

**NOAA
FISHERIES**

NEFSC

Social Sciences Branch

**NMFS Senior Scientist for
Economics**

MAFMC Climate Science and Fisheries Workshop

Geret DePiper

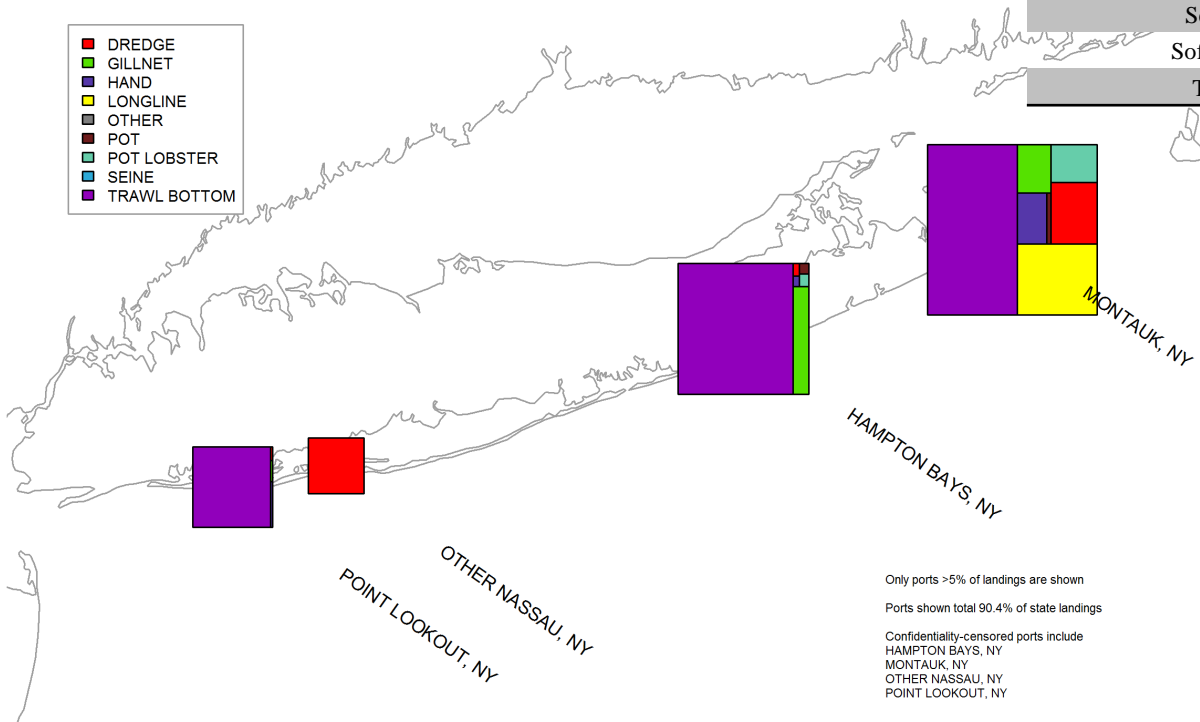
Doug Lipton

February 11, 2014

New York State

**Revenue by Gear
New York 2007-2012**

- DREDGE
- GILLNET
- HAND
- LONGLINE
- OTHER
- POT
- POT LOBSTER
- SEINE
- TRAWL BOTTOM

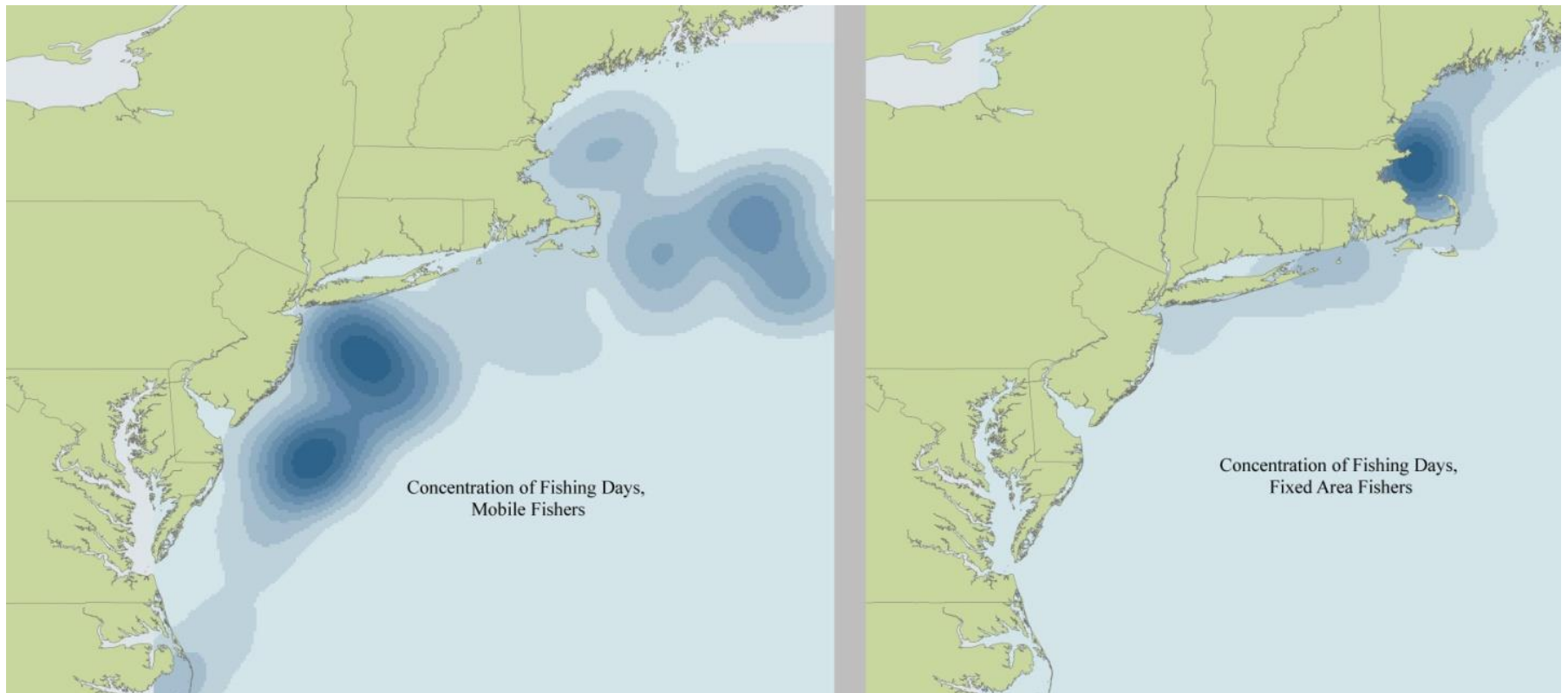


Only ports >5% of landings are shown
 Ports shown total 90.4% of state landings
 Confidentiality-censored ports include
 HAMPTON BAYS, NY
 MONTAUK, NY
 OTHER NASSAU, NY
 POINT LOOKOUT, NY

	2011 (thousands of dollars)
Total Landings Revenue	37,625
American lobster	1,398
Atlantic surf clam	ND
Eastern oyster	ND
Summer flounder	3,715
Loligo squid	7,249
Quahog clam	ND
Scup or porgies	2,549
Sea scallop	4,961
Softshell clam	ND
Tilefishes	4,525

