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New England Fishery Management Council
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E.F. "Terry" Stockwell III, *Chairman* | Thomas A. Nies, *Executive Director*

MEMORANDUM

DATE: **September 9, 2016**

TO: Council

FROM: Tom Nies, Executive Director

SUBJECT: **2017 Possible Priorities List**

1. Attached is a list of possible Council tasks for 2017, prepared without regard to available resources. It will be reviewed for completeness at the September Council meeting. Council members will be asked to prioritize the list during the month of October. The Executive Committee will bring recommended priorities to the Council for a final decision at the November meeting. Please contact me if you have questions.

Groundfish

2. In 2015, we continued to struggle with changing priorities mid-year - primarily with respect to management of the Northeast Multispecies Fishery Management Plan, but also with respect to the Herring and Scallop FMPs and the addition of another Committee. Groundfish stock assessment updates planned for 2017 could lead to additions to the 2017 priorities late in the year.

Scallops

3. The date of implementation of OHA2 may affect scallop priorities. New scallop access areas will not be part of the 2016 framework (with the exception of a CAI change), but will probably need to be revised after OHA2 is implemented.

Observer Committee

4. After completion of the IFM amendment, the Observer Committee could turn to development of a strategic approach for monitoring discards. This was first raised in January 2015, and was discussed at a recent Executive Committee meeting (see the enclosed presentation). Such an effort will need to be coordinated with the Fishery Dependent Data project and Electronic Monitoring projects.

Other Actions

5. The Executive Committee identified three new broad-scale projects that Council members may want to consider for 2017. While briefly described below, the Council may want to discuss these further at the Council meeting.

a. Development of a Strategic Plan: Many fishery management entities have recently prepared strategic plans. As an example, the strategic plan for the MAFMC can be found here: http://www.mafmc.org/strategic-plan/ .These plans serve at least two purposes: they formally state the activities that will be pursued, providing guidance to the Council as it considers future work, and they inform the public of the Council's general priorities and management philosophy. Development usually involves extensive communication with interested parties and development of a Council vision.
b. Programmatic review of Council operations: A fundamental element of good management for any organization is a periodic review of processes in the Touchstone Report of 2011. A review could focus on business practices, resources, policies, and overall performance. Enclosure (4) was prepared for the Executive Committee and gives an outline of the concept.
c. Research Set-Aside Program Review: The Council's three RSA programs (scallops, herring, monkfish) issue awards that rival those of national programs, like the S-K program. A review of the process and procedures may identify areas for improvement. For example, are there alternatives to the use of grants? Are the programs cost-effective? Please see enclosure (5) for additional discussion of this topic.

Enclosures:

(1) Status of 2016 priorities

(2) 2017 Draft Priority Tasks

(3) Executive Committee discard monitoring presentation

(4) Executive Committee programmatic review presentation

(5) Executive Committee RSA presentation

9/2/2016	UNDERLINE: REGULATORY REQUIREMENT										
	Strikethrough: Completed or Expecting Completion										
FMP	**Annual**	**Comm.**	**ExCom**	**Council**	**Status**	**Multi-Year**	**Comm.**	**ExCom**	**Council**	**Status**	
Groundfish											
	Action to adjust ASM provisions		✓	✓		*Amendment to consider limited entry in the groundfish party/charter fishery*			✓		
	~~Set US/CA specifications for 2017~~		✓	✓	Expect completion	Develop alternative strategies for setting catch advice for stability in ACLs		✓	✓		
	Recreational management measures process		✓	✓	Expect completion						
	Process for review of groundfish catch in other fisheries		✓	✓							
	Windowpane flounder management alternatives		✓	✓	Expect completion						
	Recreational management measures and possible sub-ACL for GB cod										
	Staff: work with ASMFC lobster TC on groundfish bycatch in lobster traps										
	Modifications to common pool regulations: trimester quota changes, HA exemptions from broad stock area provisions										
	Adjust exemption areas as necessary due to OHA2 changes (GenCat sea scallop, whiting, etc.; may be better addressed by other Committees)										
	~~*Action to modify herring fishery GB haddock sub-ACL*~~			✓	Expect completion						
	~~*Modify Atlantic Halibut management measures*~~			✓	Expect completion						
	Staff: Cod Stock Structure Workshop		✓	✓							
	Staff: Five year sector review		✓	✓							
	~~Staff: TMGC/TRAC~~		✓	✓	Expect completion						
	Review of GB haddock catch cap accounting, possible vessel-specific catch caps	✓									
	~~*Staff: Witch flounder assessment*~~			✓	Expect completion						
Monkfish											
	~~Monkfish specifications for 2017-2019~~		✓	✓	Expect completion	*Continue Monkfish Amendment 6 for modifications to DAS program (including leasing) and catch shares (sectors and IFQs).*					
	~~Staff: Research Set Aside~~		✓	✓	Expect completion						
	~~Staff: Monkfish assessment~~		✓	✓	Completed						

