

Science, Service, Stewardship



Strategic Planning for Cooperative Research Present Opportunities and Future Directions

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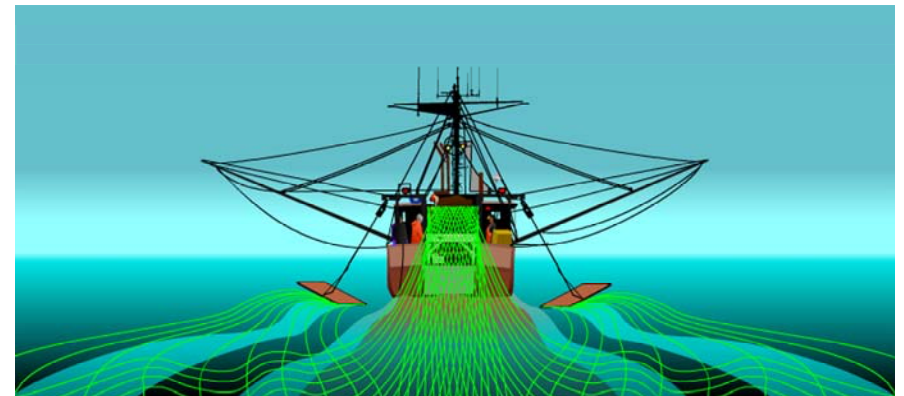
Why are We Holding these Discussions?

To define a clear set of *strategic cooperative research priorities* to inform the evolution of NOAA Fisheries' Northeast cooperative research programs from 2010-2014.



What Do We Hope to Cover?

- BRIEF BACKGROUND ON NOAA'S COOPERATIVE RESEARCH PROGRAM (CRPP AND RSA) 1999-2008
 - IMPACTS OF COOPERATIVE RESEARCH
 - LESSONS LEARNED AND SUCCESS FACTORS
- GUIDING PRINCIPLES FOR 2009-2014 STRATEGY
- DRAFT COOPERATIVE RESEARCH PRIORITIES BASED ON COUNCIL PRIORITIES
- KEY QUESTIONS FOR **YOU**





What is the Northeast Cooperative Research Strategic Planning Process?





Objectives of NOAA's Northeast Cooperative Research Program

- Foster coordination, cooperation, communication, and mutual respect among scientists, managers, and industry.
- Develop new information upon which fishery management decisions are made by:
 - Improving the precision of stock assessments and addressing concerns about bias in sampling; and
 - Improving the temporal and spatial resolution of multi-species catch (haul based), gear performance, and life history data to support more timely and a greater diversity of management options (i.e. dynamic areas and SAP).
- Direct Industry support for Sustainable Fisheries.



Northeast Cooperative Research Program (1999-2008)

Three Long-Term Initiatives:

1. Industry-based surveys (Cod & YTF)
2. A comprehensive tagging program to study cod stock structure, and
3. Electronic logbooks - Study Fleets



Northeast Cooperative Research Program (1999-2008)

Additional Annually Funded Short-Term Projects:

- i. Habitat research related to mobile fishing gear and changes to the benthic community
- ii. Sociologic and Economic studies related to special access programs and different DAS usage
- iii. Stock structure studies using tagging and genetic methods (cod, yellowtail flounder, halibut, black seabass, silver hake)
- iv. Conservation engineering (gear studies to effect more selectivity for target species) and use of these gear in Special Access Programs



Cooperative Research Partners Program Projects Funded 1999-2006

(Thousands of \$)

Research Category	2000	2001	2002	2003	2004	2005	2006	Total
Industry Based Survey	1,073.4	332.4	100.0	1,590.2	1,583.7	1,639.9	1,170.7	7,490.3
Conservation Engineering/SAP	476.8	858.0	1,093.2	374.4	1,785.2	456.9		5,044.5
Cod Tagging				2,585.2	823.3	193.0	180.2	3,781.7
Study Fleet		67.7		1,915.9	906.2			2,889.8
Habitat	151.0	212.8		1,513.3		85.0		1,962.1
Resource Dynamics				250.0			215.0	465.0
Outreach/Education						162.2	127.2	289.4
Socioeconomic						98.5	131.9	230.4
Strategic Planning/Scoping	212.2							212.1
Stock ID / Genetic	79.9							79.9
Total	1,993.3	1,470.9	1,193.2	8,229.0	5,098.4	2,635.5	1,825.0	22,445.2



Cooperative Research Partners Program Projects Funded 1999-2006 (Number)

