

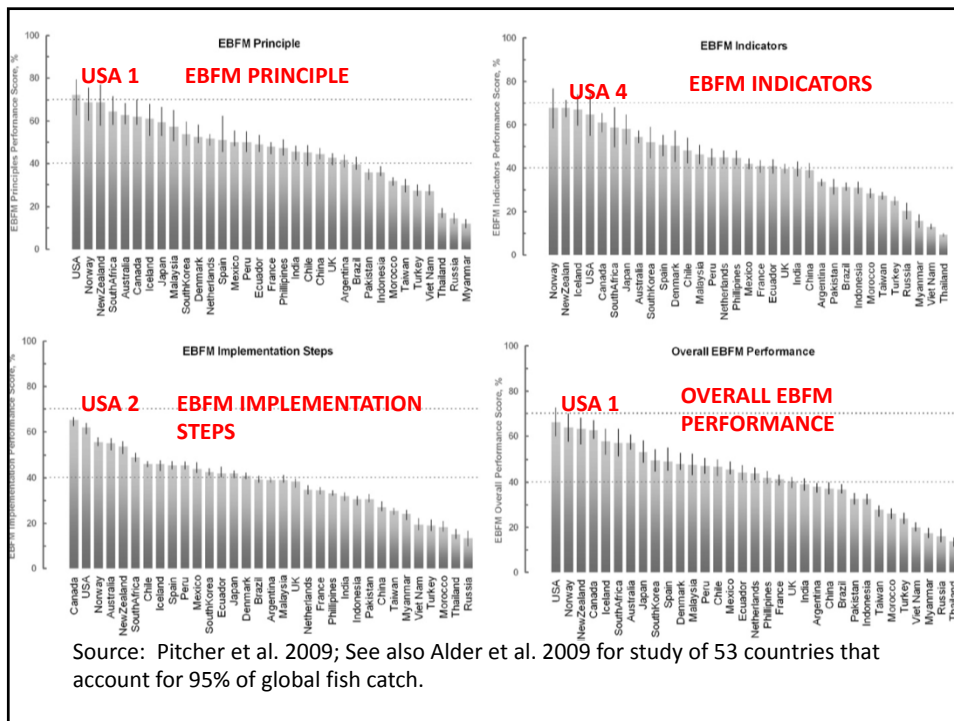
# Ecosystem Committee Workshop NPFMC

NPFMC APPROACH VS. OTHER  
COUNCIL REGIONS

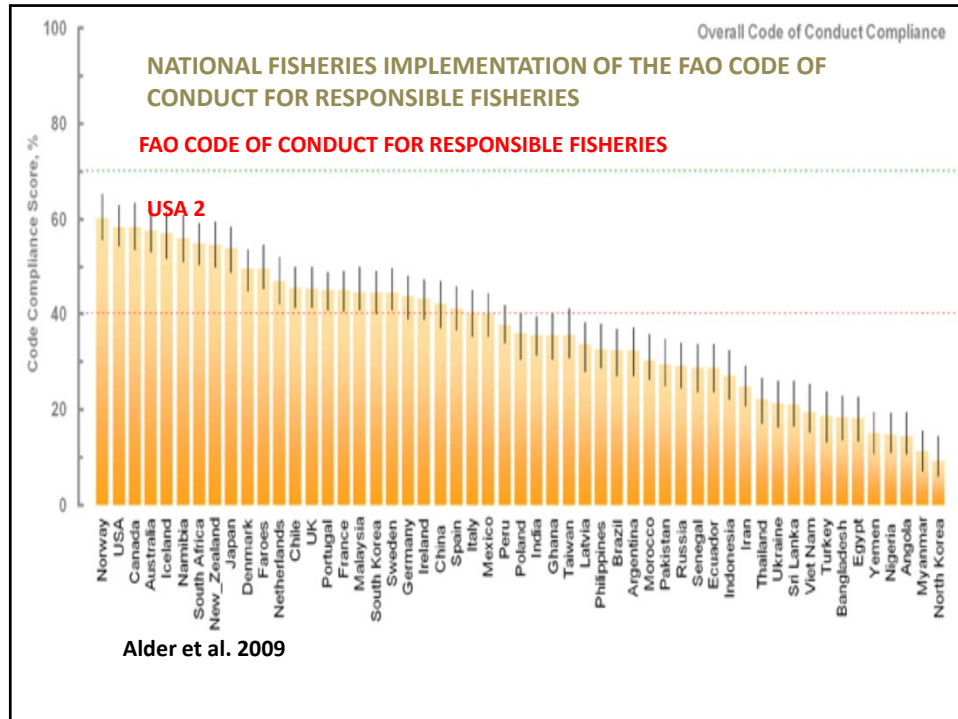
DAVID FLUHARTY

## GLOBAL challenge for fisheries management

“... emerging research is highlighting the danger of irreversible effects of current fisheries on overall ecosystems. These insights provide forceful arguments for a more precautionary approach to fisheries management, in which fishing is restricted to those places and amounts where it can be conducted safely and with minimal risk of jeopardizing the integrity of marine ecosystems.” Pikitch 2012.



