The Taunton Bay Management "Experiment"

Protecting Eelgrass

Amidst Conflicting Uses

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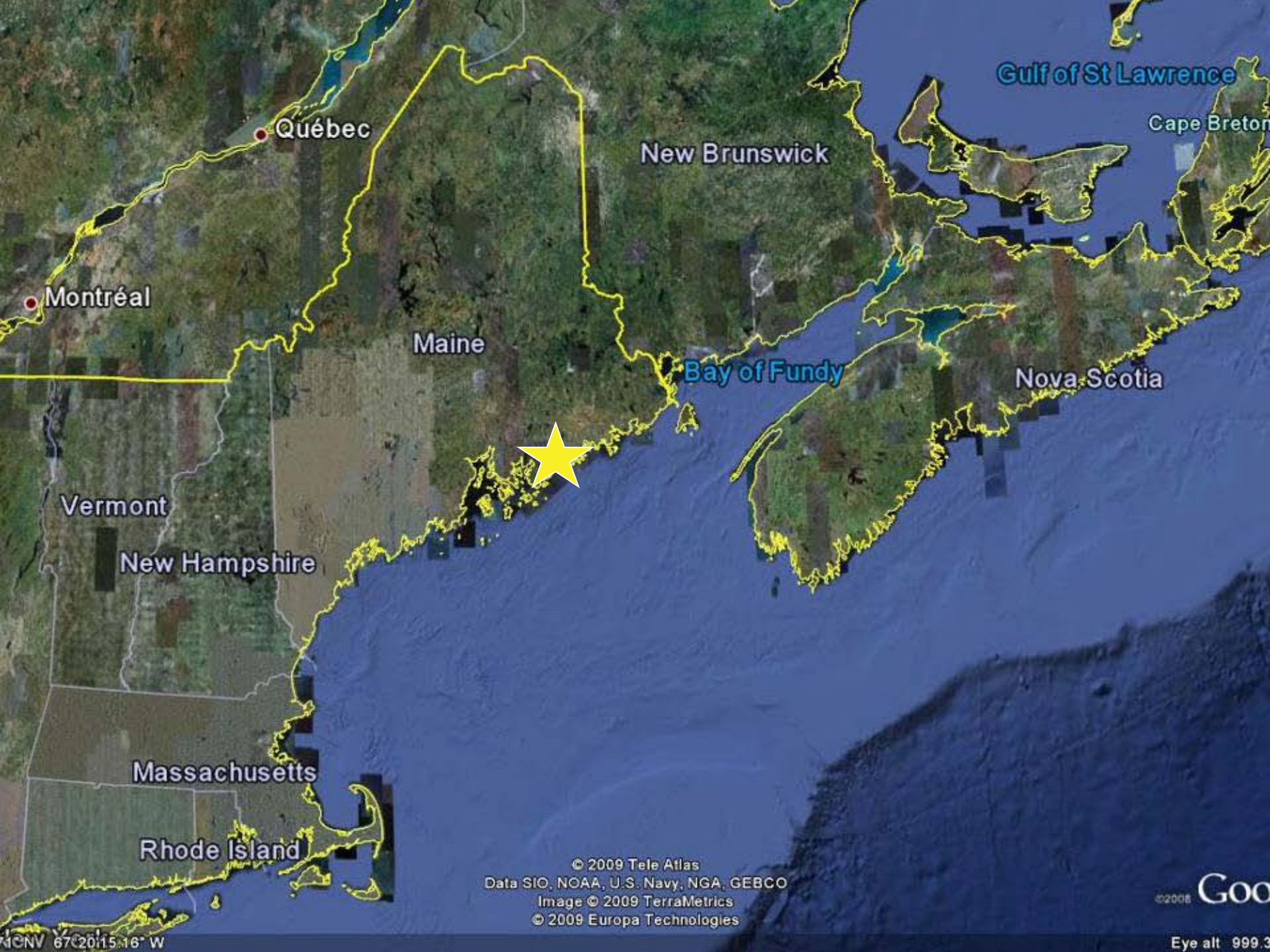
http://www.maine.gov/dmr/council/tauntonbay/


Québec
Montréal
Maine
New Brunswick
Gulf of St Lawrence
Cape Breton
Bay of Fundy
Nova Scotia
Vermont
New Hampshire
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Eye alt 999.3


