

Experiments with Governance in the Gulf of Maine

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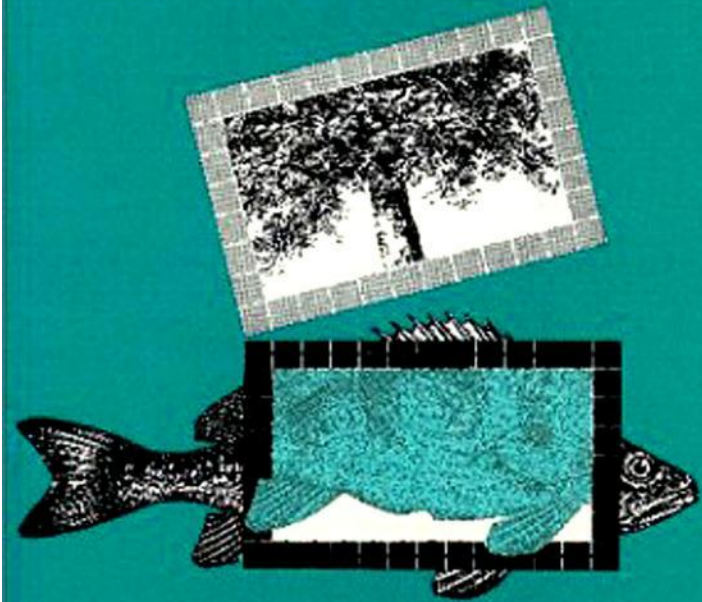
And...

North Island Science Collaborative,
North Haven Island, ME.

“All policies are
Experiments -
Learn from them!”


Kai Lee 1993

Adaptive Management of Renewable Resources



CARL WALTERS

Three Levels of Experimentation:

A small boat with several people on board is positioned in the center of the frame, floating on a calm sea. The background features a hazy horizon with distant mountains under a soft, golden light, suggesting either dawn or dusk. The overall scene is serene and serves as a backdrop for the text.

1) Correlative - Fisheries.

2) Comparative - Governance and Policy Design.

3) Experimental - Socio-ecological Interactions

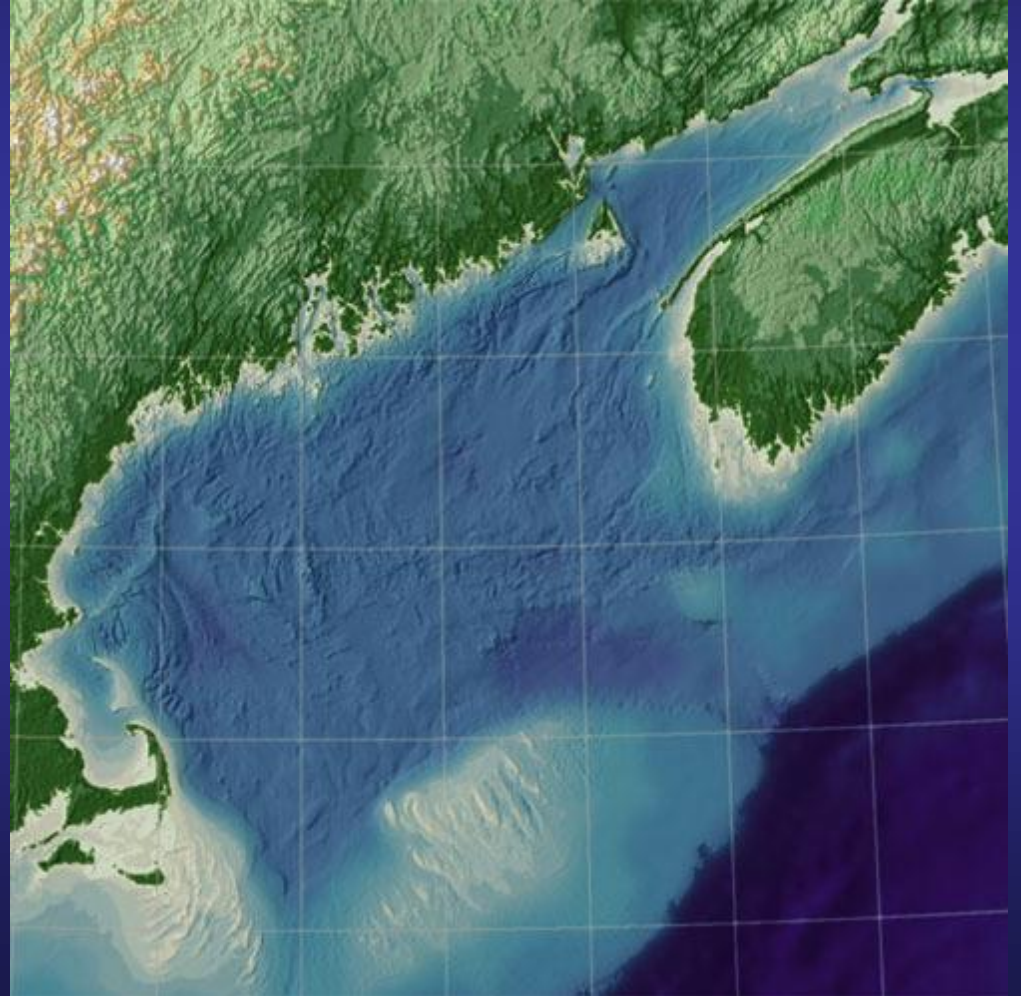
1) Correlative Studies: Change in Near-shore Environments and Fisheries Through Time.