Sea Scallops												
	~~Prepare a specifications package to set FY 2017 and 2018 (2019 default) specifications (i.e. setting DAS, access area trips, Northern GOM TAC, limited access general category IFQ allocations, potential modification of scallop access area boundaries, etc.).~~ ~~**Prohibit shell stocking north of 42 20N.**~~ ~~Clarification needed on whether this is for one or two year specifications.~~	✓	✓	✓	Expect Completion							
	Framework action to modify scallop access areas to be consistent with OA2 revised areas (including CAI carry-over trips in the north); ~~develop gear modifications to further protect small scallops (same as reactive windowpane flounder AM)~~	✓	✓	✓								
	~~Host a workshop to address concerns raised about scallop fishing pressure in inshore areas.~~	✓	✓	✓	Completed							
	~~Staff: Support technical and management reviews for Research Set Aside program~~	✓	✓	✓	Completed							
	Integrate findings from Sea Scallop Survey Methods Peer Review (process TBD)	✓										
	~~Staff: NMFS and PDT have new annual responsibilities related to estimating scallop and YT catch during the year (i.e. LA AM exception, re-evaluation of YT sub-ACL based on updated information).~~	✓	✓	✓	Completed							
	Five year review of LAGC IFQ program (will require staff and Committee time)	✓	✓	✓	Expect Completion 1/2017							
	Review the overall performance of the ACL structure since it was adopted under Amendment 15 in 2010 (could be considered in a future action in 2016 or later).	✓	✓	✓								
	Consider modifications of current reactive YTF AMs to be more consistent with windowpane flounder AMs.	✓										
Herring												
	Catch share alternatives for the limited access herring fishery					Amendment to address ABC control rule, concerns expressed about localized depletion	✓	✓	✓			
	Framework action to allow seasonal allocation of the RH/S catch caps	✓										
	Action to address GB haddock bycatch cap accountability measures ~~and GB haddock sub-ACL~~			✓	Expect completion							
SBRM												
	No Action Planned											
Red Crab												
	~~Update 2017-2019 specifications~~		✓	✓	Expect Completion	*Consider management of Jonah crab and addition to this FMP (or a new FMP)*						
	Consider allowing landing of female red crab and modify specs accordingly											
Habitat												

