

**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



A photograph of a moose swimming in a lake. The moose is dark brown and is captured in motion, splashing water as it moves across the surface. The background shows a calm lake reflecting the sky and some trees on the far shore.

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

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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

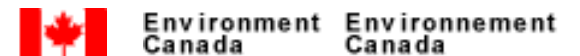
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Driven Through RRT

- 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



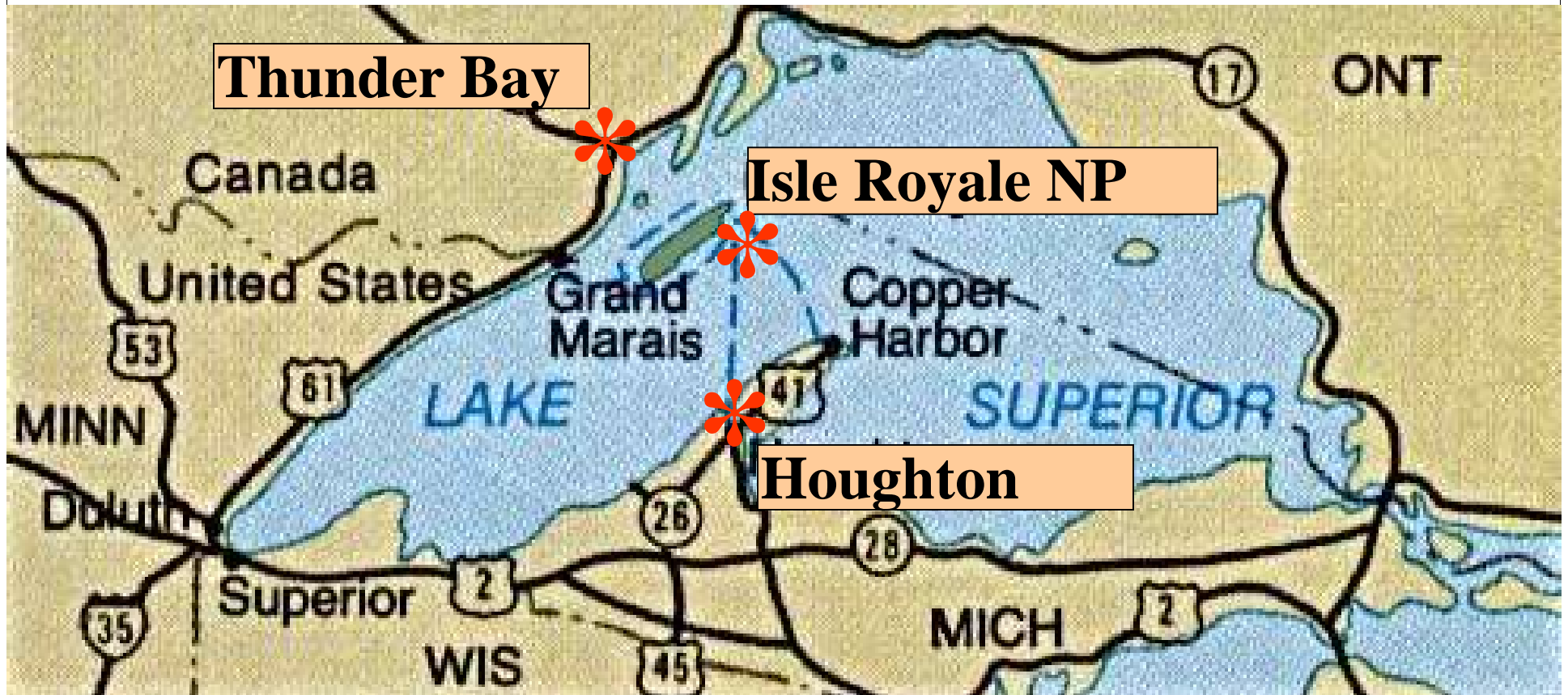
Why Isle Royale?

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





Why Isle Royale?



A photograph of a moose swimming in a lake. The moose is dark in color and is captured in motion, with water splashing around its body. The background shows a shoreline with trees and a clear sky.

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



A photograph of a moose swimming in a lake, splashing water. The moose is dark brown and is moving from left to right across the frame. The water is light blue and white with splashes. The background is a soft, out-of-focus landscape with trees and a sky.


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

A photograph of a moose swimming in a lake. The moose is in the foreground, moving from left to right, with its head and antlers above water. The water is splashing around it. In the background, there is a forest of trees and a bridge or structure in the distance.

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

A photograph of a moose swimming in a lake. The moose is in the foreground, moving from left to right, with its head and antlers above water. The water is dark and reflects the moose. The background is a soft-focus landscape with trees and a bright sky.