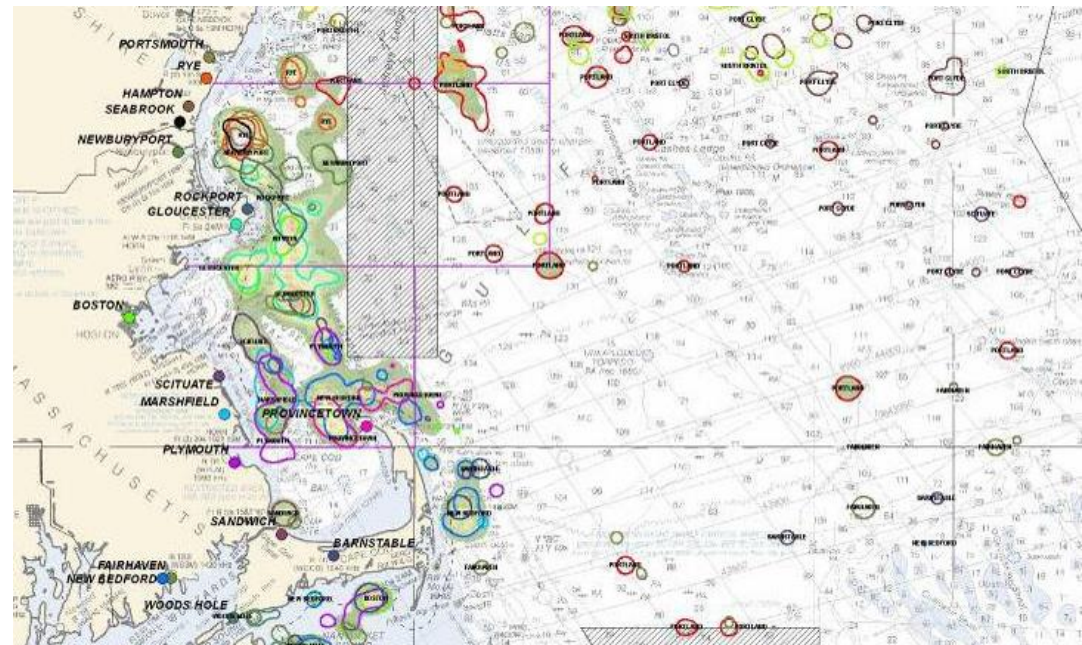
Fleet Dynamics

- Fixed vs. Mobile
 - Olson (2011)



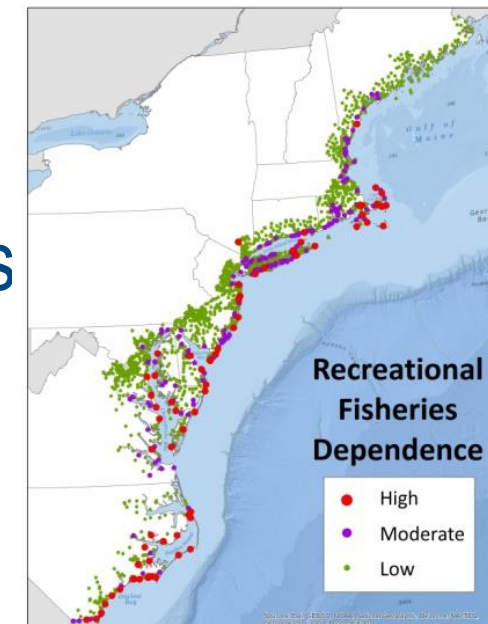
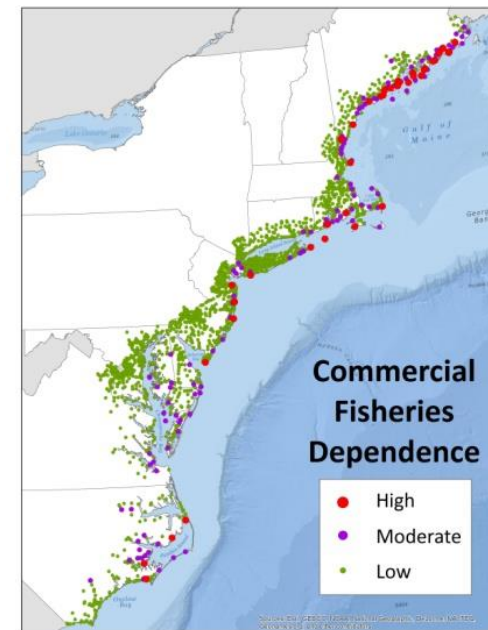
Fleet Dynamics, continued

- Communities at sea
 - St. Martin and Hall-Arber (2008)
 - Acheson and Gardner (2004)
 - St. Martin (2001)