Research Category	2000	2001	2002	2003	2004	2005	2006	Total
Cod Tagging				5	3	1	1	10
Conservation Engineering/SAP	3	3	7	1	7	4		25
Habitat	1	1		8		1		11
Industry Based Survey/ Fishery Independent	2	1	1	2	4	4	2	16
Outreach/Education						3	2	5
Resource Dynamics				1			2	3
Socioeconomic						1	1	2
Stock ID / Genetic	1							1
Strategic Planning	3							3
Study Fleet/ Fishery Dependent		1		1	1			3
Grand Total	10	6	8	18	15	14	8	79



Research Set Aside Projects Funded 1999-2006

- Scallop (2001-09).....41 projects @ \$5.40 million**
- Monkfish (2005-09)..... 9 projects @ \$1.04 million**
- Mid. Atl. RSA (2001-09) ...26 projects @ \$3.40 million**
- Herring (2007-09) 1 project @ \$242 thousand**

77 total projects valued at just under \$10 million



Mid-Atlantic Research Set Aside Projects Funded 2001-2008

Research Category	2001	2002	2003	2004	2005	2006	2008	Total
Conservation Engineering	3	2	1	1	1	1		9
Discard Mortality						1	1	2
Management Strategies					1			1
Monitoring		1	2	2	2	2	2	11
Total	3	3	3	3	4	4	3	23



Northeast Cooperative Research Impacts in the Region

- Over 265 scientists from 30 research institutions
- 295 fishermen
- 20 industry organizations





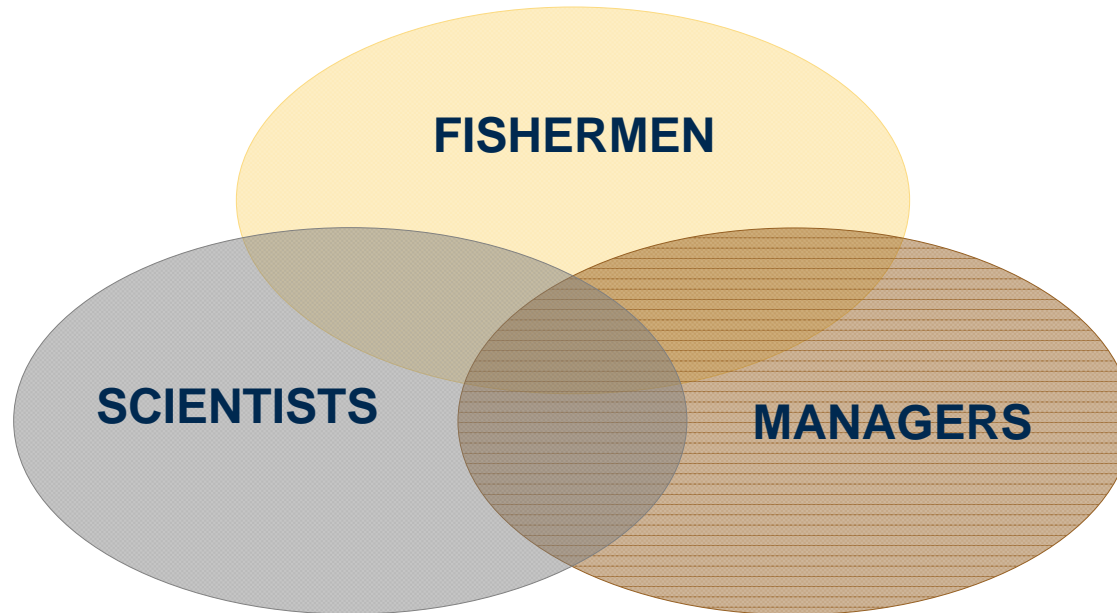
How Have Cooperative Research Results Been Used in Management/Assessments?

- Black sea bass mesh
- Yellowtail special access
- YTF & Cod IBS – Bio Samples and Closed Areas
- Topless shrimp net
- Gulf of Maine raised footrope trawl
- Ruhle trawl
- Scup trap survey
- Cod, YTF & BSB tagging
- Summer flounder discard mortality

(see <http://www.nero.noaa.gov/StateFedOff/coopresearch/grants/ProectList.htm>)



Cooperative Research Building Bridges





What Lessons Have Been Learned?

- **Frequent dialogue**
- **Responsiveness to management**
- **Collaboration with NMFS scientists and technical people**
- **Networks among institutions**





(More Lessons Learned)



- **Sharing products and equipment**
- **Peer review of results**
- **Project data collection**
- **Annual meeting**



General Guiding Principles for Cooperative Research

- Long term resource monitoring and broad fundamental system wide research is more appropriately supported by dedicated base research funding.
- Socioeconomic and broader habitat and ecosystem studies *may* be particularly challenging for cooperative research.

