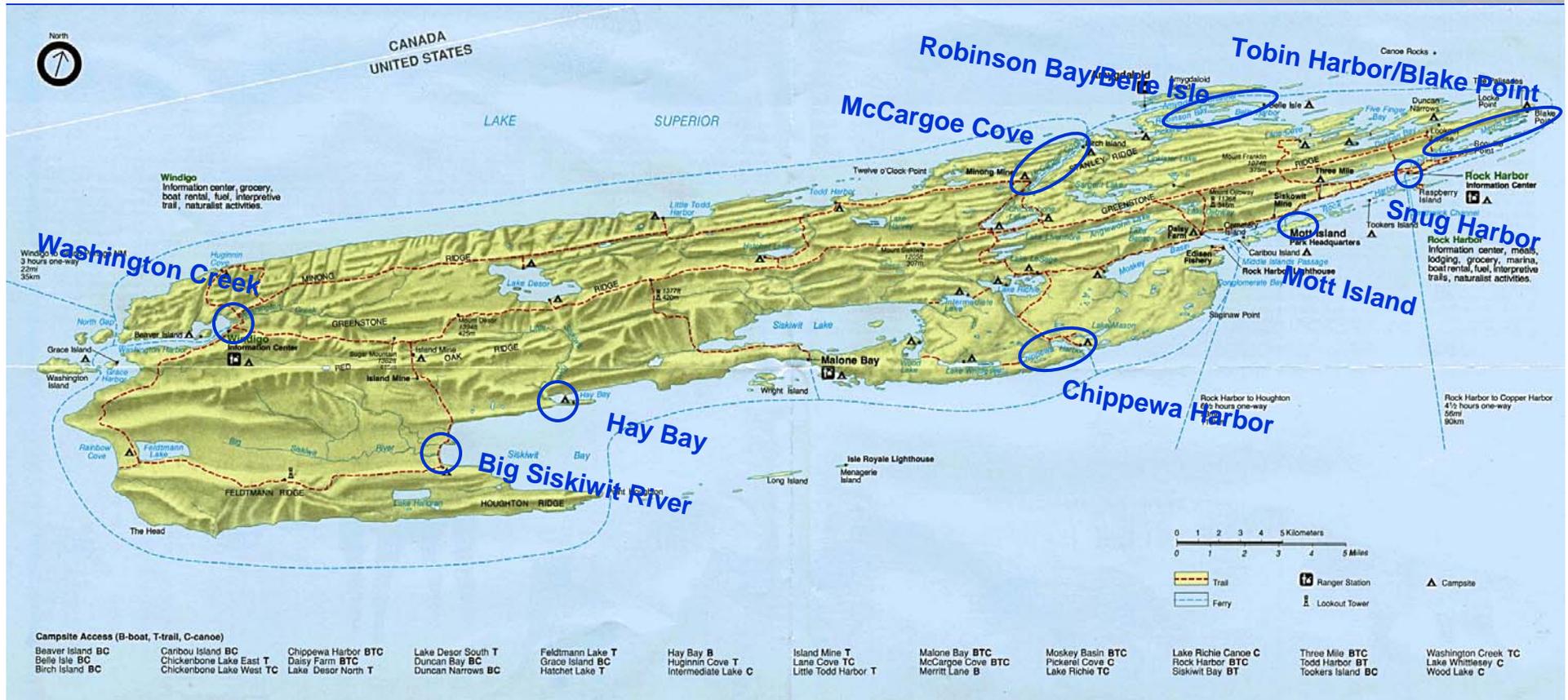


Use of Inland Sensitivity Atlases



Inland Sensitivity Atlas, Upper Peninsula of Michigan
Snug Harbor/Tobin Harbor area

Specific Sites Visited – June 2003



(Passage Island also)

June 2003 Site Visit



Develop Strategies/Maps

- Develop strategies for each sensitive area identified
- Develop detailed maps with sensitive areas and strategies
- Link maps to protocols for response





Exclusion Booming of McCargoe Cove

Birch Island Dock

Natural Collection Point

Spill Response vs. Natural Resources

- Identified response strategies, capabilities, limitations
- BUT.....
- What about all these sensitive natural resources??
- Recognized need to bring ecological experts into the loop