June 2003 Site Visit

Participants from multiple RRT
Members/Response Groups:

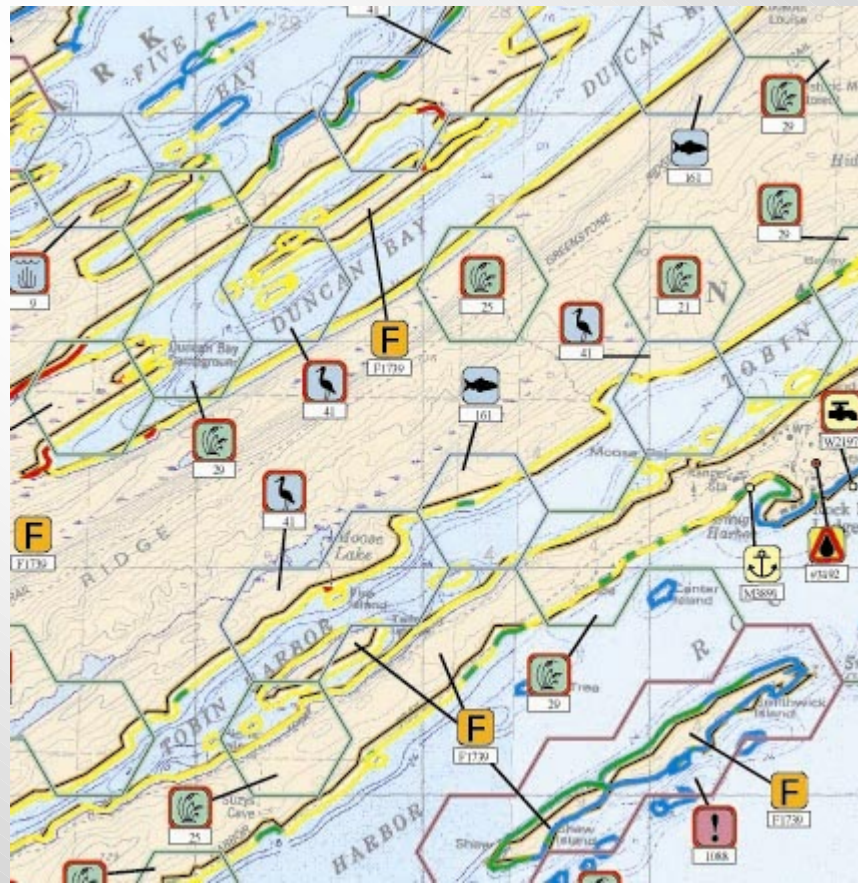
- NPS, USEPA, USCG MSO
- NOAA, USCG AST
- MDEQ, Houghton Co. EMA
- MPC, GLC

A photograph of a moose swimming in a lake. The moose is dark in color and is captured in motion, with water splashing around its body. The background shows a blurred shoreline with trees and a bright sky. The image is semi-transparent, allowing text to be overlaid on it.