	Complete Omnibus Deep-Sea Coral Amendment with range of alternatives already approved as part of the Omnibus EFH Amendment 2 process (as time and resources permit)	✓	✓	✓		~~Complete Omnibus Habitat Amendment (expected implementation 2016)~~	✓	✓	✓	Submission August 2016	
	Framework action to address surf clam access to HMAs	✓	✓	✓							
	Staff: Update and further development of the SASI model		✓	✓							
	Staff: Habitat impacts of other management actions		✓	✓		Coordinate wind power issues with other agencies'spatial planning		✓	✓	Ongoing	
	Staff: SBNMS Advisory Committee		✓	✓							
Research Steering											
	~~Continue to steer research to support NEFMC plans.~~	✓	✓	✓							
	~~Support S-K program~~	✓	✓	✓							
SSC											
	Support SSC activities such as recommending ABCs and making recommendations in the FMP development process		✓	✓							
Enforcement, Safety, VMS											
	Continue to support enforcement, safety and VMS issues.	✓	✓	✓							
Whiting											
	Staff: PDT receives annual monitoring report from Regional Office and advise Council whether management adjustments are needed	✓	✓	✓	Expect completion	Conduct scoping and prepare a draft amendment with limited access alternatives and possibly other management issues	✓	✓	✓	Ongoing	
Skates											
	~~Complete action for 2016-2017 skate specifications~~	✓	✓			*Prepare an amendment to consider limited access in the skate fishery (late in year)*	✓		✓	Ongoing	
	~~Staff: Annual monitoring report~~		✓	✓	Expect completion						
	~~Staff: Monitor thorny skate ESA review~~		✓	✓	Completed						
EBFM											
						Develop and validate an example Fishery Ecosystem Plan; prepare scoping document	✓	✓	✓	Ongoing	
Hagfish											
	No action planned										
Observer Committee											
	~~Complete industry funded monitoring amendment~~	✓	✓	✓	Expect completion						
	Develop policy for monitoring commercial fisheries to address multiple information needs	✓		✓	Ongoing						
Risk Policy Working Group											

	~~Review FMP risk policies for consistency with overall policy~~	✓	✓	✓	Completed						
Trawl Survey AP											
	Address issues identified in AP charter	✓	✓	✓							
Other											
	Fishery dependent data projects: likely initiation of an Omnibus Amendment (GARFO lead) to adopt recommendations of GARFO/NEFSC		✓	✓	Ongoing	Fishery dependent data (NERO lead)		✓	✓		
	NRCC SAW Working Group Participation		✓	✓	Ongoing						
	International Fisheries Management TMGC/TRAC/Steering Committee ICCAT HMS Advisory Panel/HMS FMP NAFO Commissioner		✓	✓	Ongoing						
	Staff: Protected Species issues		✓	✓	Ongoing						
	~~Staff: Support for NERPB; review and comment on the Draft Regional Ocean Plan~~		✓	✓	Completed						

Enclosure 2

2-Sep-16	This worksheet identifies possible priorities or tasks for 2017. This list has not been prioritized by the Ex Comm.					
Number		Priority/Task Title	Status	Multi_Year	Legal/Regulatory Requirement?	Source
	Groundfish					
1		Set ABCs/ACLs for all stocks, and adjust rebuilding plans as required			Y	Requirement
2		Develop alternative strategies for setting catch advice for stability in ACLs	Ongoing	Y		2014-2016 prioirities
3		ASM action (to include measures not addressed in FW 55; possibly to include EM)	Ongoing	Y		Added mid-year 2015
4		Process for review of groundfish catch in other fisheries		Y		2015 Priorities
5		Cod Stock Structure Working Group		Y		Jan 2012 SSC report; 2015-2016
6		Specify allocation review triggers				Allocation review policy
7		Adjust exemption areas as necessary due to OHA2 changes (GenCat sea scallop, whiting, etc.; may be better addressed by other Committees)				Triggered by OHA2
8		Develop limited access program for the party/charter fishery		Y		2016 prioirities
9		Recreational management measures and possible sub-ACL for GB cod				
10		Modifications to common pool regulations: trimester quota changes, HA exemptions from broad stock area provisions				
11	Staff	Sector five-year review				NMFS catch share strategy; 201
12	Staff	TRAC/TMGC				
	Monkfish					
13	Staff	Action to address strategies for better utilization of the TAL for NFMA and SFMA				
	Sea Scallops					
14		Prepare a specifications package to set FY 2018 and 2019 (2020 default) specifications (i.e. setting DAS, access area trips, Northern GOM TAC, limited access general category IFQ allocations, etc.). Clarification needed on whether this is for one or two year specifications.			Y	Requirement
15		Framework action to modify scallop access areas to be consistent with OA2 revised areas				Triggered by OHA2
16		NGOM scallop management measure changes: such as changing opening date, consistent gear restrictions, possession limits, effort controls.				
17	Staff	NMFS and PDT have new annual responsibilities related to estimating scallop, YT, windowpane catch during the year (i.e. LA AM exception, re-evaluation of YT sub-ACL based on updated information).	Ongoing			
18		Measures to address high-grading of scallops and reduce discard mortality				
19		Gear modfications to protect small scallops (extended link)				
20		Specify allocation review triggers				
21		Complete LAGC review (final report April 2017)				2016 priorities
22		RSA program review and modifications				
23		Modify flatfish AMs				
24	Staff	Support technical and management reviews for Research Set Aside Program				
25		Integrate findings from Sea Scallop Survey Methods Peer Review (process TBD)				