Net Environmental Benefit Analysis

- Risk Assessment Tool
- Delineates Advantages and Disadvantages of specific response strategies
- Evaluates response strategies against site-specific flora, fauna, and habitats



NEBA

- Facilitated Process
- Potential Impacts based on Spill Scenario
- Consequences of Spill
- Potential Response Strategies
- Site-Specific Process = Realism



NEBA Workshop

- January 6-8, 2004 in Duluth
- Joint “Experts”: Responders and Resource Managers
- Spill Scenario:
 - Grounded freighter
 - 30,000 gallons fuel released
 - Impacts NE tip of Isle Royale
 - Late April/Early May



NEBA Workshop

- Impacted high priority species:
 - Grey Wolf
 - Common Loon
 - Bald Eagle
 - Coaster Brook Trout
 - Arctic Shoreline Plants
 - Boreal Chorus Frog
 - Freshwater Mussel Beds



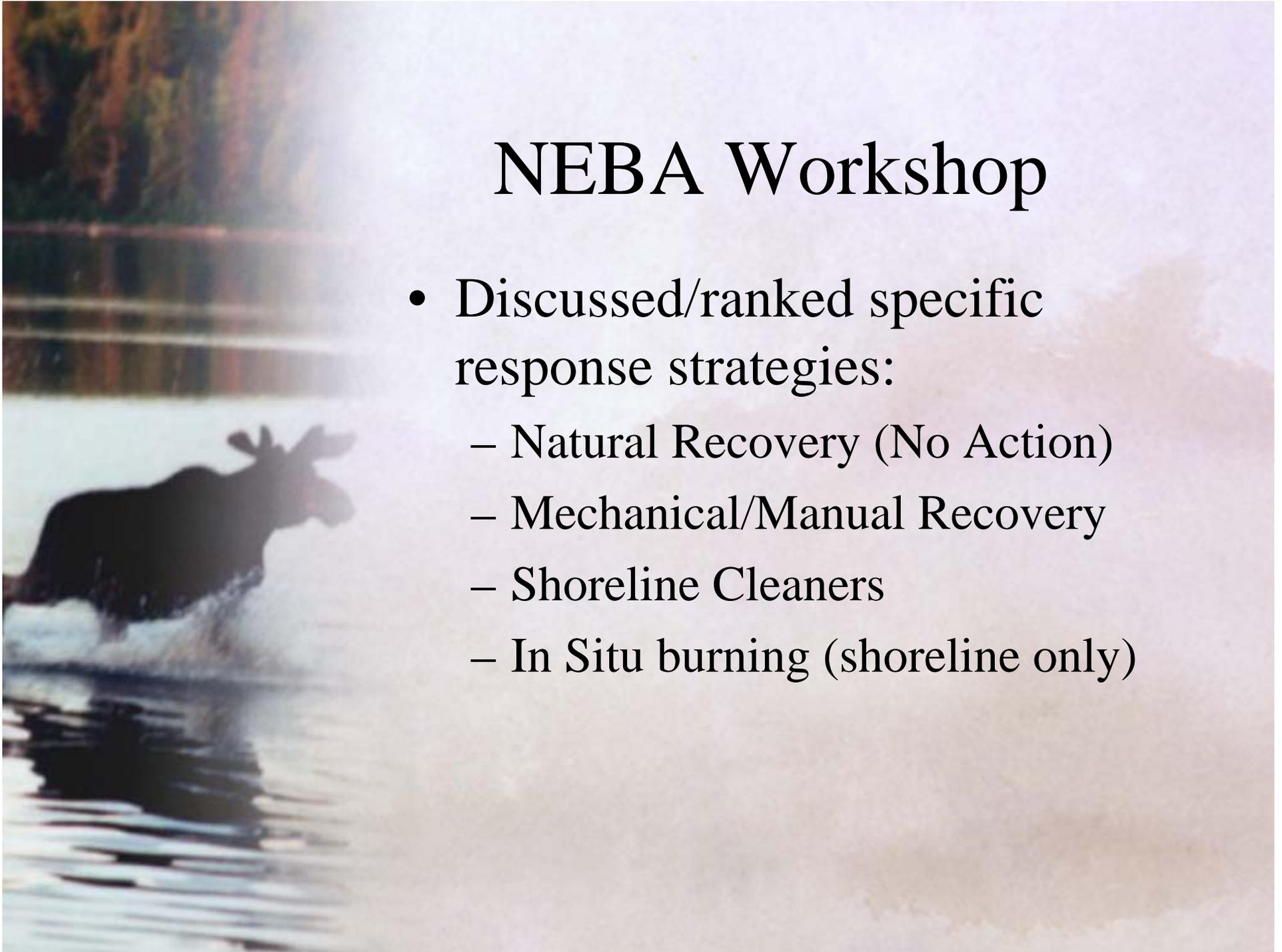
NEBA Workshop

- Impacted Habitat Zones
 - Terrestrial
 - Coastal Wetlands
 - Shoreline
 - Near Shore
 - Reefs
 - Open Water



NEBA Workshop

- Discussed/ranked specific response strategies:
 - Natural Recovery (No Action)
 - Mechanical/Manual Recovery
 - Shoreline Cleaners
 - In Situ burning (shoreline only)



Isle Royale Risk Ranking Matrix:

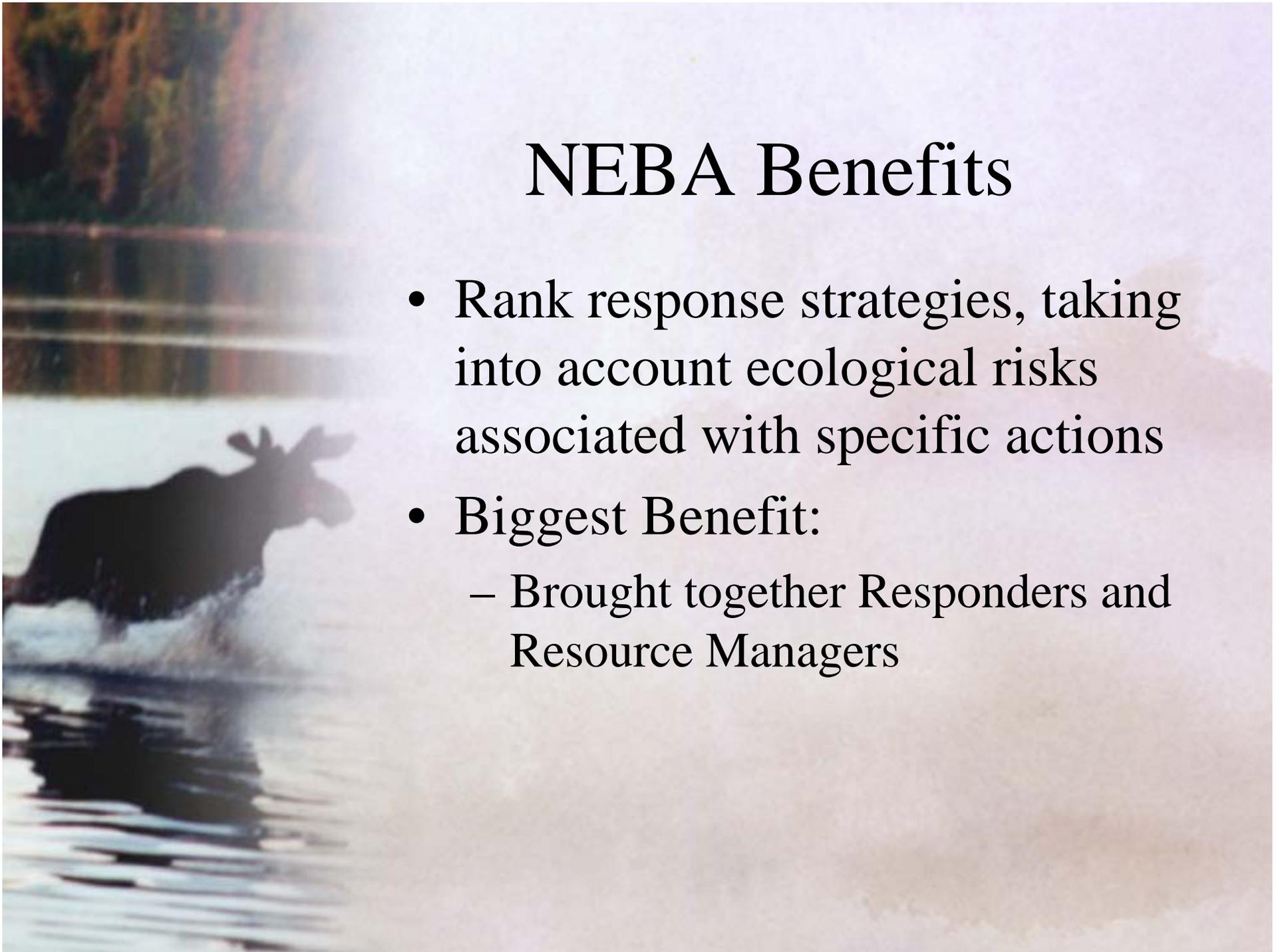
Duluth, Minnesota
January 6-8, 2004

		Potential Length of Recovery			
		Probable Population Collapse	Long-term (4-7 years)	Intermediate-term (2-3 years)	Short-term (1 year)
Degree of Resource Impact	Catastrophic	1A	2A	3A	4A
	Critical	1B	2B	3B	4B
	Marginal		2C	3C	4C
	Negligible		2D	3D	4D

Legend: Cells that are *red* represent a **high** level of concern, cells that are shaded *yellow* represent a **moderate** level of concern, and cells shaded *green* represent a **limited** level of concern.