June 2003 Site Visit

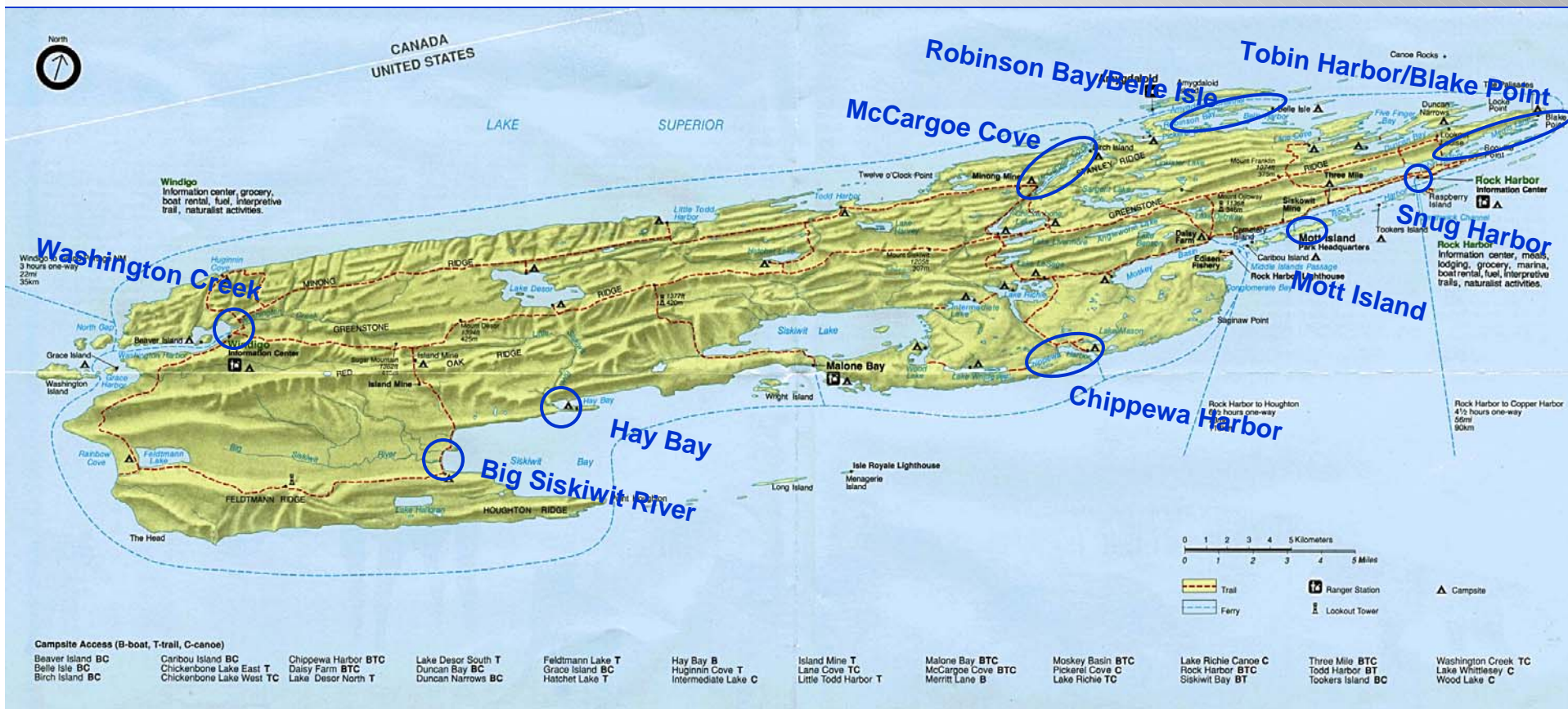
- Overview of entire Park via sea-plane
- Site-specific visits to 10 areas of greatest concern via boat
- Develop potential protection strategies for each of the areas
- Identify limitations/resource needs

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



A photograph of a moose swimming in a lake. The moose is in the foreground, moving from left to right, with its head and antlers visible above the water. The water is splashing around it. In the background, there are trees and a shoreline. The overall scene is a natural, outdoor setting.

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

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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

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NEBA Workshop

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

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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.*

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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

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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

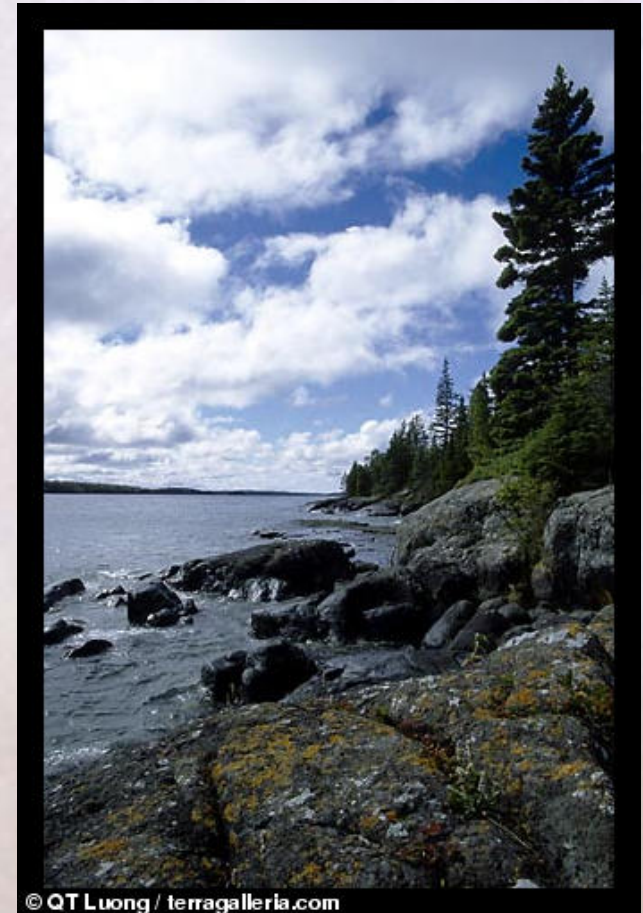
- Communications
- Transportation
- Number of Responders
- Education of Responders
- Limited Staging/Developed Areas

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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