	Herring					
26		Amendment 8: MSE for ABC control rule and measures to address localized depletion	Ongoing	Y		2015 Priorities
27	Staff	EM Pilot Project	Ongoing			
28	Staff	Preparation for 2018 benchmark				
29	Staff	Coordination with MAFMC, ASMFC				
	SBRM					
28		No action planned				
	Red Crab					
29		No action planned				
	Habitat					
30		Continue Omnibus Deep-Sea Coral Amendment with range of alternatives already approved as part of the Omnibus EFH Amendment 2 process (some modification of alternatives may be necessary)	Ongoing	Y		2015 Priorities
31		Framework action to address surf clam access to HMAs	Ongoing			Triggered by OHA2
32	Staff	Update and further development of the SASI model		Y		
33		Wind power coordination with BOEM		Y		
34	Staff	Habitat impacts of other management actions		Y		
35	Staff	SBNMS advisory panel				
36	Staff	Monitor and comment on EFH consultations for major projects ,coordianted with GARFO HCD				
37						
38	RSC					
39		Continue to steer research to support NEFMC plans, including development of five year researc hprioirites	Ongoing			
40	Staff	Support S-K program				
	SSC					
41		Support SSC activities such as recommending ABCs and making recommendations in the FMP development process	Ongoing		Y	
	Enforcement, Safety, VMS					
42		Continue to support enforcement, safety and VMS issues.	Ongoing			
		Develop cod end certification program				Council, June 2016
	Whiting					
43		Develop final and preferred alternatives for Draft Amendment 22, limited entry; conduct public hearings	Ongoing	Y		2014 and 2015 Priorities
44		Develop 2018-2020 Specifications ocument for red, silver, and offshore hake stocks. Consider raising the 40,000 lbs. southern whiting limit to 50,000 lbs, consider revising the exemption area open season dates.				
45	Staff	PDT receives annual monitoring report from Regional Office and advise Council whether management adjustments are needed			Y	
46						
47	Skates					
48		Prepare an amendment to consider limited access in the skate fishery		Y		2016 Priorities
49	Staff	Skate monitoring report				

	EBFM					
50		Complete example Fishery Ecosystem Plan for Georges Bank and develop a Management Strategy Evaluation process to engage fishermen and other stakeholders while conducting testing and validation.	Ongoing	Y		2014 Priorities
51	Staff	Assist in development of MREP EBFM module				
	Observer Committee					
51		Develop policy for monitoring commercial fisheries to address multiple information needs	Ongoing	Y		Jan 2015 Council motion
	Risk Policy Working Group					
52		No actrion planned	Ongoing			Anticipate 2016 completion
	Trawl Survey AP					
53		Address issues identified in AP charter				2015 Priorities
	Other: (Interspecies Type Actions)					
54		Fishery dependent data projects: likely intitiation of an Omnibus Amendment (GARFO lead) to adopt recommendations of GARFO/NEFSC		Y		NRCC
55		NRCC Working Group Participation	Ongoing	Y		NRCC
56		International Fisheries Management TMGC/TRAC/Steering Committee ICCAT HMS Advisory Panel/HMS FMP NAFO Commissioner	Ongoing			
57		Protected Species issues	Ongoing			
58	Staff	Support for NERPB; review and comment on the Draft Regional Ocean Plan	Ongoing			
59		Modify permitting restictions to allow permit splitting				Public comment
60		Modify vessel upgrade restrictions: limit upgrades through restrictions on VHP and weight rather than VHP and length				Public comment
61	Staff	Identify high-carbon regulations				Public comment
62		Council strategic plan development				
63		Programmatic review of Council operations				