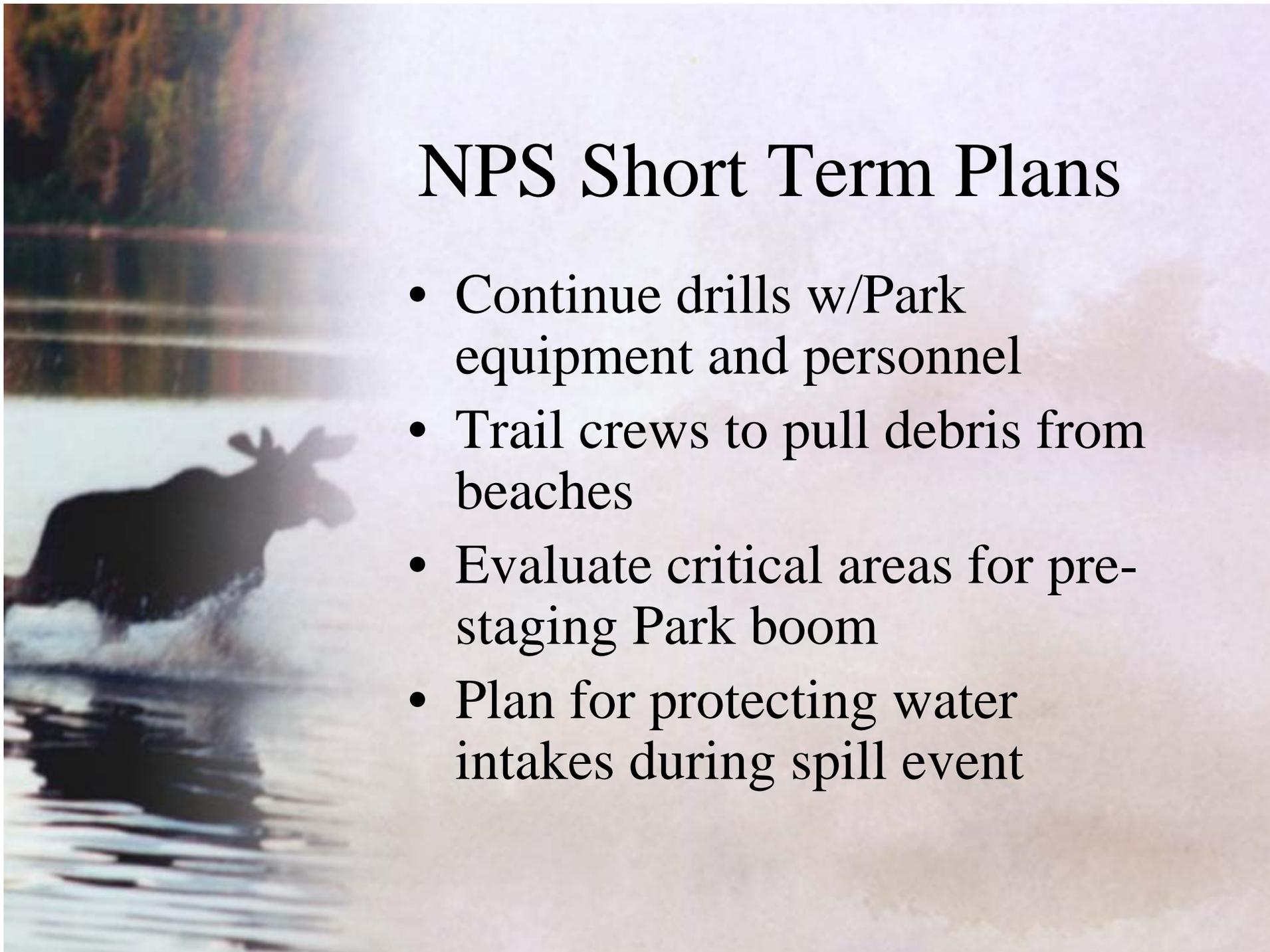
NEBA Benefits

- Rank response strategies, taking into account ecological risks associated with specific actions
- Biggest Benefit:
 - Brought together Responders and Resource Managers



NPS Short Term Plans

- Continue drills w/Park equipment and personnel
- Trail crews to pull debris from beaches
- Evaluate critical areas for pre-staging Park boom
- Plan for protecting water intakes during spill event



Longer Term Overall Plans

- Draft and Finalize NEBA Workshop findings
- Refinement of Response Strategies
 - Mechanical Recovery
 - In Situ Burning
 - Logistical Issues
- Develop Overall Isle Royale/NPS Protection Plan
- Amend Western Lake Superior ACP
- Evaluate transportation options