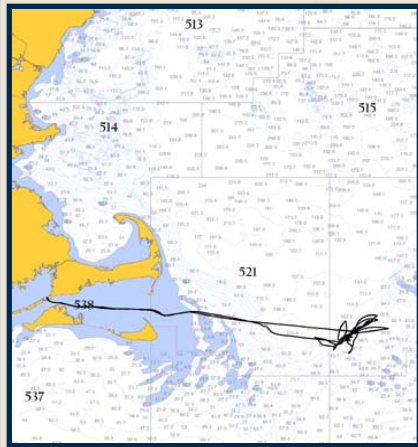


General Guiding Principles Potential Theme I

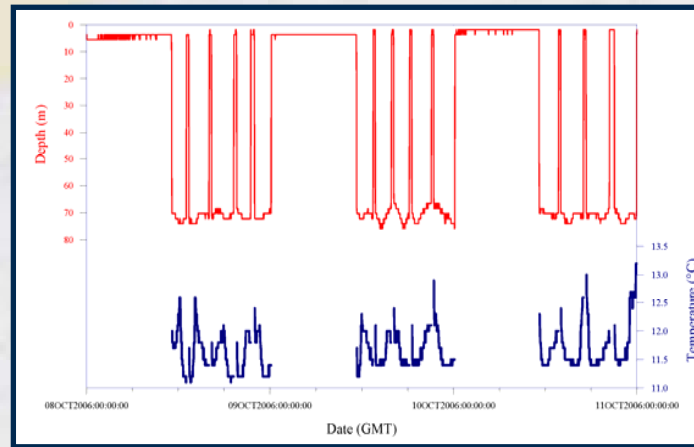
Monitoring to Address Data Gaps:

- Develop a ***technology transfer program*** to support timely and accurate fishery dependent reporting for ACL, AM, LAPPS, DAPPS, etc.;
- Focus on detailed ***temporal and spatial data*** on fishery specific patterns of effort and catch;
- Support research for timely ***bycatch monitoring*** to improve precision of bycatch estimates;
- Collect ***biological samples*** to answer emerging questions about stock response to changes.

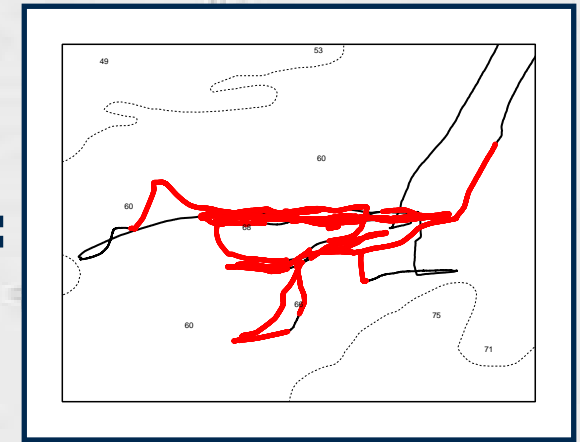
Study Fleet Post-processing of GPS and temperature-depth data



X



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Effort number	Effort start time (GMT)	Duration (h)	Distance fished (km)	Average speed (kmh)	Average depth (m)	Average Temperature (°C)
1	08OCT2006:11:10:30	1.9	11.1	5.9	72.3	11.8
2	08OCT2006:13:24:00	2.6	15.1	5.8	71.8	11.7
3	08OCT2006:16:21:00	2.9	17.1	5.9	70.8	11.5
4	08OCT2006:19:39:00	1.8	9.7	5.4	71.3	11.6
5	08OCT2006:21:58:30	2.2	14.1	6.5	71.1	11.5
6	09OCT2006:11:21:00	2.1	12.0	5.7	70.9	11.7
7	09OCT2006:13:46:30	2.1	12.4	6.0	71.8	11.6
8	09OCT2006:16:12:00	2.0	12.3	6.1	71.0	11.6
9	09OCT2006:18:33:00	2.5	15.2	6.0	70.3	11.7
10	09OCT2006:21:25:30	2.7	14.6	5.4	70.5	11.6
11	10OCT2006:11:15:00	2.5	15.3	6.2	70.4	11.6
12	10OCT2006:14:03:00	3.0	17.5	5.9	71.6	11.6
13	10OCT2006:17:22:30	3.0	20.8	6.9	70.9	11.6
14	10OCT2006:21:04:30	2.9	19.3	6.7	71.7	11.9

•By combining the GPS polling data with the TD probe data we can determine the location and timing of fishing effort from which the time-of-day, haul duration, haul location, distance fished, haul depth and water temperature can be determined.