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Strategic Approach to Managing Bycatch

- **Management and monitoring inseparable—the former determines the requirements for the latter**
- **Bycatch:**
  - **unintentional or incidental catch**
  - **either retained or discarded**

Two types of bycatch species:

A. **Mixture of bycatch and targeted (or directed) catch**
B. **Almost always bycatch**

Bycatch Management

Goals and Objectives

- **Maximize expected net benefits to the Nation from all fisheries that have bycatch**
- **Benefits:**
  - **Monetary value of targeted species plus additional value of retained bycatch (presumably mostly the former)**
  - **Non-monetary values, such as the continued existence (or compassionate phase out) of traditional fisheries**
  - **Striking the right balance is the challenge**
- **Conservation:**
  - **Prevent overfishing of A type species**
  - **Preserve ecological value (functionality) of B type species**
  - **MSY concept irrelevant to B type species**

Ideal situation for bycatch management

- **Stock assessments of bycatch species**
  - **Estimates of B, F, B_{MSY} , F_{MSY} for type A species**
  - **Estimates of B and B_{MIN} for type B species**
  - **Unbias, known precision**
- **ACLs set with known probability of overfishing or known probability of $B<B_{MIN}$**
- **Sub-ACLs set to maximize expected net benefits within conservation constraints**
- **Landings and discard accurately and precisely monitored near real-time**

Ideal situation for bycatch management
(Continued)

- **Marginal costs of monitoring equal or less than marginal increase in expected net benefits**
- **Fishing prohibited when projected landings+discards equal sub-ACLs**

Outcomes

- **Profitable fisheries, net benefits to the Nation (including non-monetary values)**
- **Conservation standards met**
- **Few surprises, credible (respected) fisheries management**

Real world bycatch management in NE

- **Little or no distinction between type A and B bycatch species**
- **Committee structure tends to favor preservation of traditional fisheries over net benefits to the Nation**
- **Two approaches to discard management:**
  - **Near real time monitoring and accounting for discards with in-season closures**
  - **ACL reduced to account for anticipated (based on past estimates) discards; i.e., management uncertainty**
  - **Both approaches have advantages and disadvantages, but is there a strategic basis for which approach is used?**

Real world bycatch management in NE: Implications of two approaches

Near Real Time Monitoring and Management	ACL reduced to account for discards
Strong incentive to reduce discards assuming industry has capability to do so (Where there is a will doesn't always mean there's a way!)	Weaker incentive to reduce discards
Relative conservation benefits unclear. Gut feeling, it may be better	Relative conservation benefits unclear. Gut feeling, it may not be as good.
Monitoring is either costly or there is the risk of pre-mature closure based on noise. We don't select a "most valuable player" based on their batting average in April! Problem skyrockets with sub-ACLs.	Monitoring less costly and precision of information used for decisions is predictable
No opportunity to evaluate the reason discards exceed expectations. AMs exacerbate the signal to noise problem	Reason discards exceed expectations (i.e., reduction in ABC to ACL to account for discards) can be addressed in specs process

Real world bycatch management in NE

Outcome

- **Precision and accuracy of discard information used for decisions (e.g., fishery closures) is either sometimes poor or unknown.**
- **Un-necessary/premature closures waste benefits or failures to close result in overfishing. AMs exacerbate the problem.**
- **Some fisheries made unprofitable and net benefits reduced.**
- **Low quality information for some bycatch species trumps the value of high quality information for directed fisheries.**
- **Surprises, dissatisfaction, everyone's credibility suffers.**

Enough about Management, Let's focus on monitoring discards

Why monitor discards???