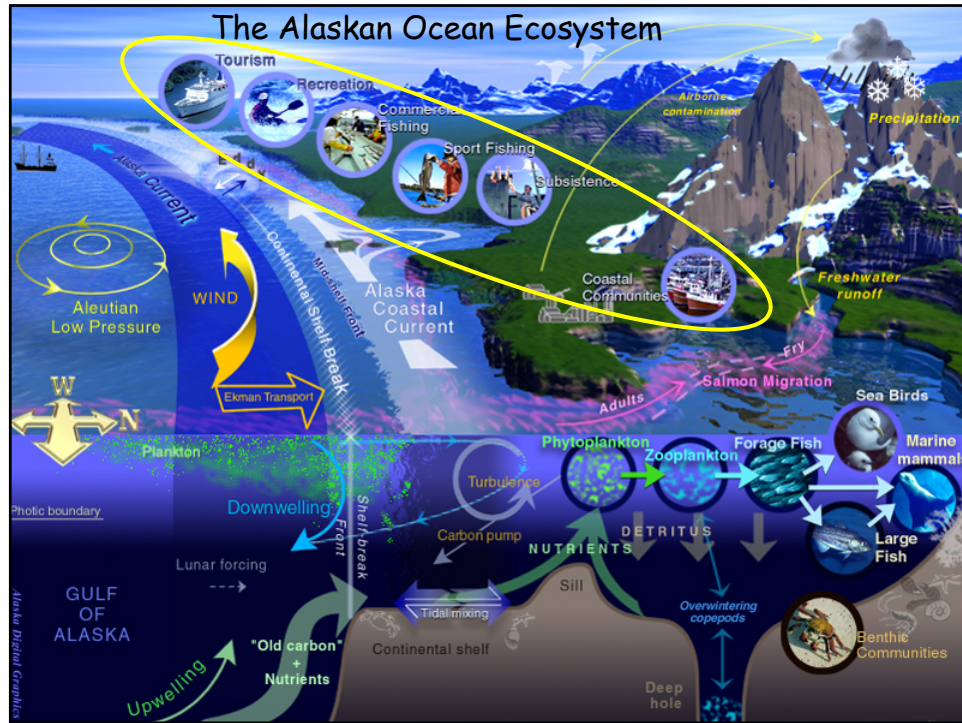
Source: Pitcher et al. 2009; See also Alder et al. 2009 for study of 53 countries that account for 95% of global fish catch.



## JASON LINK – SENIOR SCIENTIST FOR ECOSYSTEM MANAGEMENT, NMFS



IT'S NOT ABOUT ME BUT ABOUT THE FISHED ECOSYSTEM .  
LINK WANTS TO BE ITS CHAMPION LIKE MURAWSKI AND  
OTHERS BEFORE HIM



## PREFACE

- THIS PRESENTATION IS BASED ON A REPORT BEING DEVELOPED BY THE ECOSYSTEM SCIENCES AND MANAGEMENT WORKING GROUP OF THE NOAA SCIENCE ADVISORY BOARD
- REPORT EXAMINES 15 ACTIONS TAKEN BY COUNCILS TO DETERMINE PROGRESS TOWARD DEVELOPING ECOSYSTEM-BASED FISHERY MANAGEMENT
- ARE THERE IDEAS FOR NPFMC TO CONSIDER?