New England Fisheries Tied to the History of America.



Fisheries in the Gulf of Maine.



Maine Inshore Ecosystems Are a Shadow of Their Previous Self.



Large part of culture.



Fishing Down the Ecosystem - the Turner Farm Site (4000 years of History).



Simplified Trophic Structure Through Time.

Table 1. Rankings of harvested species from prehistoric times to the recent. The consensus list is derived from the other published studies. Our intent is to determine species that are have been abundant in the Gulf of Maine. Most of the larger gadids are strong interactors as predators and several of the smaller species such as redfish, herring and alewives are thought to be important foods for several species including the large gadids.

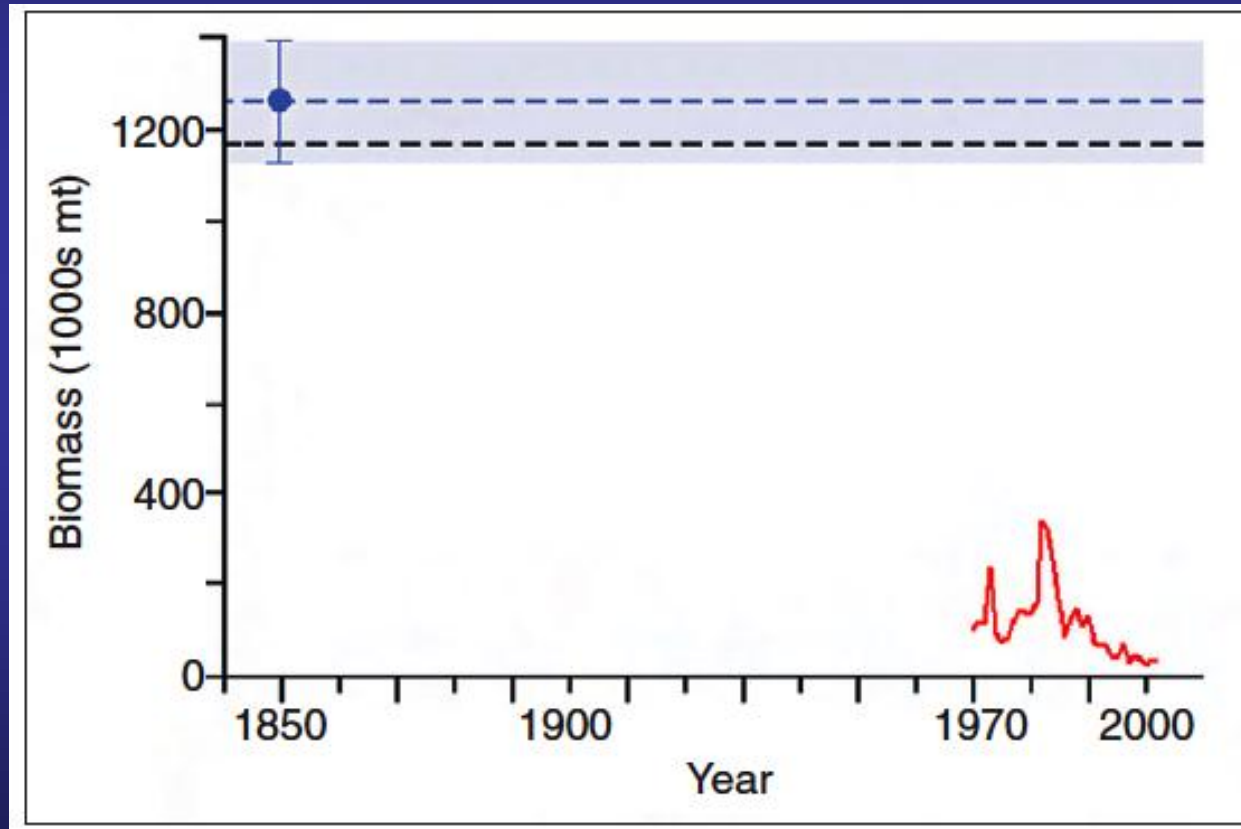
Prehistoric Spies & Lewis 2001	Prehistoric Carlson 1986	1927 Rich 1929 1929	1976 – 1998 Collette & Klein-McPhee 2002	2002 Maine DMR 2004	Consensus This study	#/total
1. Cod	Cod	Cod	Cod	Monkfish	Cod	5/5
2. Flounder (winter, yellowtail dab, sand)	Tomcod	Haddock	Haddock	Herring	Haddock	4/5
3. Swordfish	Sculpin	White Hake	Yellowtail flounder	Flounder (Plaice)	Pollock	3/5
4. Sculpin	Flounder	Silver Hake	Monkfish	Cod	White Hake	2/5
5. Sturgeon	Sturgeon	Cusk	Dogfish	White Hake	Silver Hake	2/5
6. Tomcod		Pollock		Haddock	Winter Flounder	4/5
7. Dogfish		Halibut		Witch Flounder	Redfish	0/5
8. Cunner		Herring		Pollock	Herring	3/5
9. Herring		Mackerel			Alewives	1/5
10. Haddock		Flounder				
11. Halibut						
12. Pollock						
13. Wolffish						
14. Alewife						

From Steneck et al. 2004

Transition in Fishing Technologies.