Taunton Bay
Hog Bay
Egypt Bay

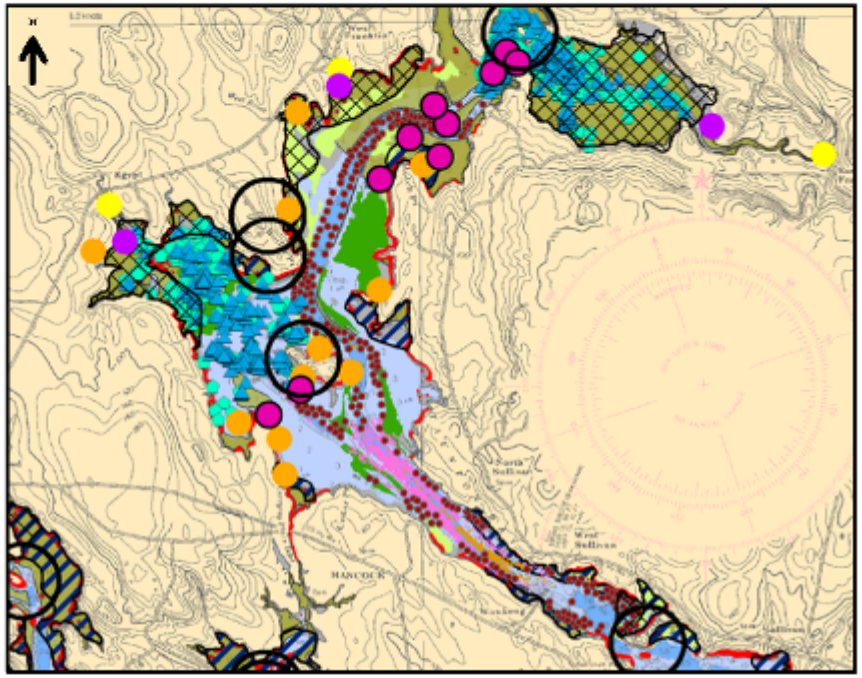
A Little About the Resource

- Physical
  - 3,700 acres
    - 1,824,000 acres coastal waters in Maine (0.0018th of coast)
  - 29 mi perimeter
  - 39,000 acre watershed
  - 42,500-15,000 acre-feet volume
  - Extensive flats and shallows
- Living Resources
  - Diversity of Plants and Animals
- Human Uses
  - Recreation
  - Commercial Fisheries
  - Aquaculture

THE TAUNTON BAY STUDY

A pilot project in collaborative bay management

Marine Species and Wildlife

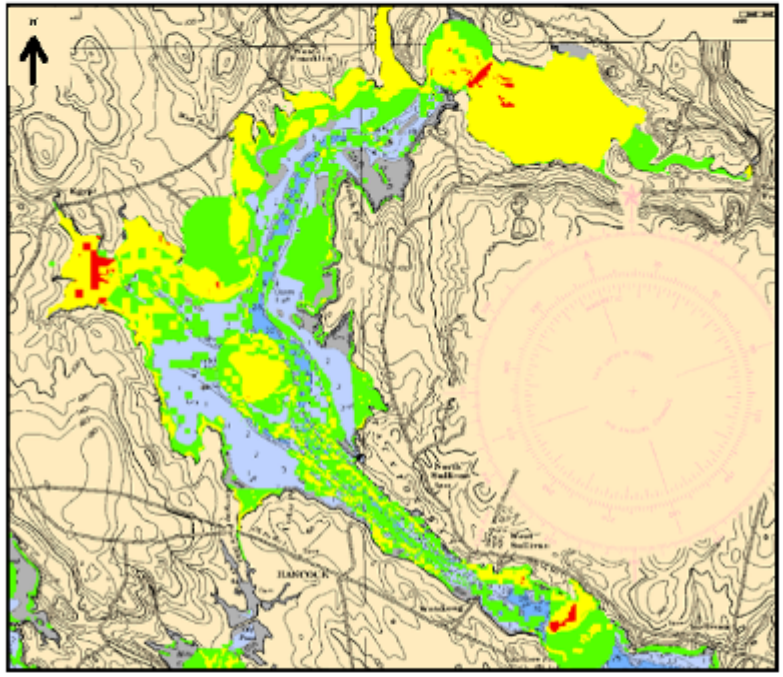


Historical assistance provided by the Coastal Zone Management Act of 1972, as amended, Administered by the Office of Ocean and Coastal Resource Management, National Ocean Service (National Oceanic Administration).