•These data can then be matched up with the self-reported catch data that were entered into the ELB to determine the temporal and spatial occurrence of each catch and its associated environmental correlates.



General Guiding Principles Potential Theme II

Expanding Conservation Engineering Impact:

- Develop ***collaborative networks*** that will leverage NEFSC CR capacity to support conservation engineering (standardized field operations, data capture systems, archiving capacity, statistical design and analytical advice);
- Establish an ***industry conservation engineering panel*** to guide gear research;
- Support ***annual collaborator meetings*** of researchers, industry and Council members and staff;
- Increase investments in ***technology transfer or extension*** to broaden use of new gear designs.



Scientists Working with Fishermen to Address Bycatch & Discard Issues in the Northeast

- Lots of causes – lots of solutions!
- Solutions must be economically viable, practical and simple.
- Fishermen know gear and operations – their active engagement translates to success.
- Temporal and spatial changes in harvesting can address some problems and enhance gear changes.
- Real solutions will have conservation value, rebuilding stocks and maintaining our fisheries.





New England Cooperative Research Draft Species-Specific Priorities

Groundfish

- Need greater quantity and quality of data on the composition of discards and bycatch in the monkfish, groundfish (including small mesh) and skate fisheries.

Skates

- Identify fishing practices or gear modifications that may improve skate size and species selectivity. Reduce fishing mortality on skate stocks of concern.

Herring

- Bycatch monitoring.
- Increased sampling and stock identification research to address fishery conflicts.



New England Cooperative Research Draft General Priorities

Sea Turtle Bycatch in southern New England Fisheries

- Gear modifications or fishing practices that can reduce or eliminate turtle bycatch without unacceptable reductions in target catch. Explore opportunities to leverage work on sea turtle bycatch funded under other programs (NMFS BREP, Scallop RSA).
- Bycatch monitoring by scallopers for turtles and yellowtail.

Spatial-temporal distributions

- Further investigations into stock definition, stock movements, mixing, and migration through tagging studies, DNA markers, morphological characteristics and other means for groundfish, skates, herring and silver hake.



Mid-Atlantic Cooperative Research Draft Species-Specific Priorities

Summer Flounder

- Need significant increase in biological sampling (length, age, sex, maturity) for summer flounder catch (kept and discards) across fisheries at fine scales of resolution. Critical sex ratio stock productivity questions need to be addressed.

Black Sea Bass and Scup

- Develop fishery independent surveys for scup and black sea bass (unvented trap surveys).
- Conduct tagging studies for scup, black sea bass and bluefish.

Loligo Squid

- Conduct gear research to reduce discards of butterfish and other non-targets in the *Loligo* squid fishery.

Butterfish

- Further research on improving the precision discard estimates for butterfish from all sources.



Mid-Atlantic Cooperative Research Draft General Priorities

Sea Turtle Bycatch in Mid-Atlantic Trawl Fisheries

- Develop turtle exclusion devices for trawl gear in the Mid-Atlantic.
- Explore opportunities to leverage work on sea turtle bycatch funded under other programs (NMFS BREP, Scallop RSA).

Mid-Atlantic trawl fishery – baseline economic survey of infrastructure investments

- Initiate survey to start developing industry cost estimates for fleet impacts of trawl gear modifications to address bycatch reduction.



Key Discussion Questions

1. What are the information needs that you see as most critical in the next 3-5 years for fisheries management and stock rebuilding? Are those the suggested the correct ones?
2. Given limited funding, do you think NOAA should be more species or theme specific or invest more broadly?
3. What models of collaboration have been most successful and how should NOAA consider shaping cooperative research in the future (networks, creating synergy, enhancing communication, leveraging resources)?



Additional Discussion Questions

4. What is the appropriate role of cooperative research relative to monitoring programs, most notably surveys for stock status monitoring and fishery dependent monitoring (VTRs, observer programs)?
5. What is the appropriate role for cooperative research relative to broad research areas (sociological – economic, habitat, ecosystem, and climate change)?
6. When (how) should pilot studies transition from research to operational mode, and thereby move from funding under cooperative research to permanent funding?

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Additional Public Discussions and Opportunities for Input

February 23	6:30pm - 8:00pm	Narragansett, RI
February 24	5:30pm - 7:30pm	Portland, ME
March 4	1:30pm - 3:00pm	Waltham, MA
March 6	2:45pm – 4:30pm	Rockland, ME

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