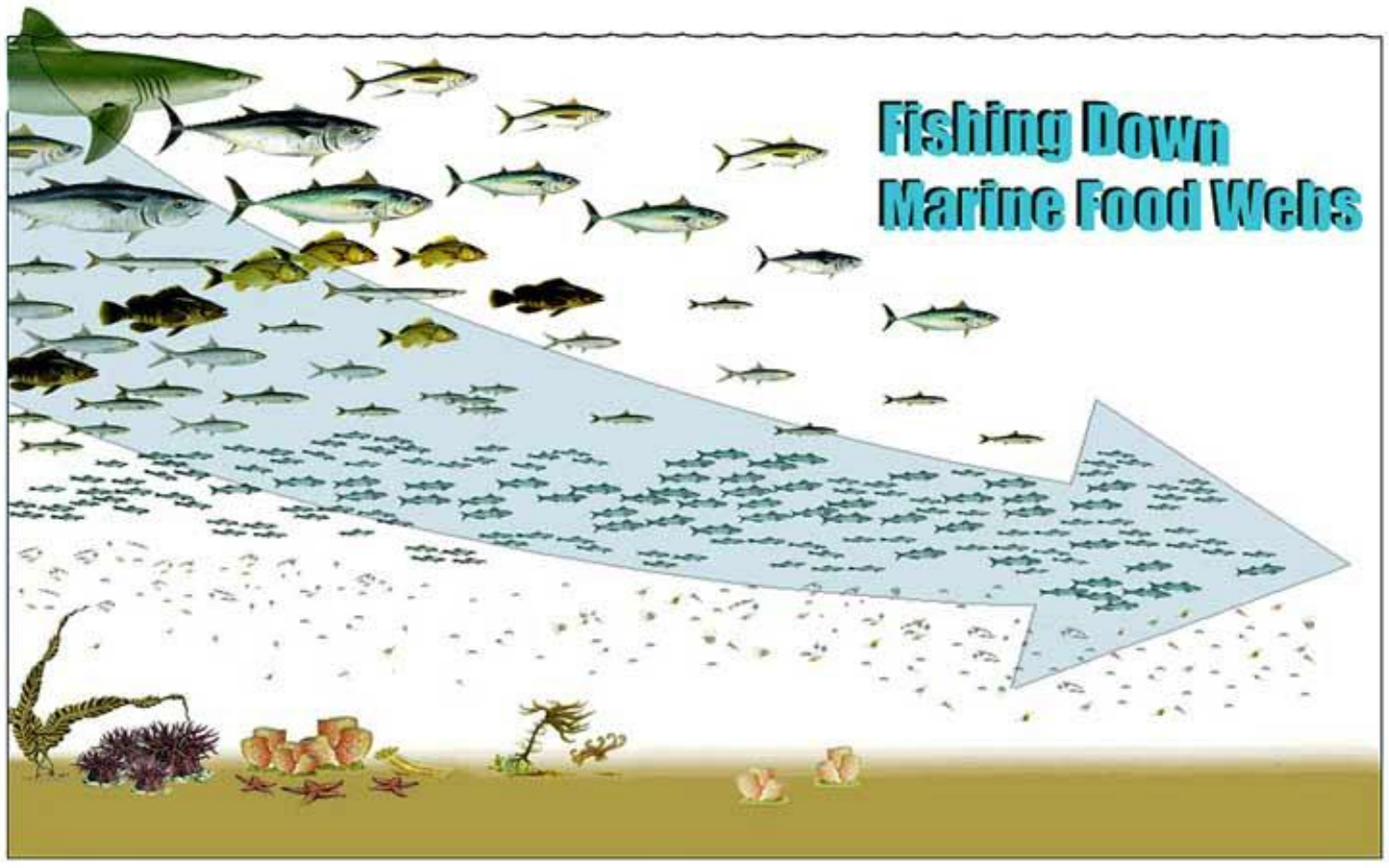
Biomass and Diversity a Decline.