Legend

- Anadromous Fish Run
- Elvers
- Eagle Nests
- Seal Haulouts
- Breeding Horseshoe Crab Sightings
- hsc_2003_DMR
- hsc_2004_DMR
- Lobster/Crab Buoy
- shellfish
- worms
- Kelp (dense) on pebbly gravel
- Kelp (moderate to sparse)
- Eelgrass (2005)
- Algal flats
- Rockweed
- Mudflats

Biodiversity Hotspots Analysis



Legend

Value

- Moderate
- High
- Very High

The ratings are based on the number of overlapping layers.

Very High = 4-5
High = 2-3
Moderate = 1

Sources:
NOAA: Chart 13318_1
Maine Office of GIS
Maine DMR
College of the Atlantic

Analysis By: Marianna Bradley
College of the Atlantic, GIS Lab

Friends of Taunton Bay
Contact: steveperrin@verizon.net

Map Prepared By
College of the Atlantic
April 2008

Background

- Bottom dragging Moratorium – 2000
- Eelgrass dieback – late 2001ish
- Mussel resource locked up
- Comprehensive plan to replace moratorium and allow ecologically sustainable harvesting

Comprehensive Resource Management ~~Plan~~ Experiment

- Stars aligned
- Not just a fishery plan
- Different from Forest Biodiversity Project or Downeast Fisheries Initiative
  - which had few stakeholders and limited focus
- Measureable Ecological and CommunityTargets
  - Wildlife
  - Habitat
  - Water quality
  - Sustainable harvests

Dual and Equal Goals

- protect and sustain ecological functions and values, and
- manage marine resources for the long-term use and enjoyment of all citizens of Maine.

Cornerstones of Plan

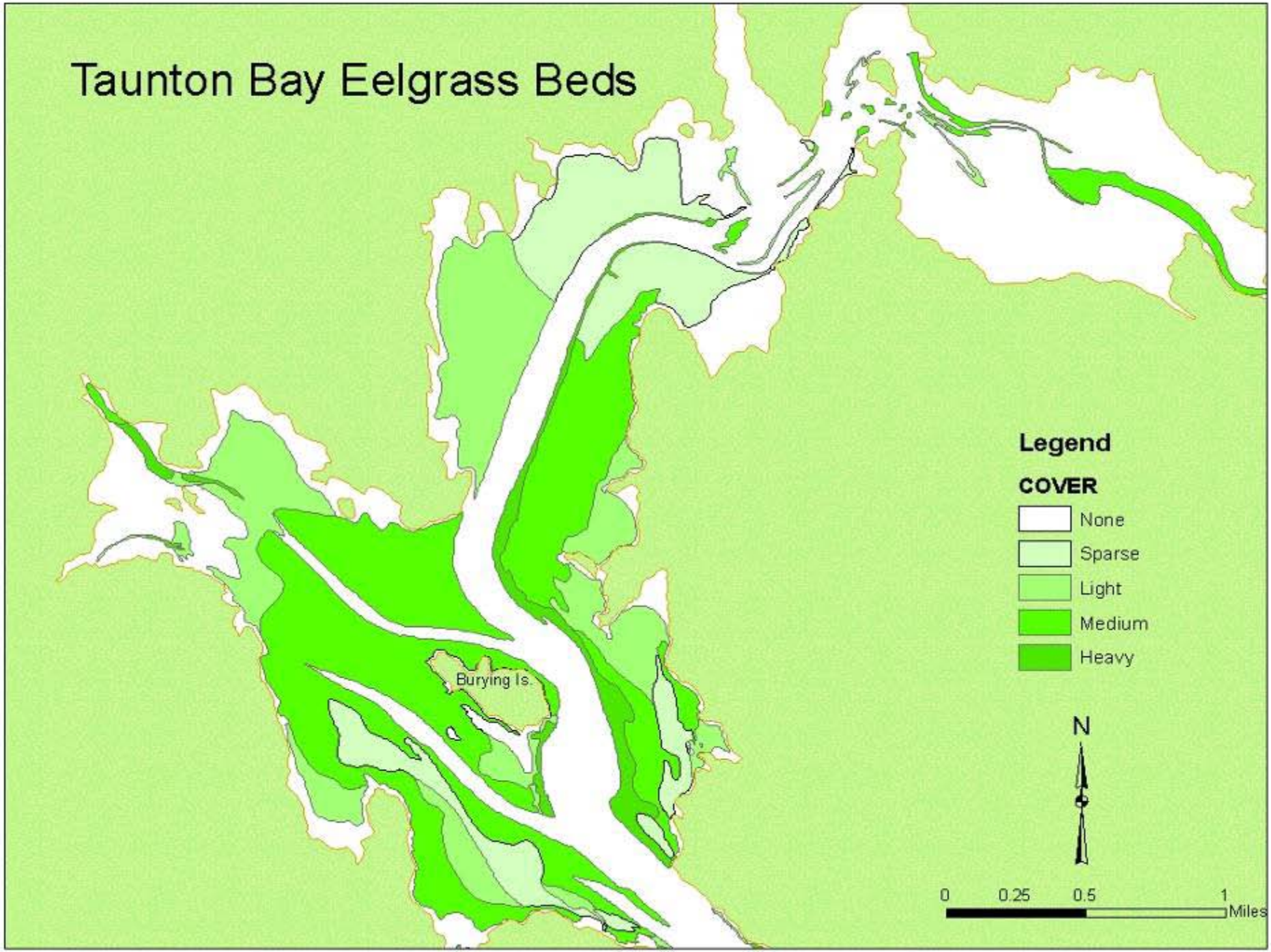
- Science
  - Benchmarks - measureable and achievable
  - Local knowledge
  - Studies
  - Local knowledge
    - Including harvesters
- Stewardship
  - Everyone is responsible
  - Resource assessments
  - Investigations
  - Meetings
- Adaptability
  - Feedback mechanism
  - Legal flexibility
  - Continual review for revision
  - Areas reviewed after ice and harvests