<b>"FLUHARTY" MATRIX</b>	Caribbean FMC	Gulf of Mexico FMC	Mid-Atlantic FMC	New England FMC	North Pacific FMC	Pacific FMC	South Atlantic FMC	Western Pacific FMC
Cease overfishing and develop rebuilding plans for overfished species.								
Delineate extent of ecosystem/interactions.								
Develop a conceptual model of the foodweb.								
Describe habitat needs of different life history stages of animals and plants in the "significant foodweb" and develop conservation measures.								
Calculate total removals including incidental mortality and relate to standing biomass, production, optimum yields, natural mortality and trophic structure.								
Does council assess how uncertainty is characterized and define what buffers against uncertainty are included in management actions?								
Has council set an ecosystem goal (s) and developed indices of ecosystem health as targets for management?								
Describe long-term monitoring data and how they are used.								
Assess the ecological, human and institutional elements of the ecosystem which most significantly affect the fisheries, and are outside Council/NMFS jurisdiction and define a strategy to address those influences.								
Is there a Fishery Ecosystem Plan/Fishery Management Plan employing EBFM?								
Does the Council have a lead entity designated to advance EBFM in the Council process?								
Are ecosystem models developed and available for use in the Council process?								
Are decision support tools for EBFM/trade-off analysis employed (e.g. management strategy evaluation, risk assessments, ecosystem indicators, scenarios)?								
To what extent are spatial management tools applied (besides EFH measures above) to accomplish EBFM?								
Other								

## APPROACH

- KEY ELEMENTS ARE ABSTRACTED HERE TO HIGHLIGHT DIFFERENCES IN COUNCIL APPROACHES TO ELEMENTS IN THE TABLE OF 15 ELEMENTS AND 8 COUNCILS**  
**IN ADDITION, POTENTIAL ROLE OF NMFS HEADQUARTERS IS DISCUSSED**

## Preview of Conclusions Re: NPFMC

- It is not clear that other Councils are in a position to advise NPFMC
- NPFMC is a leader in US EBFM implementation
- EBFM infuses NPFMC Council praxis through the Ecosystem SAFE documents more than other Councils but may still offer opportunities to increase utility.
- NPFMC is at cutting edge of EBFM but has multiple choices as to how to move ahead.

### 1. Cease overfishing and develop rebuilding plans for overfished species.

- BECAUSE NPFMC HAS NOT BEEN OVERFISHING [MINOR TECHNICAL EXCEPTIONS] THERE IS LITTLE TO GAIN FROM REVIEW OF OTHER COUNCIL PRACTICES.
- IT MAY BE OVERSTATING THE CASE BUT THE NPFMC APPROACH TO PACIFIC OCEAN PERCH REBUILDING MIGHT BE SEEN AS A MODEL FOR THE 2006 MSA AMENDMENTS –EXCEPT FOR THE TIMELINE WHICH WAS NOT SPECIFIED BUT A BIOLOGICAL TARGET WAS.

## 2. Delineate extent of ecosystem/interactions.

- NPFMC HAS ENDEAVORED TO DO THIS WITH RESPECT TO MSA AND HAS BEEN LARGELY SUCCESSFUL
- THE ISSUE FOR NPFMC AND OTHER COUNCILS IS THE MSA LIMIT OF APPLICATION TO THE 200 NM EEZ IN TERMS OF MANAGEMENT AUTHORITY. [HIGHLY MIGRATORY SPECIES A POSSIBLE EXCEPTION] – OVERALL NEED TO CONSIDER ECOSYSTEM INTERACTIONS BEYOND EEZ, E.G., POTENTIAL MIGRATIONS OF CRABS/ FISH AS A RESULT OF CHANGING CLIMATE

## 3. DEVELOP A CONCEPTUAL MODEL OF FOOD WEB[S]

- FOR THE NPFMC REGION THIS HAS BEEN DONE FOR EACH OF THE MANAGEMENT BS/AI/GOA REGIONS EXCEPT THE ARTIC OCEAN?
- APPROACHES BEING DEVELOPED BY EACH COUNCIL USE SIMILAR TOOLS BUT ARE UNIQUE TO THE SYSTEM.
- AS BEST I CAN DETERMINE FOOD WEBS ARE SEEN AS BACKGROUND INFORMATION IN COUNCILS AND ARE NOT USED TO INITIATE MANAGEMENT ACTIONS. COULD THERE BE WAYS FOOD WEBS COULD BETTER ADVISE MANAGEMENT ACTIONS?

#### 4. Describe habitat needs of different species at different life history stages and develop conservation measures

- THIS IS REQUIRED OF COUNCILS BY MSA WITH RESPECT TO ESSENTIAL FISH HABITAT [EFH].
- NPFMC HAS ESTABLISHED A PROCESS FOR CONSIDERATION OF EFH AND HAS TAKEN MULTIPLE ACTIONS.
- OTHER COUNCILS HAVE TAKEN SIMILAR ACTIONS TO NPFMC FOR EFH BUT AMONG ALL THERE IS A TENDENCY TO FOCUS ON SINGLE SPECIES OR RARE BIOGENIC HABITAT AS OPPOSED TO SYSTEMATIC EFFORT TO PROTECT REPRESENTATIVE SAMPLES OF ALL MARINE HABITATS. WOULD A MORE SYSTEMATIC APPROACH TO PROTECTION OF EFH BE ADVISED?