Rosenberg et al. 2005

Fishing Down Marine Food Webs

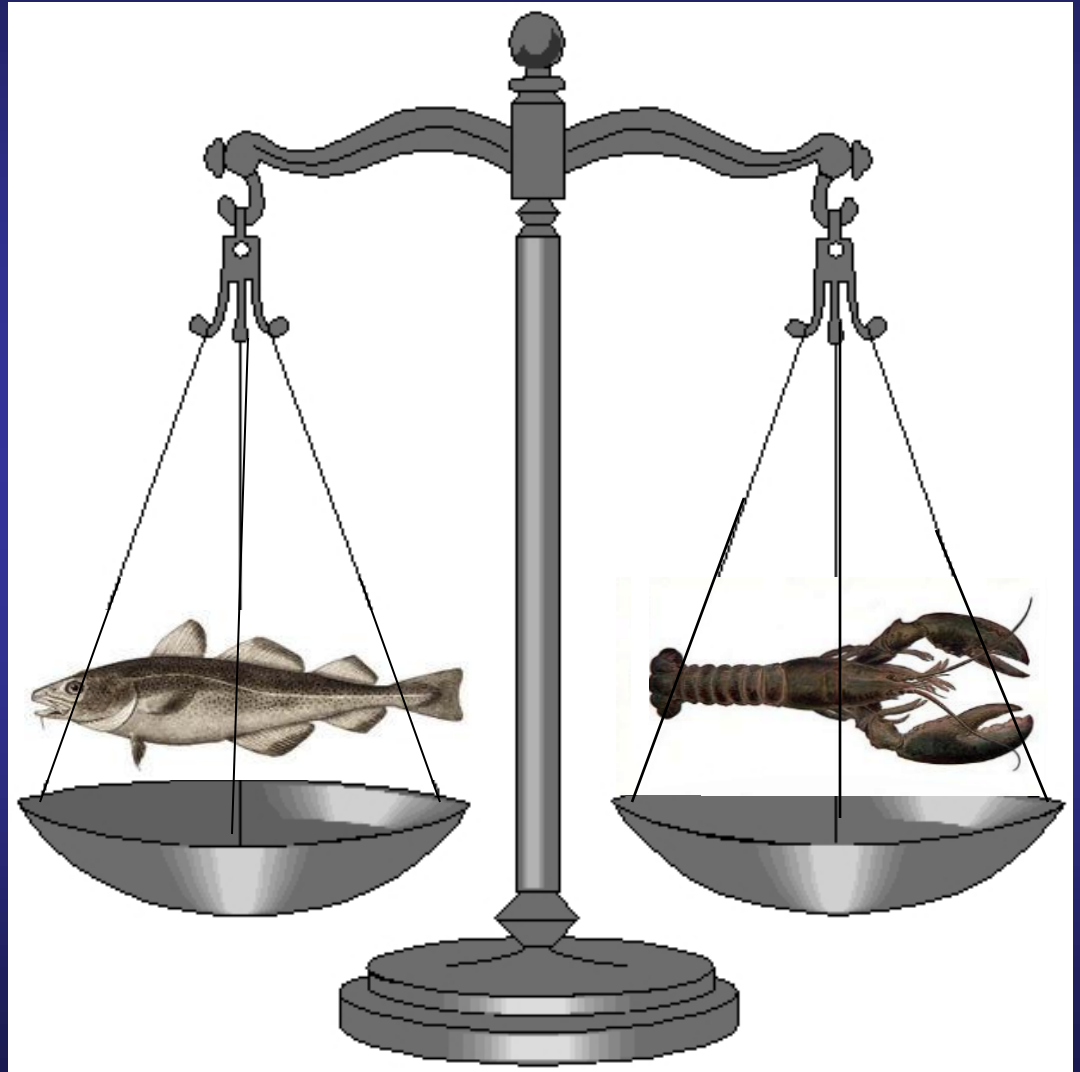
5
4
3
2





2) Comparative
Studies:
Governance and
Policy
Experiments

Balance
Between
Cod and
Lobster.



Lobster - Localized Management.



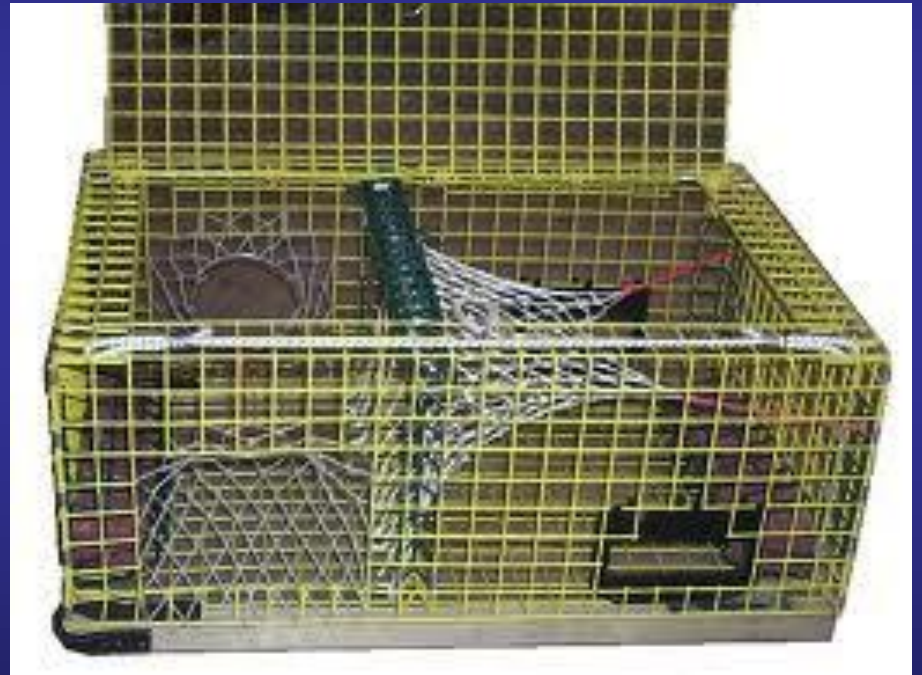
Three Rules:

a) Institutionalize Slack

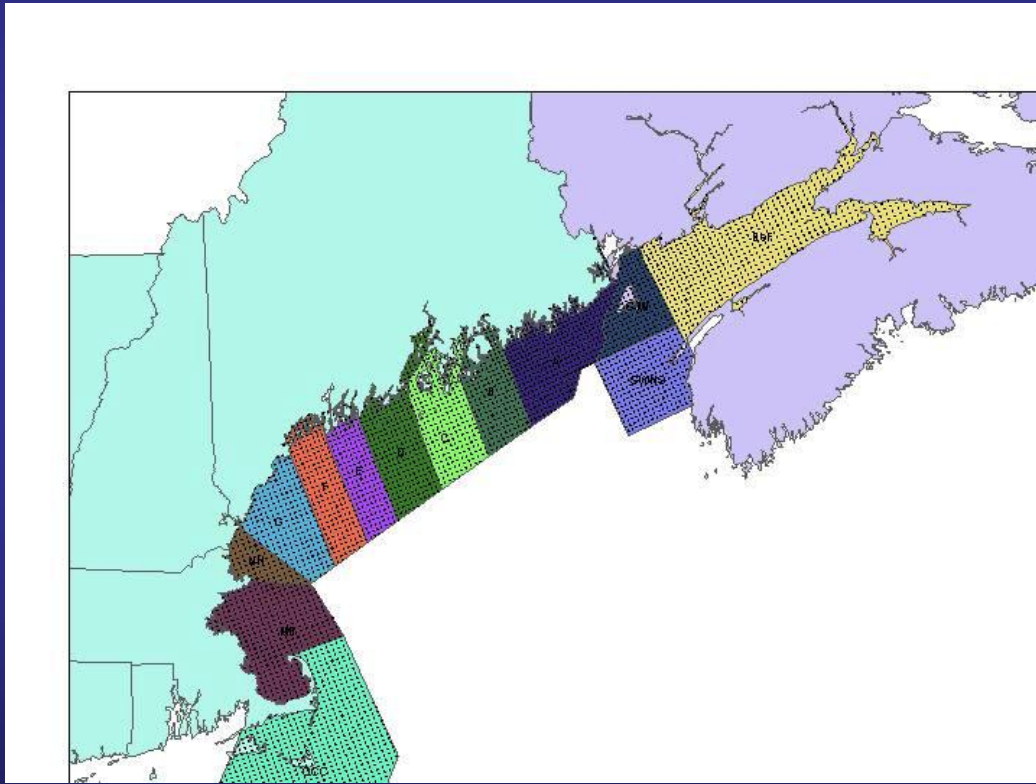
b) Local Governance

c) Family Boats &
Limited Entry

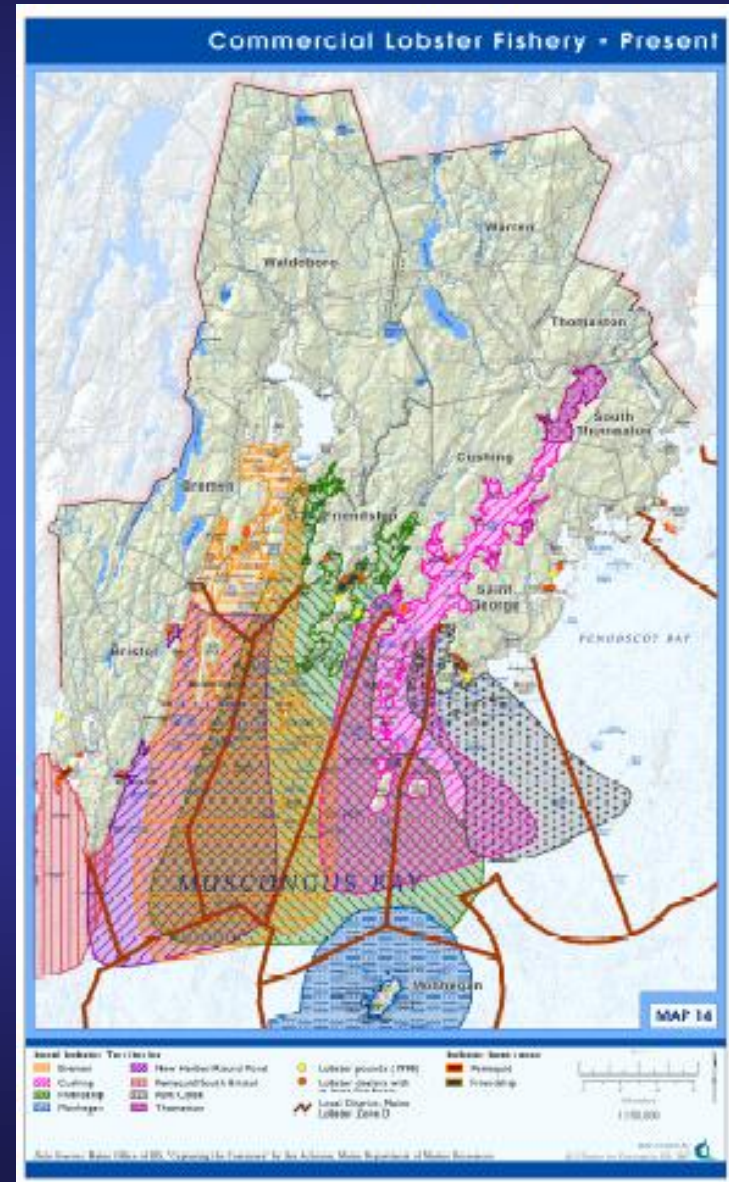
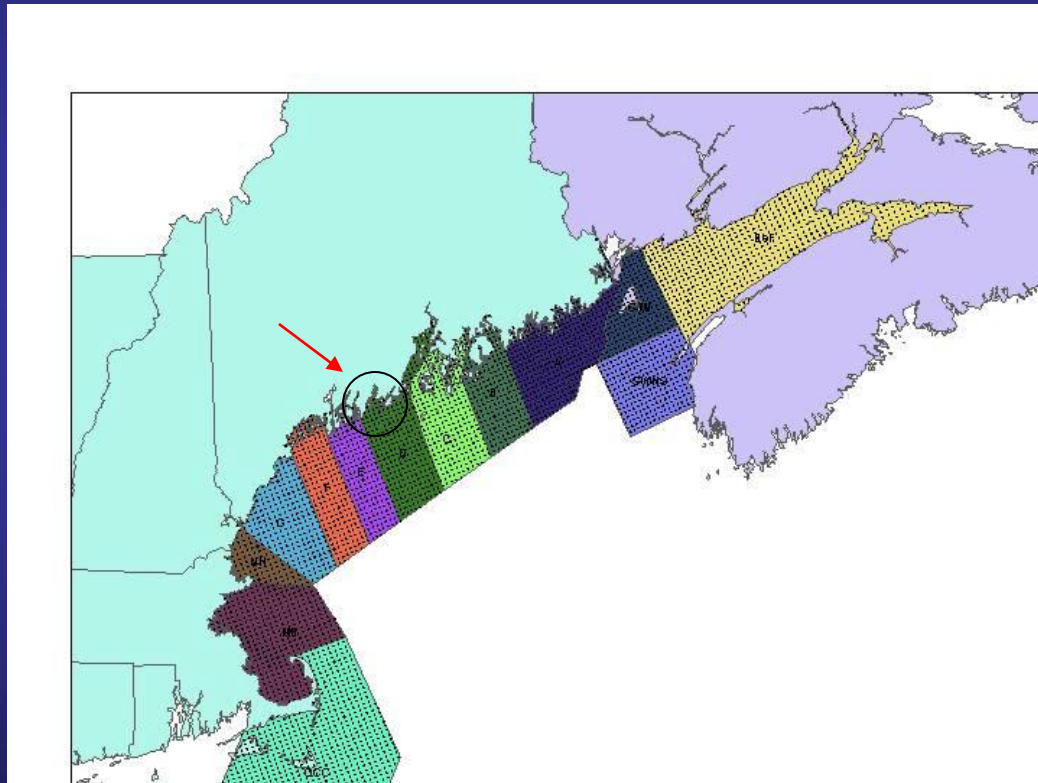
a) Building Slack: Double Gauge and Old Technology