The Conflict

- Value of eelgrass as habitat
- Mussels as valuable commodity
- Bottom dragging preferred method
- Commensal relationship between mussels and eelgrass
- Fishing is exempt from permitting process

Maine Law

A person lawfully engaged in the harvesting of marine organisms or vegetation under the provisions of Title 12, chapter 605 is not required to obtain a permit to engage in those activities ……. the removal of vegetation or displacement of soil associated with or authorized by those lawful activities is not a violation of this article


Taunton Bay Eelgrass Beds
Burying Is.
Legend
COVER
None
Sparse
Light
Medium
Heavy
N
0
0.25
0.5
1
Miles

Dragging Disturbance

- Cutting fronds
- Physical uprooting
- Turbidity
- Prevention of reseeding

Mussel Dragger

Bottom Drag

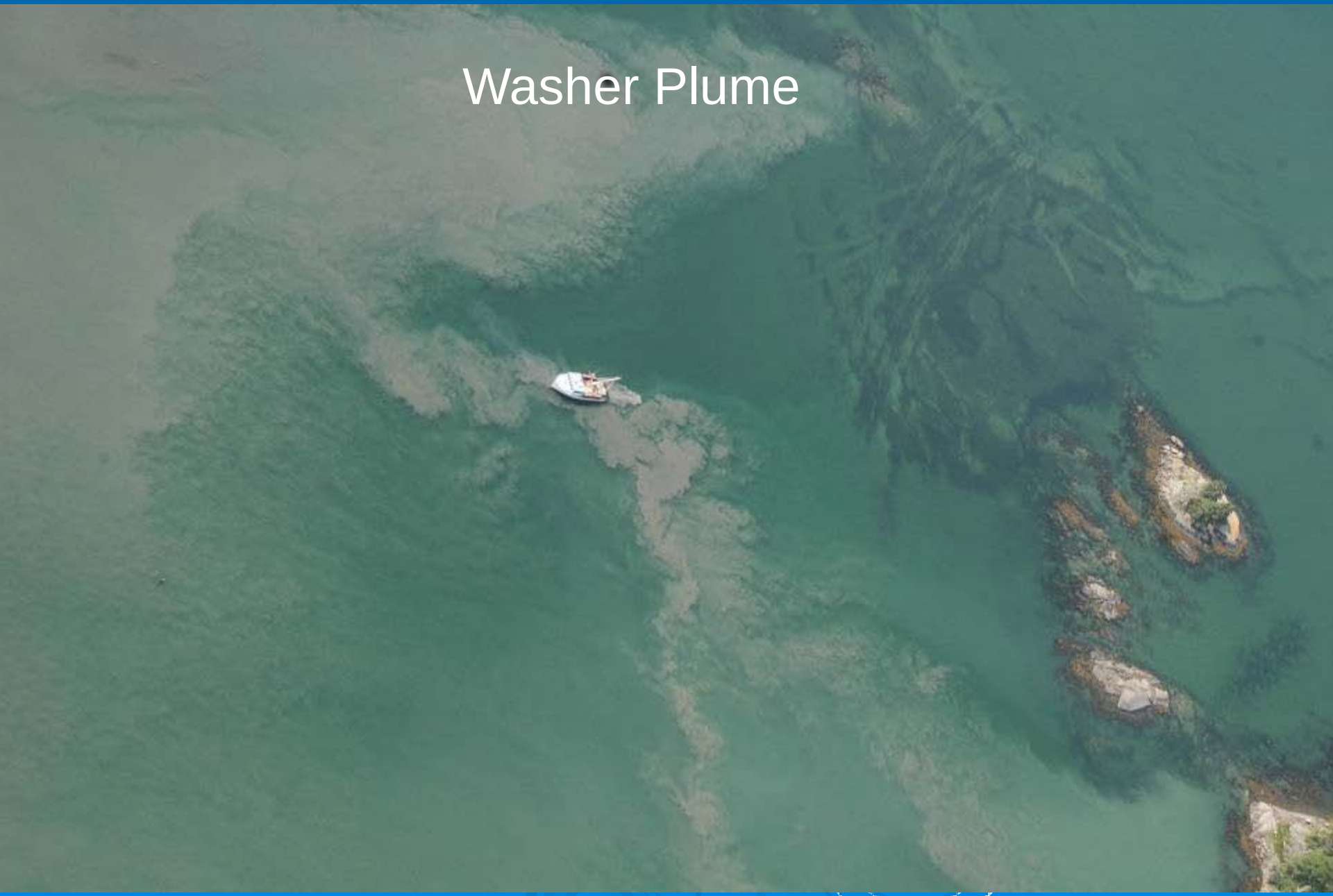
Dragging Scar
Maquoit Bay, ME – Neckles et al.