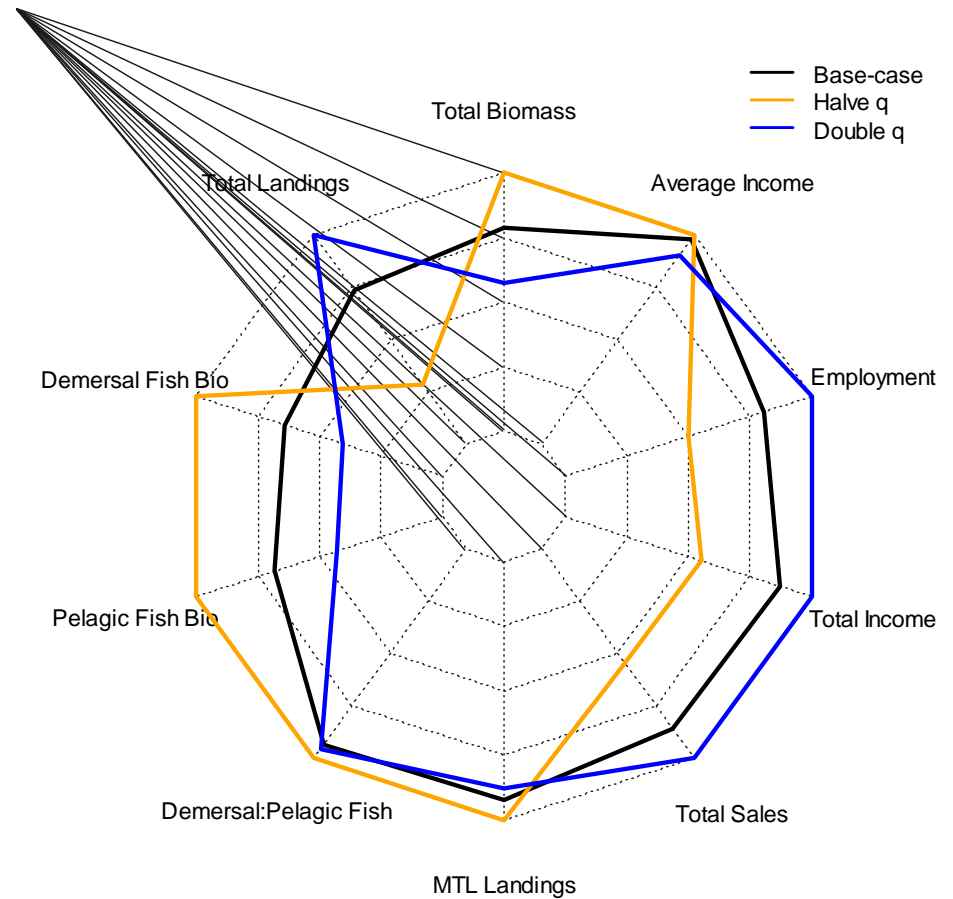
Community Vulnerability and Resilience

- Colburn and Jepson (2012)
- Social/Economic robustness
- Dependence on fisheries
- Susceptibility to climate change impacts