b) Local Governance: Control and Accountability



Regional and Local Levels



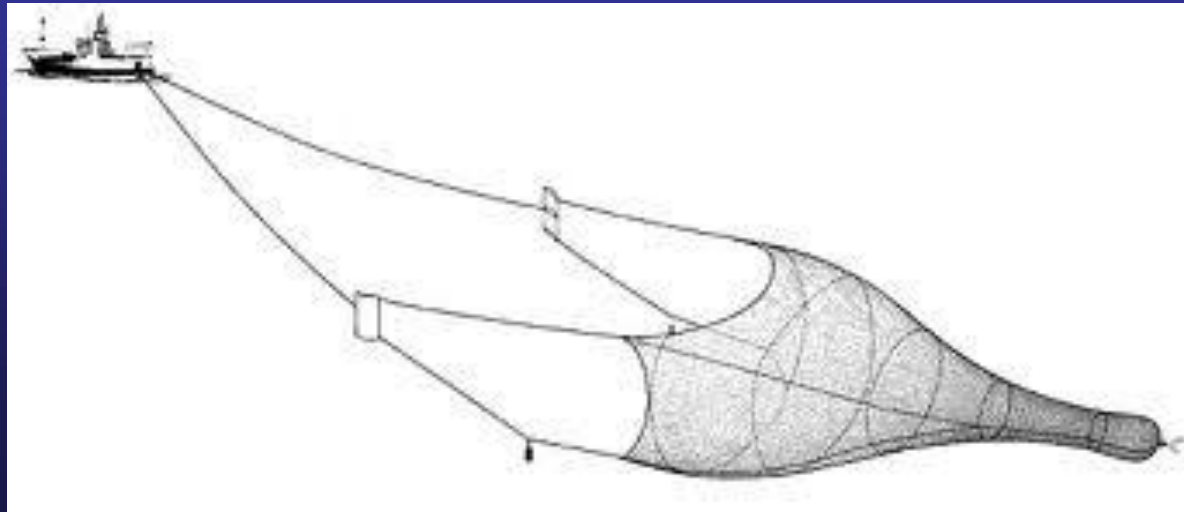
c) Family Boats and
Limited Entry:
Single Ownership



Groundfishing - A Different Set of Assumptions and scale.