Five Years Later
Hilary

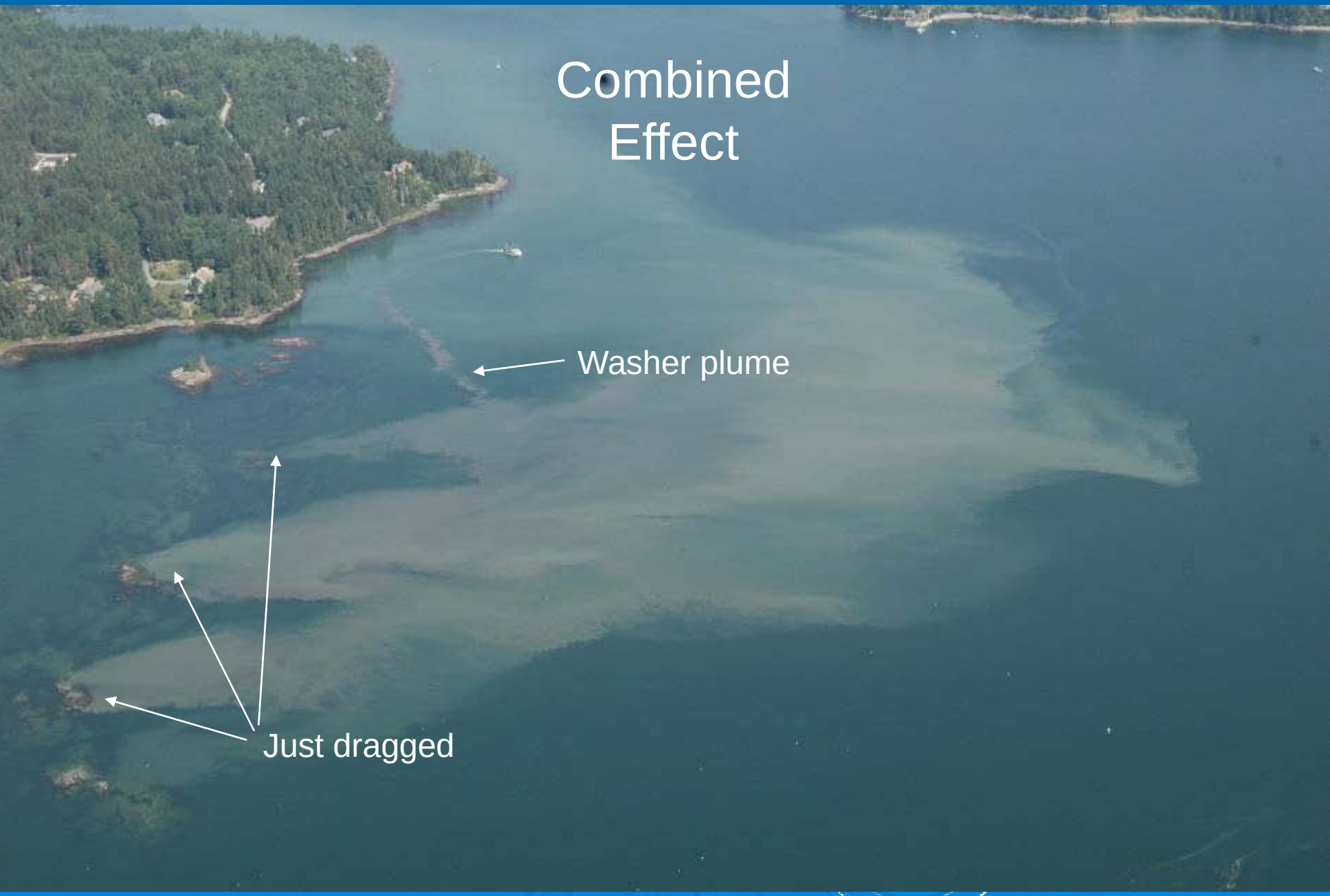

Repeated Dragging
Precludes
Recolonization

Tumbler Washer

Washer Plume



Combined Effect



Dilemma

- What is “sustainable?”
- What is “disturbance?”
- What is “high value?”
- How much is “enough” to protect ecosystem structure, functions and vulnerable populations?

How

- Plan looks at ecosystem level, not plants
- Protects eelgrass function and habitat value
- Protects persistent beds as seed source
- Identifies key ecological elements
- Sets measureable ecosystem targets
- Water quality benchmarks – 2ug/l Chl-a and SD 4 m
- Considers other species and habitats

Subtidal Benthic Fisheries in the Taunton Bay Estuary: Ecological Constraints and Management Options