#### 5. Calculate total removals and relate to other conservation parameters

- NPFMC seems to be the only Council that does this systematically.
- I do not recommend any of the approaches of the other Councils as most lead to undesirable outcomes largely because they do not obtain information on by-catch.



## 6. Assessment of Uncertainty

- NPFMC has probably found as developed an approach to this topic as can be found elsewhere.
- Thus, the question is about broader institution of promoting risk assessments.

## 7. Ecosystem Goals and Indices of Ecosystem Health

- NPFMC has not done this
- No other Council has done this. [MAFMC Vision?]
- Something to do?

## 8. Long-term monitoring and use

- NPFMC does this to varying degrees with respect to managed species with non-managed species as “by-catch”
- No other Council specifies long term monitoring requirements.
- Is this something to do better

## 9. Assess Fish Management Stressors beyond Council control to address

- NPFMC uses tools at its disposal to comment on other agency actions affecting fisheries, e.g., under EFH, FWCA, NEPA, etc.
- MSA does not provide significant ability to control other stressors.
- In NPFMC area other stressors besides natural variability may be minimal?

## 10. Is there a FEP or FMP?

- NPFMC has FEP for Aleutian Islands.
- Other Councils [WPFMC, SAFMC] have developed EBFM in FMPs . Some others like PFMC have FEP for entire jurisdiction or are in the process of developing such approaches [NEFMC]
- Discuss. BSAI Groundfish SEIS/RIR

## Comprehensive Ecosystem Based Amendments – 8 FMPs



### COMPREHENSIVE ECOSYSTEM-BASED AMENDMENT 1 FOR THE SOUTH ATLANTIC REGION



AMENDMENT 6 TO THE FISHERY MANAGEMENT PLAN FOR THE SEEDING FISHERY OF THE SOUTH ATLANTIC REGION  
 AMENDMENT 19 TO THE FISHERY MANAGEMENT PLAN FOR THE COASTAL MEGALOTRY PELAGIC RESOURCES IN THE ATLANTIC AND GULF OF MEXICO  
 AMENDMENT 8 TO THE FISHERY MANAGEMENT PLAN FOR CORAL, CORAL REEFS, AND LIVE HARBOURTON HABITATS OF THE SOUTH ATLANTIC REGION  
 AMENDMENT 4 TO THE FISHERY MANAGEMENT PLAN FOR THE GOLDEN CRAB FISHERY OF THE SOUTH ATLANTIC REGION  
 AMENDMENT 9 TO THE FISHERY MANAGEMENT PLAN FOR SPINY LOBSTER IN THE GULF OF MEXICO AND SOUTH ATLANTIC  
 AMENDMENT 1 TO THE FISHERY MANAGEMENT PLAN FOR THE DOLPHIN WAHOO FISHERY OF THE ATLANTIC  
 AMENDMENT 19 TO THE FISHERY MANAGEMENT PLAN FOR THE SNAPPER GROUPER FISHERY OF THE SOUTH ATLANTIC REGION

(INCLUDING A FEIS, IRFA, FRIR & FSEA/FES)