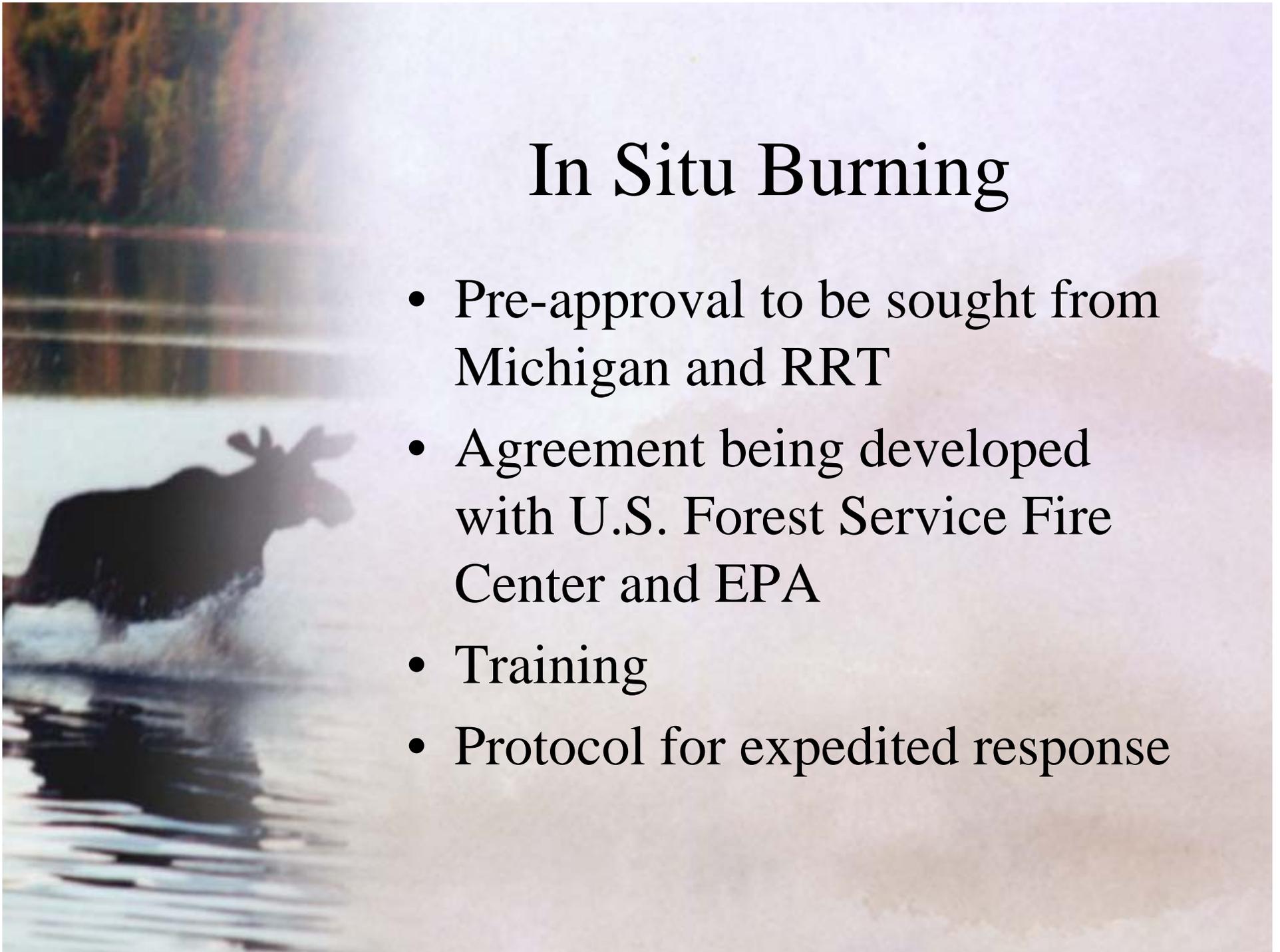
Mechanical Recovery

- Available resources
 - Park, USCG, CCG, Contractor
 - Compatibility of resources
- Additional equipment needs
 - Boom, anchors, skimmers, boats, storage capacity
- Pre-staging equipment