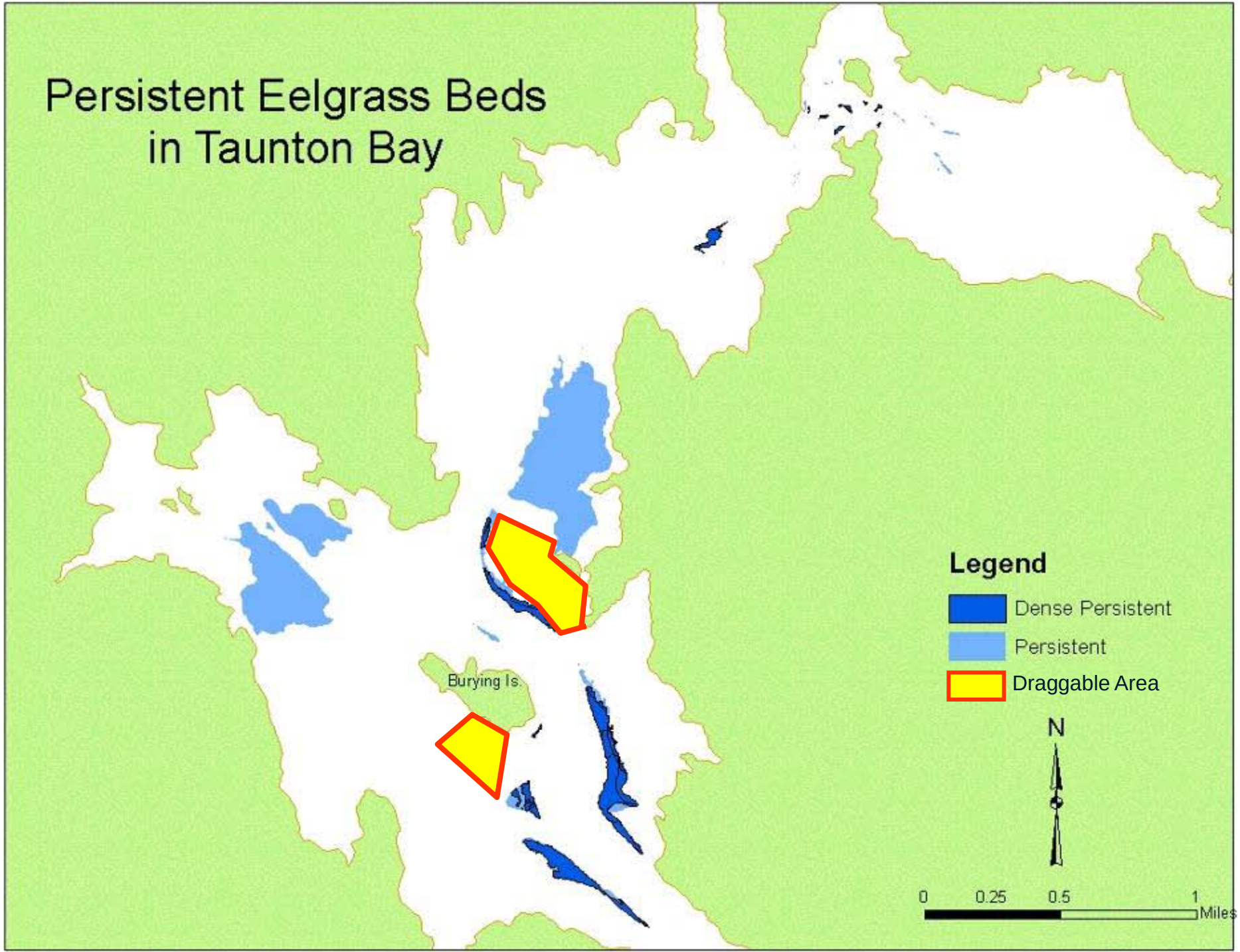
June 2008
by
Slade Moore
Biological Conservation Services, LLC

Recommended Options to Avoid Large-scale Benthic Disturbance

1. No dragging in existing beds
2. 100ft buffer
3. Ebb tide
4. Minimize intensity
5. Avoid persistent beds

Conditions Set on 2008 Harvest

- Based on Assessments
  - TACs – divided by harvesters themselves
  - Areas
  - Season
  - Method
- Reporting required
  - dates, areas, and bycatch
- If conditions or conflicts become unmanageable, we will stop harvest.


Persistent Eelgrass Beds
in Taunton Bay
Burying Is.
Legend
Dense Persistent
Persistent
Draggable Area
N
0
0.25
0.5
1
Miles


BURYING ISLAND
AREA
25,000 Bushels
Please avoid
2 White Buoys


New water line
CCAR AREA
34,000 Bushels

Ensuring Compliance

- Harvester meeting mandatory
  - Educational benefit
- Areas buoyed off prior to
- License endorsement
- Reporting
- Monitoring and surveillance

Taunton Bay Endorsement Application

Name _____

Mailing Address: _____
(Street and Number, PO Box, or RR # and Box)

Mailing Town_____ State_____ Zip_____

Phone Number _____

Date of Birth _____/_____/_____

I request that an endorsement be added to my license to allow me to fish in Taunton Bay for the following resources: (indicate which of the following resources you are requesting).

- ☐ Mussels
- ☐ Urchins
- ☐ Scallop
- ☐ Kelp (to be added to seaweed license

I understand and agree to the following terms:

I will attend the harvester meeting,
I will call 633-9518 to report daily harvests each day I fish Taunton Bay,
I will complete and submit a written monthly harvest report,
I will be available to participate in stock assessments, and
I will limit my total harvest from Taunton Bay to the amount allotted to me.
I also understand that failure to abide by these terms will jeopardize my endorsement.