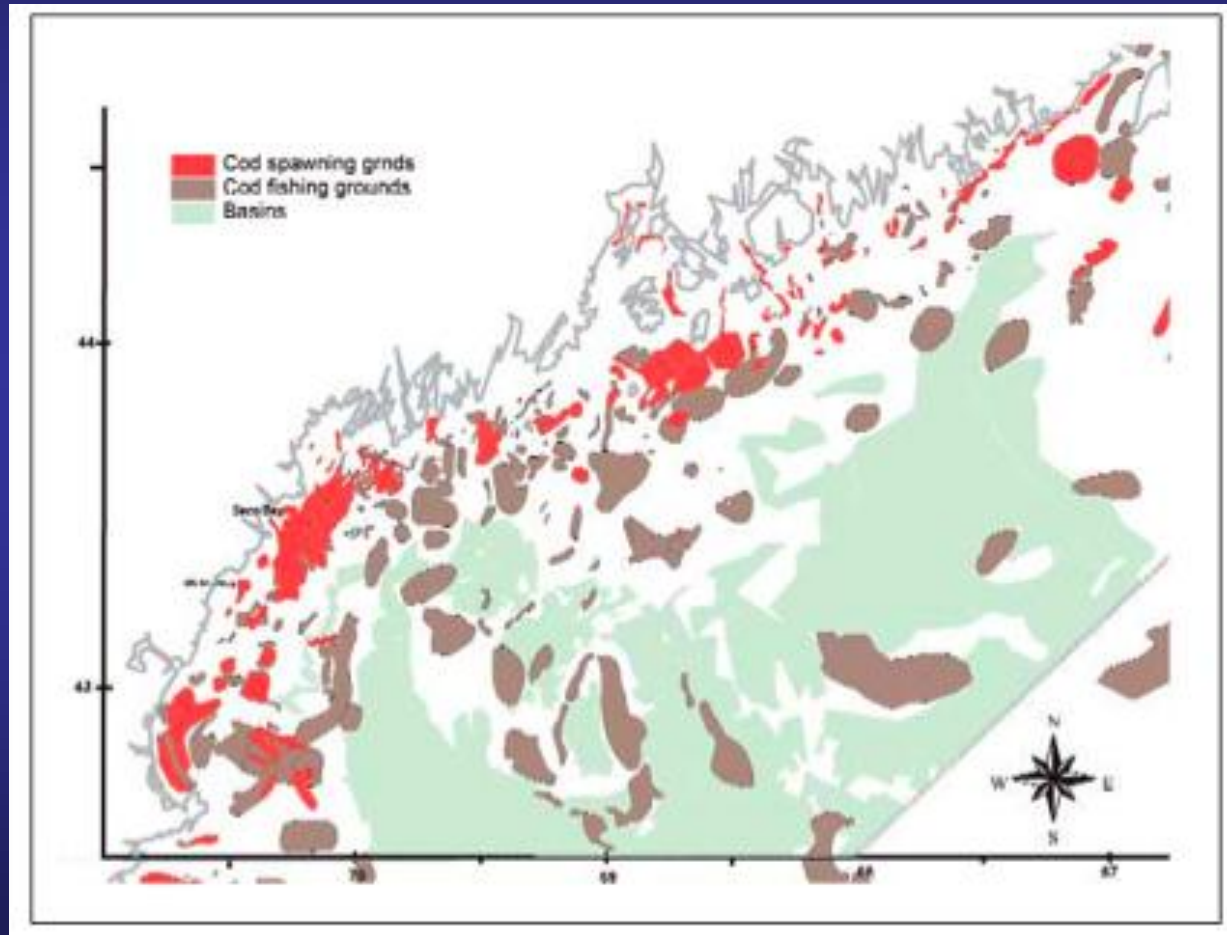
- 1) Limited by time and not space.
- 2) Corporate Ownership.
- 3) Advanced Technology.



Federal Fisheries Management Perspective of Fish Stocks.



Local Fishers Perspective of Fish Stocks.



Ames 2006

*“ We can catch every
last damn fish in
the sea ”*



3) Experiment
Social and
Ecological



Governance Implications?

- 1) Socio-ecological
Experiment.
- 2) Ecological
Experiment.
- 3) Process
Experiment.

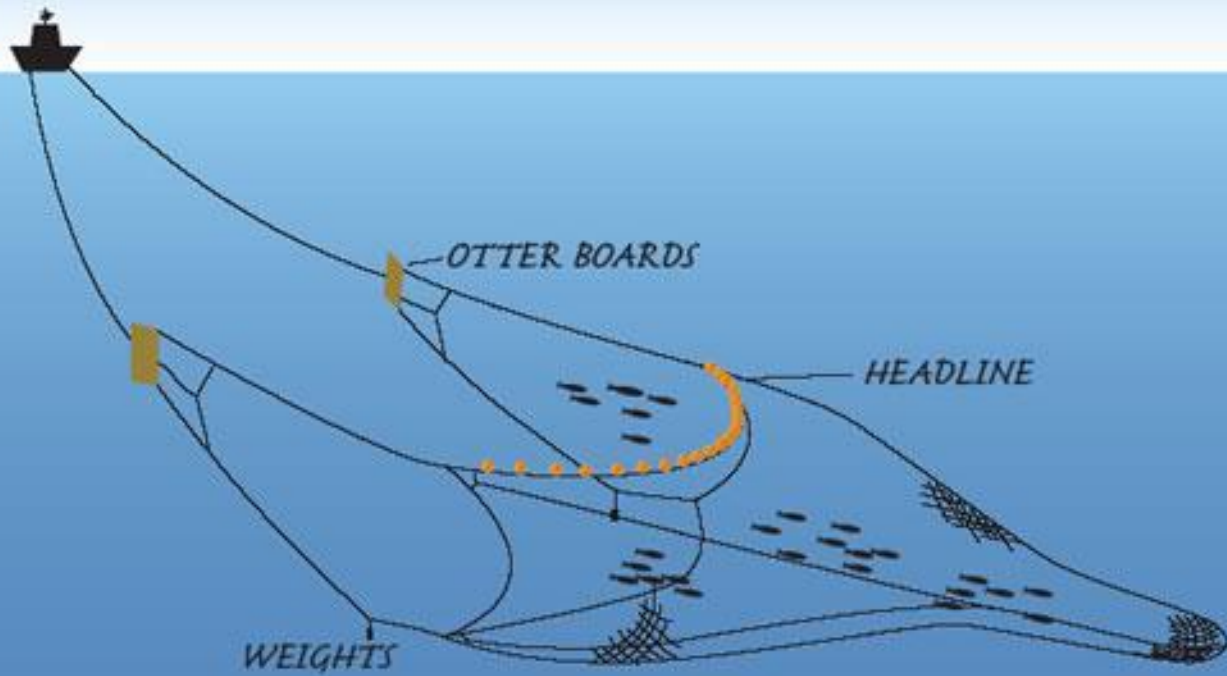


Socio-ecological Experiment
Limiting of Mid-Water Trawling
Sarah Hammit (MIT)