In Situ Burning

- Pre-approval to be sought from Michigan and RRT
- Agreement being developed with U.S. Forest Service Fire Center and EPA
- Training
- Protocol for expedited response

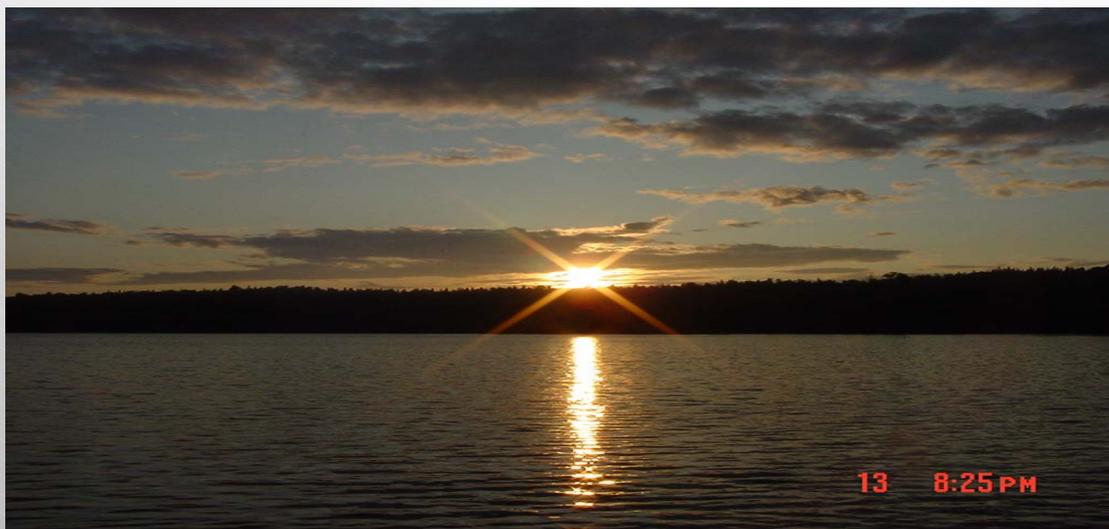
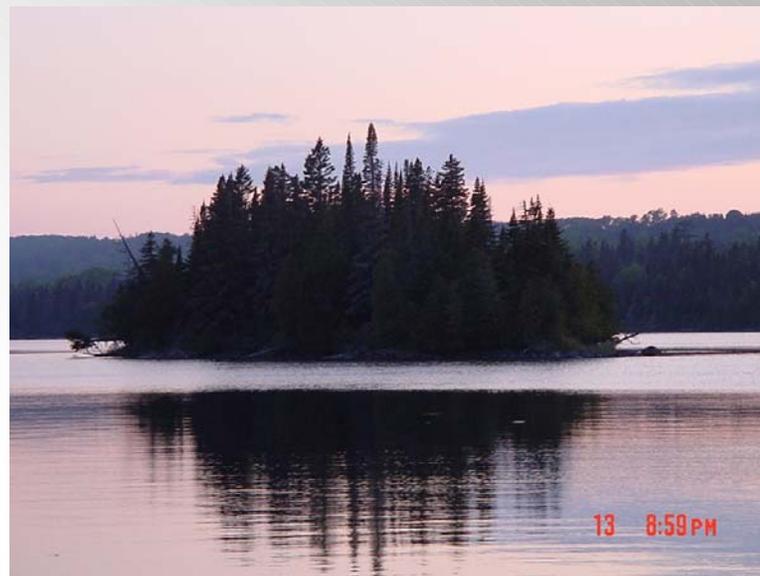