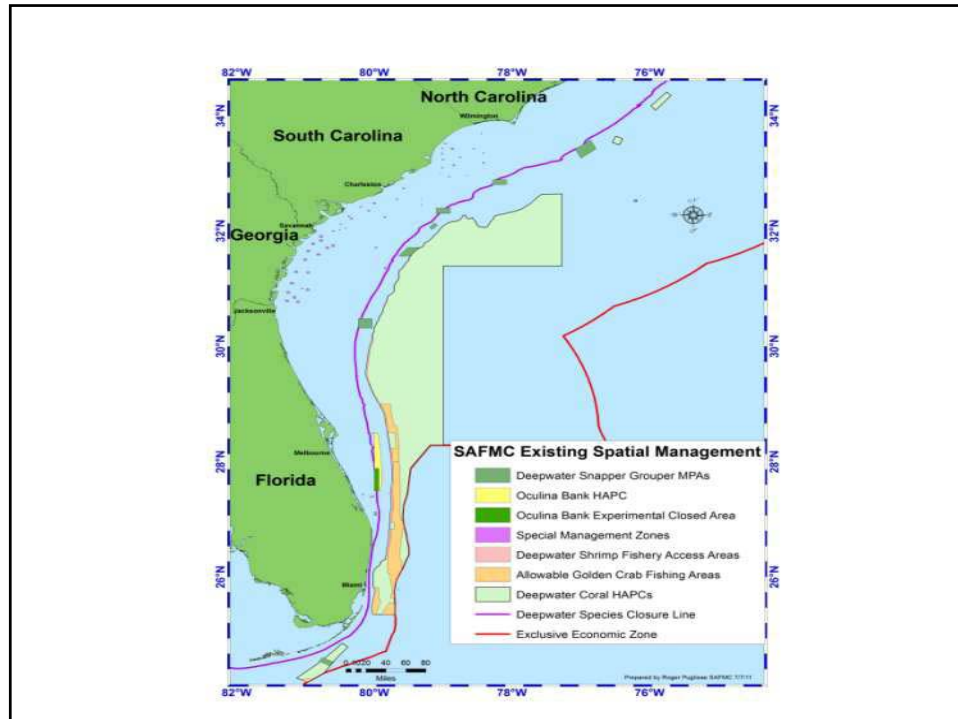
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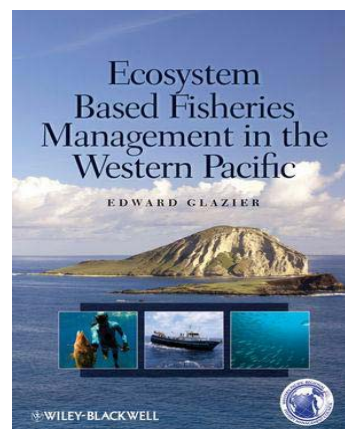


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## Progress Towards EBFM in the Western Pacific Council

1. 1990s- early 2000s NMFS & EPAP reports on EAFM
2. 2004: Coral Reef Fisheries Ecosystem Plan
3. 2004-2007 Biological, Social Science, Policy Workshops on EBFM
4. 2010 Workshops encapsulated in book
5. 2009-2010 Council Transformation of FMPs by species group to Archipelagic FMPs



## 11. Is there a lead entity for ecosystems in a Council region?

- NPFMC uses the Ecosystem Committee
- Other Councils use SSC, Council Committees, etc.
- Use what works but provide a clear directive as to the expectations.

## 12. Ecosystem Models

- NPFMC has available some of the most tested and sophisticated ecosystem models .
- Over all question is how to incorporate the ecosystem models into a management framework.
- This requires, I think, a working group at the relevant ecosystem scale bringing together all parties [hopefully relevant] to begin discussion of how models and scenario developments can be made operational.

### 13. Are decision support tools available?

- NPFMC has available probably the most sophisticated tools but it is not clear they are being utilized [as a result of MSA requirements]
- Councils appear reluctant to lend credence to automatic thresholds for single species and have not much experience with multi species trade offs.
- There is a lot of room to discuss how this discussion might benefit fisheries management [this Workshop being no exception].

### 14. To what extent are spatial management tools applied?

- NPFMC uses many spatial management tools as outlined in the report from the spatial management workshop but can use more
- Other Councils are not particularly advanced relative to NPFMC
- A key question is how Council fisheries can interface with [Coastal] Marine Spatial Planning as expected in the Presidential Executive Order 2010 on CMSP and subsequent developments?

## 15. Other

- This can be a category like no other, e.g., NPFMC ecosystem caps on total removals in the BSAI and GOA. This could be the single most important management measure or it could be a detriment, i.e., limiting harvests below Allowable Biological Catch [Hilborn testimony to Congress on MSA reauthorization last week.]
- This needs to be addressed from an ecosystem perspective [retrospective analysis of the caps on total removals vs. other approaches – which is more robust to maintaining harvests?]

## 15. Other

## Conclusions

- It is not clear that other Councils are in a position to advise [EBFM FMP / Visioning –Strategy]
- NPFMC is a leader in US EBFM implementation
- EBFM infuses NPFMC Council praxis through the Ecosystem SAFE documents more than other Councils but may still offer opportunities to increase utility.
- NPFMC is at cutting edge of EBFM but has multiple choices as to how to move ahead.

## Moving Ahead

- What ecosystem are we managing for?
- What are the limits of acceptable change in fished ecosystems?
- How are ecosystem trade-offs evaluated?