- **Science- need estimates of discards as input to stock assessments. Annual estimates a few months after the fishing year generally good enough. Stock or fishery level estimates with reasonable precision achievable for major discard species.**
- **Compliance monitoring for within season closures- more demanding than monitoring for science. When applied to sub-ACLs, the costs skyrocket or precision evaporates!**
- **Enforcement ("got yea")- need and value unclear**
  - **i.e., how many cases have been made**
  - **Does the threat of enforcement bias scientific data?**

Monitoring discards: Design Principles

Data collection programs for the estimation of fishery discards should:

1. ***Be Fit for purpose***- Given in previous page. Needs should be quantified so that there are objective design criteria.
2. ***Affordable-*** Cost of data collection programs should not diminish net benefits regardless of who pays for them. Affordability shouldn't be a reason for ignoring essential data collection needs to assure conservation and sustainability, but it is a reason to seek less data intensive ways to assess and manage economically marginal fisheries.
3. ***Apply Modern Technologically-*** Old fashion technology of people on boats is not affordable for many fisheries and sectors, but that modern technology cannot yet provided all of the data that people provide. Needs a mixture of methods. Should reject or delay modern technology because it cannot support our current way of doing business.

Monitoring discards: Design Principles

Data collection programs for the estimation of fishery discards should:

4. **Incentivize Reliable Self Reporting-** Incentives come in the form of both "carrots" and "sticks." The "stick" to incentivize accurate logbooks might be a camera watching and that the risk of a random check of the video resulting in a large fine. The "carrot" for the industry to take responsibility for a results based program is that it is cheaper than a government program and/or it produces data that is more favorable.

5. Share Costs- Need a clear understanding of how costs will be shared in both the short and long term (rather than having determinations made year to year based on the vagaries of the budget process) and in terms of start-up costs and running costs.

1-4 Embraced by IFM Amendment

How good does discarded monitoring need to be?

- **Timeliness- In season management more demanding for science.**
- **Accuracy- Almost always necessary, but hard to assure.**
- **Precision- Is there any basis for current criteria of a CV of 30%?**
  - **Precise estimates more costly for rarely caught species**
  - **Sub-ACLs increase cost or reduce precision**
  - **Precision of discard estimates should be a function of:**
    a) **the magnitude of discards relative to landings**
    b) **vulnerability analysis of stocks**
       Is it overfished or depleted?
       Is it less productive than the target species?
    c) **value of the stock**
  - **Are these factors considered in current precision criteria???**

What about accuracy?

- **The focus is usually on precision because there are straightforward statistical methods for estimating it.**
- **Potential for bias**
  - **Is sampling representative or are some trips more likely to be sampled than others? We've heard YES! This is a processs/implementation problem that should be solvable.**
  - **Observer effect- Does the presence of observers change behavior such that catch and discards are different? Probably maybe. Does the multipurpose nature of at discard data collection (for science, compliance, and enforcement) increase the likelihood of an observer effect? Probably YES.**

Addressing an Observer Effect

- **Evidence of an Observer Effect: Differences between observed and un-observed trips**
  - **Does VMS indicate differences in area fished?**
  - **Are trips of different durations?**
  - **Is species composition of landings different?**
- **Risk factors for observer effect**
  - **Observer effect would not be detected by analysis above**
  - **Fishers have the capability of changing behavior to avoid discards (less likely for rare events)**
  - **There is a strong incentive to hide discards**
  - **Discards are a large source of mortality for the discard species**

Bottom line

- **Current approach to managing and monitoring discards is the product of numerous well intended decisions over several decades. This piecemeal evolutions is almost certainly sub-optimal with many unintended consequence.**
- **There are many strategic aspects of the design of a system for monitoring and managing discards. Compromises and tradeoffs are inevitable. However, the system design should be based on systematic analyses and logical arguments.**
- **The current approach should be maintained until a better approach is designed and agreed. This means parallel processes.**

External Review of NEFMC

Why Do It?