Logistical Issues

- Communications
- Transportation
- Number of Responders
- Education of Responders
- Limited Staging/Developed Areas

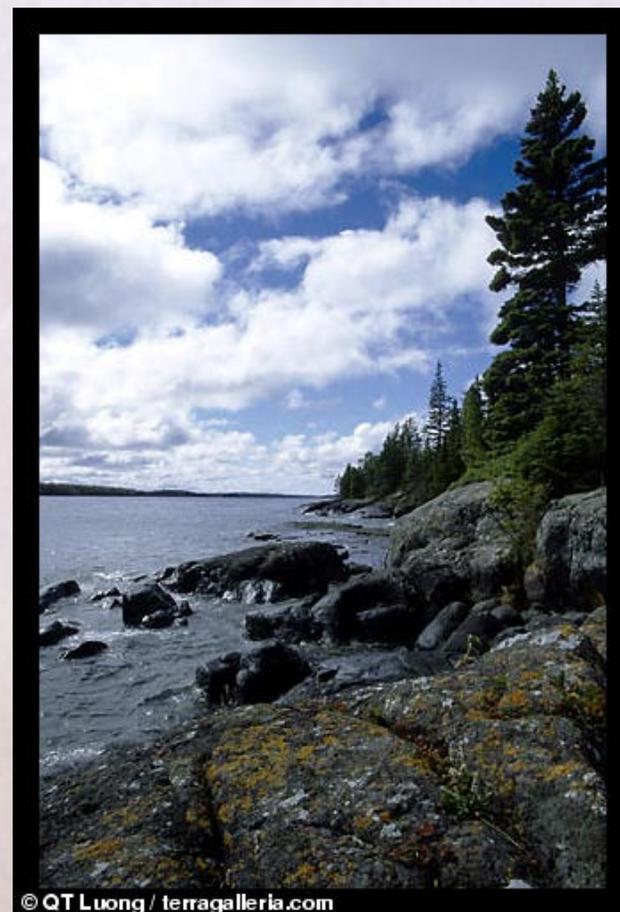


More to Come.....



Portable Process

- Apostle Islands
- Indiana Dunes
- Pictured Rocks
- Sleeping Bear Dunes



Summary

- RRT provided framework for implementing cooperative, collaborative pre-planning effort
- Biggest benefits:
 - Increased communication among RRT members/stakeholders
 - Strengthened existing relationships
 - Generated interest in Isle Royale and Lake Superior
 - Learning experience for all involved



Any Questions?



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