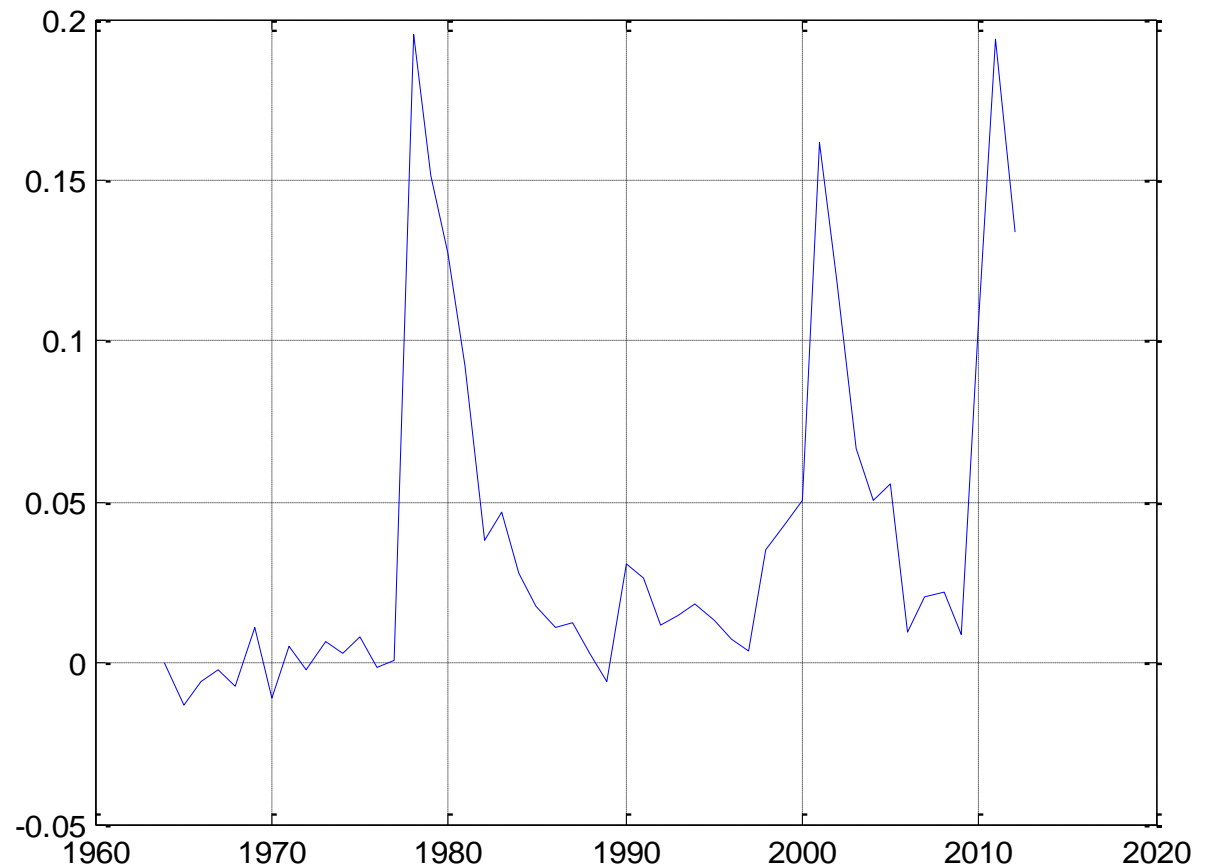
Coupled Models

- Atlantis – Input/Output



Portfolio Analysis

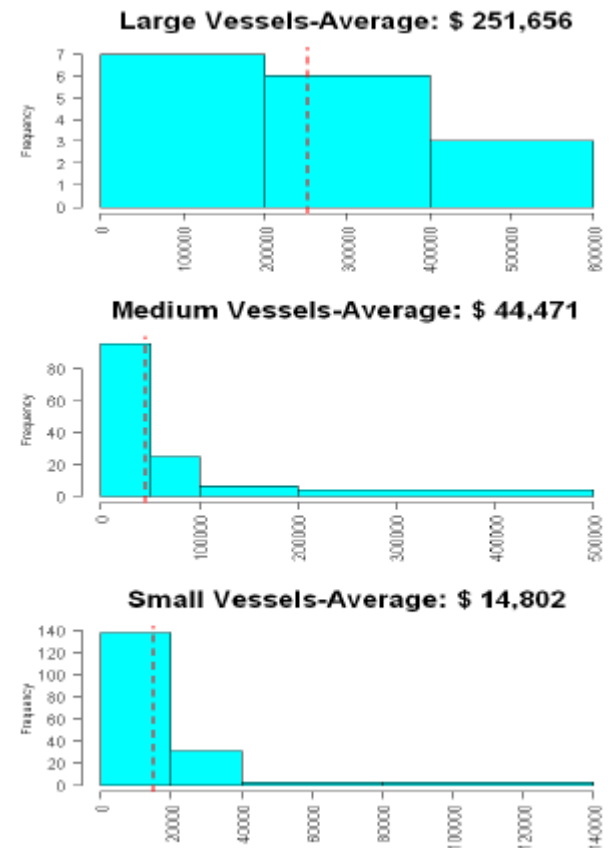
- Mean – variance trade-off



Data collection

- Annual cost survey
- Crew and Owners surveys

Fishing Business Costs



LONGER TERM FLEET DYNAMICS



Long Term Dynamics: Challenges

- Current data and analyses designed to model fleet dynamics on a much shorter term time scale
 - Trips
 - Season
 - Annual
- Corresponds to time (and spatial) scale of management decisions
 - Annual or seasonal quotas
 - Area management

Short Term Fleet Dynamics

- Aggregation of Individual Decisions By Owners/Captains

Short run
fixed factors
that
influence
Individual
choices

Capital –
Vessel/Gear

Knowledge –
Owner/Captain/Crew

Community/Family
Traditions

Market
Conditions

Stock
Conditions

Port Location

Management
Regulation

Fish?

Yes

No

Target Species/Complex

A

B

Area

X

Y



In the longer run...

- Capital Replacement
 - Vessel and gear depreciates and needs replacement
 - Timing is critical
 - Heterogeneity in fleet re: where they are in the process
- New investment opportunities
- Even fishing ports come and go (e.g., Wanchese)
 - Decision to add port/expand port at state or local level
 - COE dredging and port maintenance decisions



But the ability to adapt

- Is dependent of the transition path to the new state
 - Gradual shift
 - Sudden transition
 - In an ecosystem framework, some gradual shifts, some sudden
- Can't replace capital or invest in new fishing method if you've been unsuccessful during the transition

Need Studies of Long Term Fleet Dynamics

- Examples exist
 - Menhaden
 - Surf clam
- Hasn't been a priority
 - Demand is for short term dynamics to support fishery management decisions



Management Implications

- Needs Discussion
- Catch Shares
 - Help
 - Asset value for investment financing
 - Shares can be traded to newly adapted fleet
 - Hinder
 - Tied to species, could lose value if species declines
- Ecosystem Approaches

Concluding Comments

- Significant challenge to address in a declining budget world when information demands are to support current management actions
- Different types of data and analyses are needed than is what is currently collected
- Need to determine actionable items that will make this investment in research worthwhile

Questions?