- **Performance Review is part of good institutional governance**
  - **All International RFMO are doing it, largely in response to a US push. Many are on their second round of reviews.**
  - **Learn from mistakes, build on successes.**

Highlight resource limitations and challenges

- **Limitations of stock assessments**
- **Lack of clarity and flexibility of NS1G**
- **Lack of technical support on Agency priorities (e.g., protection of forage species, MSE, review of allocation, etc**

External Review of NEFMC

Why Do It (continued)?

- **Learn from other FMCs**
  - **Challenge NMFS or GC "why we can't do it the way they do it?"**
  - **National meetings of Council Chairs and Exec. Directors not enough**
- **Learn from other countries**
- **Dispel NEFMC's bad wrap**
- **Lead the way for NMFS and other Councils**

Review Topics

- **Business practices**
  - **Committee organization**
  - **PDT approach**
  - **Priority setting**
  - **Northeast Coordinating Commity**
  - **Use of SSC**
- **Resources**
  - **Meeting time**
  - **Staffing**
  - **Stock assessments**
- **Adequacy of policies and ground rules: internal and externally imposed**
- **Overall performance**

Approach

- **Planning group to design review**
- **Composition of Review Panel, e.g.,**
  - **Executive Director of another FMC**
  - **Chair of another FMC**
  - **International manager**
  - **International scientist**
  - **US scientist from another region**
  - **Industry person from another region**
  - **eNGO rep. not working in NE**
- **“Independent” staff person to work with panel to prepare report**
- **Background documents for each of the topics**
- **Review meeting- 3 days open, 2 days private**
- **Program review report**
- **Program review action plan in response to report**

Time Table

Months	Activity
0-3	Form planning group, plan review
3-5	Recruit panel members, contract for independent staff
6	Conduct program review meeting
7-9	Finalize report
10-12	Prepare action plan in response to review

Research Set Asides

- **Overall a great success**
  - **Evidence that industry recognizes its responsibility for wise stewardship of public resources.**
  - **Highly productive. Much valuable scientific information produced.**
- **Perhaps suffering growing pains**
  - **Recent controversy over scallop awards**
  - **Questions raised about the "role" of RSAs relative to NMFS programs**
- **Is it time to assess and tune the program**
  - **RSAs are large research programs**
  - **There is a danger of under-valuing the resource; e.g., would Congress or a private company invest $15M annually in scallop research in addition of NMFS investments?**

Is the role of RSAs understood?

- **Replace traditional NMFS science (e.g., stock assessments)?**
- **Supplement traditional NMFS science for management of species that require non-traditional types of information (e.g., fine scale spatial data for area rotation)?**
- **Competitive science to balance influence of NMFS science (e.g., alternative stock assessments)?**
- **Enhance cooperation between fishing industry and NMFS scientists?**
- **Direct support for industry needs (not for science in support of management), such as research on grey meats**

How should research be procured?

- **Research grants**
  - **Inherently a competition of ideas and credentials**
  - **Produce an end to end product-ideas, design, implementation, analysis, reports and publications**
  - **Rigorous process, but not very transparent**
- **Contracts**
  - **Price competition based on past performance and experience performing similar services**
  - **Service to be performed and deliverables (e.g., data) specified by buyer (e.g., presumably as indicated by PDT)**
- **Cooperative Agreement- Initially competed like grants, but**
  - **Potentially the best of both allowing the procurement of ideas or services**
  - **Cooperative rather than competitive when it comes to individual projects**

- **Any procurement method will need to be adapted to pay with fish!**

Q: Are grants the best approach?

Important Scallop Research Set Aside Needs:

1. **Enhanced assessment and modeling capability**
   - **Need more depth. Scallops too important to be heavily dependent on "small team" of individuals**
   - **Scallops are important enough to invest in MSE (e.g., criteria for opening and closing areas, evaluation of survey design)**
   - **This research must be cooperative, not competitive**
2. **Survey design and implementation**
   - **Need a model based long term design to support rotational area management**
   - **Should depend on individual annual grants**
   - **The design process should be cooperative and transparent**
   - **Implementation should be according to the design with highly specified timely deliverables**

Answer: No