SIGNATURE: _____DATE_____

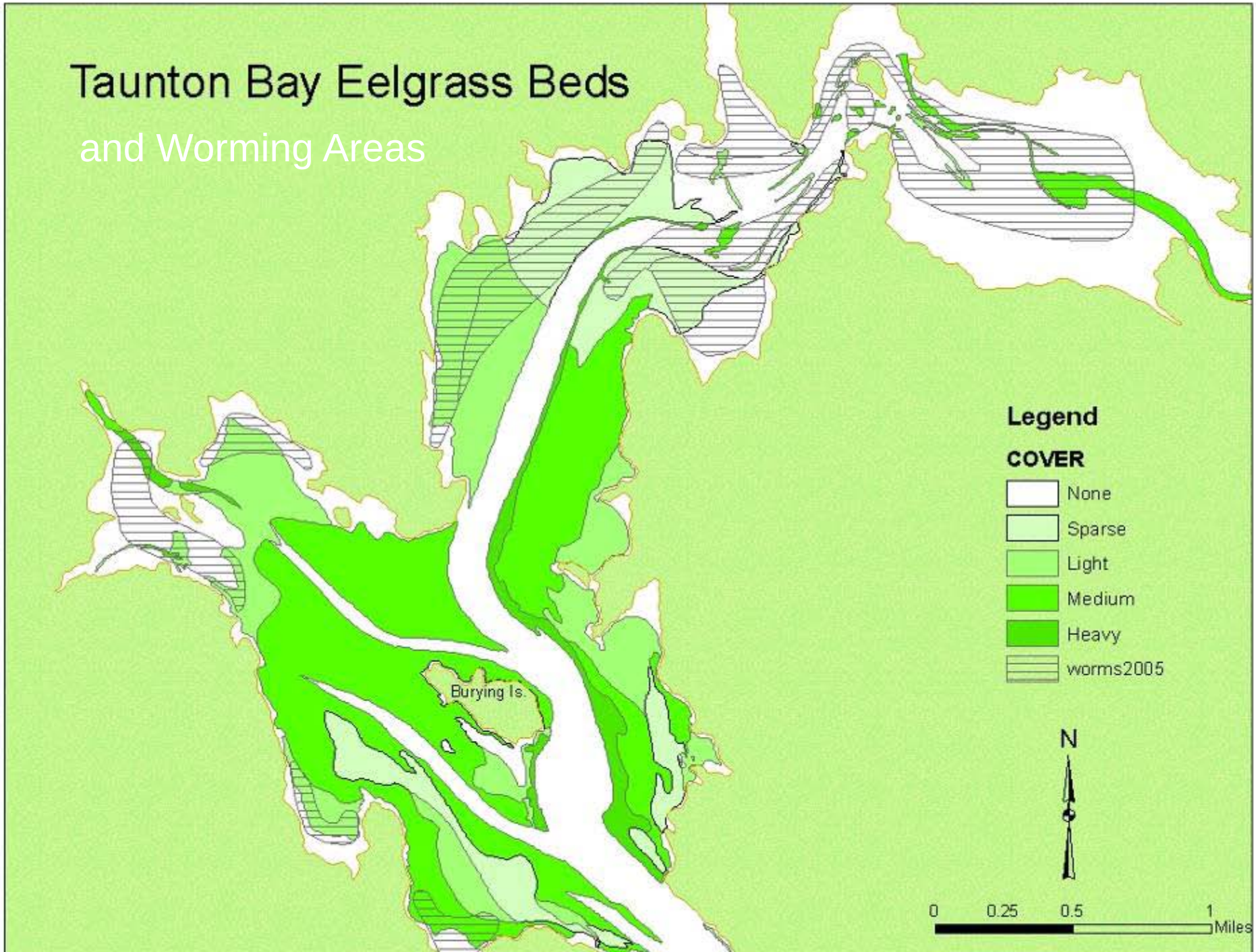
Signature of Department Sponsor: _____

Mail this form, along with your license or license application to:

Licensing
Department of Marine Resources
21 State House Station
Augusta, Maine, 04333

For questions, call John Sowles at 633-9518

An Upcoming Issue?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0.5
1
Miles

Research Questions

- How does habitat value vary with stand density and patch mosaic
- How does quality and duration of turbidity events effect eelgrass
- What is the role of eelgrass on sediment stabilization in Taunton Bay
- What drives diebacks and population variance
  - antecedent mussels sediment chemistry
  - salinity and temperature swings
- Are there less intrusive and economically viable harvest methods

Necessary Ingredients for Success

- Political will and support
- Strong stakeholder support and commitment
- Clear goals, endpoints and strategies agreed to upfront
- Must be hands-on
- Willingness to risk mistake
- Feedback mechanism and course corrections
- Show progress – keep moving
- Under the radar an advantage

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