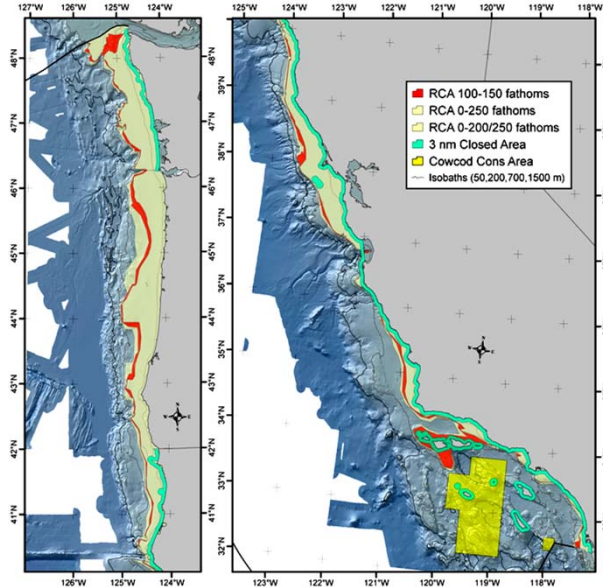
# Gulf of Mexico Hypoxia Zone

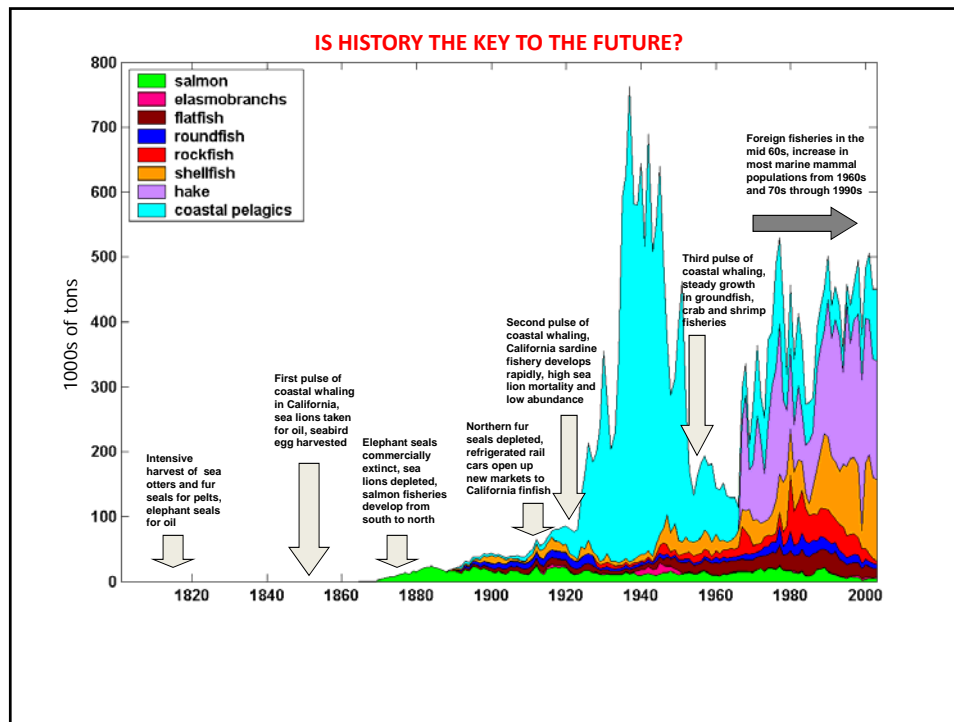


UNIQUE ECOSYSTEM CHALLENGES

# Trawl Closure Areas – [Rockfish]

MONITORING EFFECTS OF MANAGEMENT MEASURES





## Other experiences

- Greater use of Risk Based Management
- Management Strategy Evaluation
- Forecasts/ climate change
- Ecosystem Fisheries Modeling
  - Scenario Building

## What's Needed?

- Clear EBFM Goal? – Change needed?
- Systematic monitoring to show progress toward an ecosystem goal
- Trade-off analysis missing [fish/biodiversity]/ not transparent
- Training of staff/council/NGOs/fishing communities about EBFM
- Forecasting – Climate Change/Ocean Acidification
- Link up with IEA/ Coastal and Marine Spatial Planning
  - ]NPFMC Spatial Management of Fisheries Workshop]

## NPFMC Ecosystem Goal

- 1. Maintain biodiversity consistent with natural evolutionary and ecological processes, including dynamic change and variability
- 2. Maintain and restore habitats essential for sh and their prey
- 3. Maintain system sustainability and sustainable yields for human consumption and non-extractive uses
- 4. Maintain the concept that humans are components of the ecosystem