MIDWATER TRAWL



Ecological Experiment

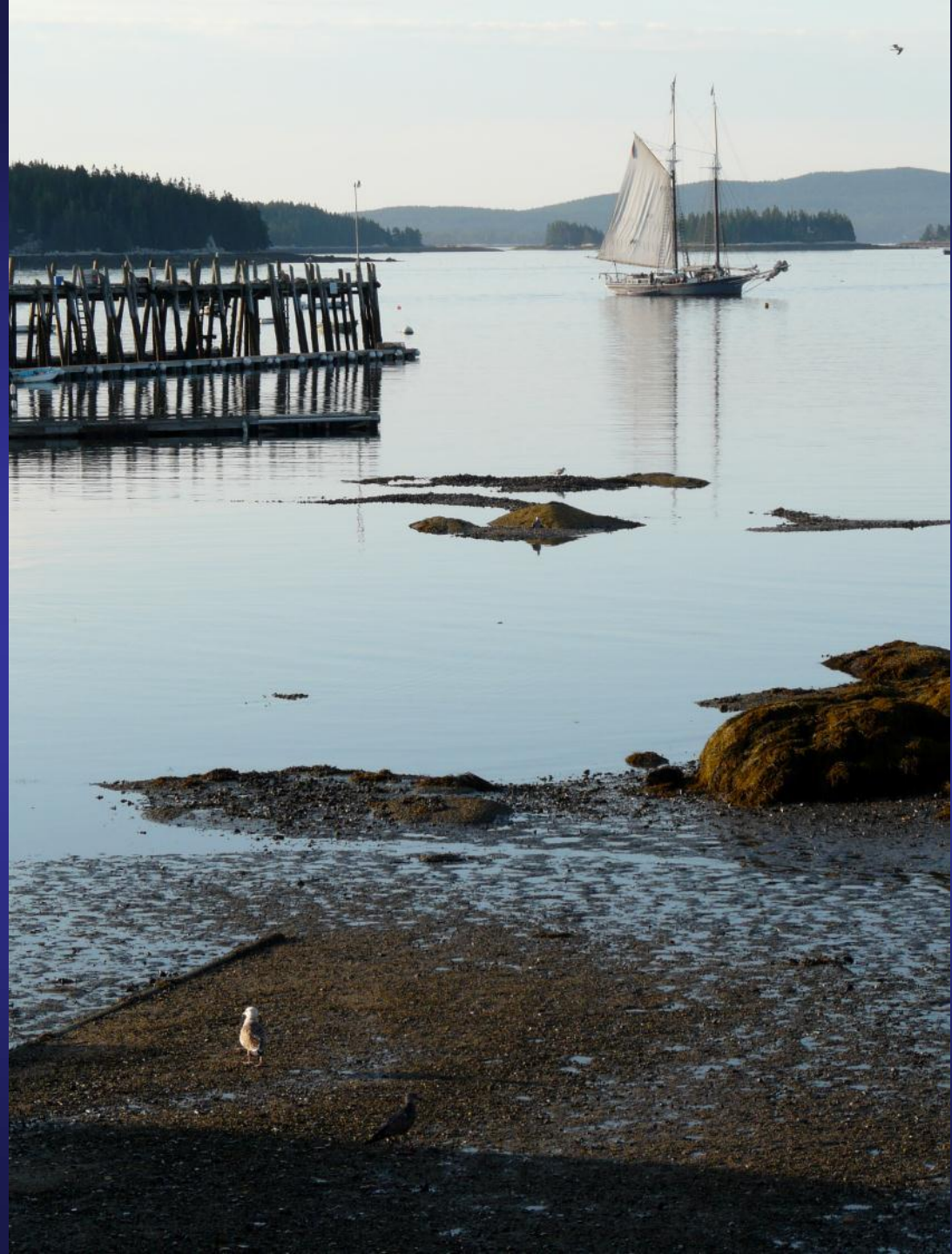
Restoration of Inshore Fisheries - North Haven, Island.



Reintroduction of Alewife and Smelt



Process Experiment



Camden to Cobscook Project



Overarching Lessons



Build Relevant Knowledge, Credibility, and Power - Community-based Science and Stewardship.



How to Mitigate Socio-ecological Collapse?

- 1) Trust and Openness.
- 2) Match the Scale of Governance with the Scale of the System.
- 3) Develop Incentives for Self-Governance and Conservation: Feed-back loops.

Summary:

In Building Adaptive Governance
The Goal is Linking
Ecology with Economy
and Culture.

To Rescale Socio-
Ecological Perspectives
to Find Emergent
Processes and Common
Ground.





Questions?