NMFS Science Working Groups

- WG1 – Methods for ABC that account for uncertainty
- WG2 – Update of National Standard 2 Guidelines
- WG3 – Criteria for evaluating vulnerability of stocks to effects of fishing

WGs and Timeline

- Each Science Center and some regional offices have representatives on each of these WG
- Several members are also on SSCs
- Each WG is active now
- Draft reports are targeted by end of the year
- Products and reports will be aligned with the final NS1 Guidelines

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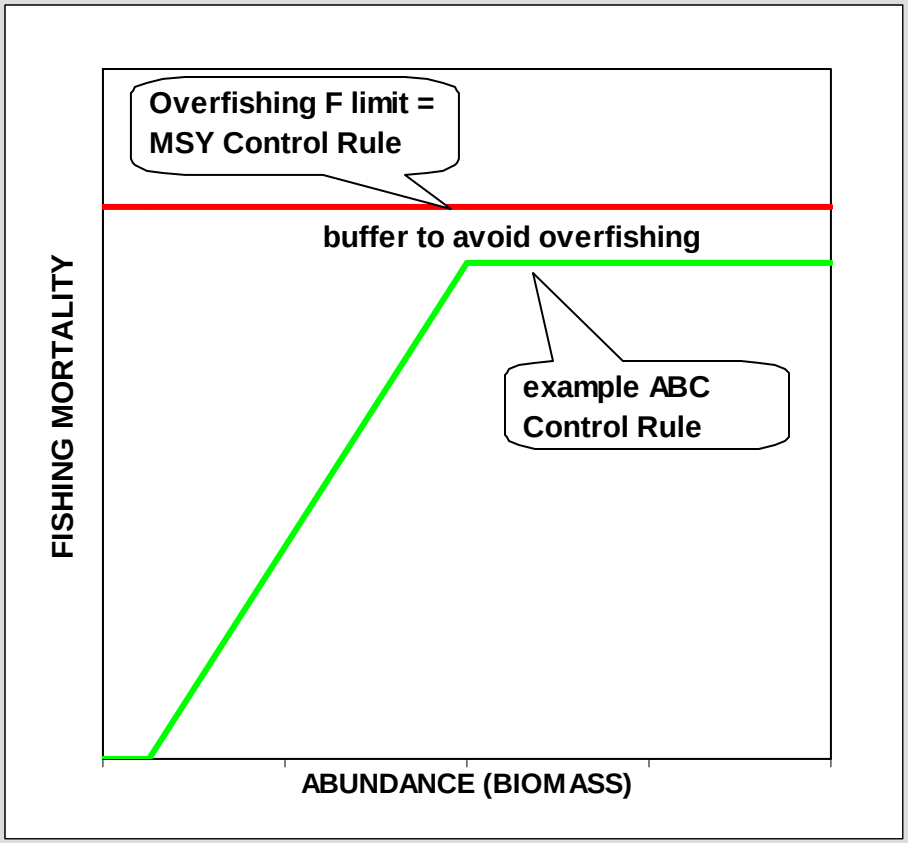
WG1 – ABC Control Rule



- Control rules to calculate target and limit catch levels were key feature of 1998 Technical Guidance and have been implemented by many Councils
- WG1 will focus on demonstrating methods for quantifying uncertainty to calculate the chance that overfishing will occur

Work Group 1 – Control Rules

- **Leader:** Richard Methot (HQ/S&T)
- **AKFSC:** Grant Thompson, Dana Hanselman
- **NEFSC:** Elizabeth Brooks
- **NWFSC:** Melissa Haltuch, Jim Hastie
- **PIFSC:** Pierre Kleiber, Minling Pan
- **SEFSC:** Mike Prager, Kyle Shertzer, Victor Restrepo
- **SWFSC:** Alec MacCall, Paul Crone, Michael O'Farrell
- **S&T:** David Tomberlin

WG1 – Uncertainty & ABC

- MSY, MFMT, OFL – best estimates of limits, but all have uncertainty
- ABC – level of catch which has acceptable level of risk of exceeding the true, but imperfectly known, overfishing level
- ACT – target level of catch that also accounts for management uncertainty

WG1 – Topics

- Elucidate factors that contribute to scientific uncertainty
- Proxies for unmeasured uncertainty
- Overview of current Control Rule implementations
- Management Strategy Evaluation: quantifying the expected outcome of applying a control rule
- Quantitative, probability based methods for calculating target catch with known Pr(overfishing)
- Data-limited approaches
- OY –discussion regarding accounting for social, economic and ecological factors

WG2 – SSCs and Peer Reviews

- ANPR seeking comment through Dec. 17 on aspects of National Standard 2 that need revision per MSRA
- Issues:
  - Content of SAFE with regard new requirements for SSC statement of fishing level recommendations
  - Guidance as to what constitutes “best scientific information available.”
  - Definition of peer review process and its relationship to SSCs

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The NS2 Work Group

- **Co-Leaders:** Heidi Lovett (HQ/OSF) and William Michaels (S&T)
- **AKFSC:** Pat Livingston, Martin Dorn
- **NEFSC:** Jim Weinberg
- **NWFSC:** Elizabeth Clarke, Stacey Miller
- **PIFSC:** Gerard Dinardo, Stewart Allen
- **SEFSC:** Erik Williams, Jim Berkson, Clay Porch
- **SWFSC:** Ray Conser

NS2 - SAFE

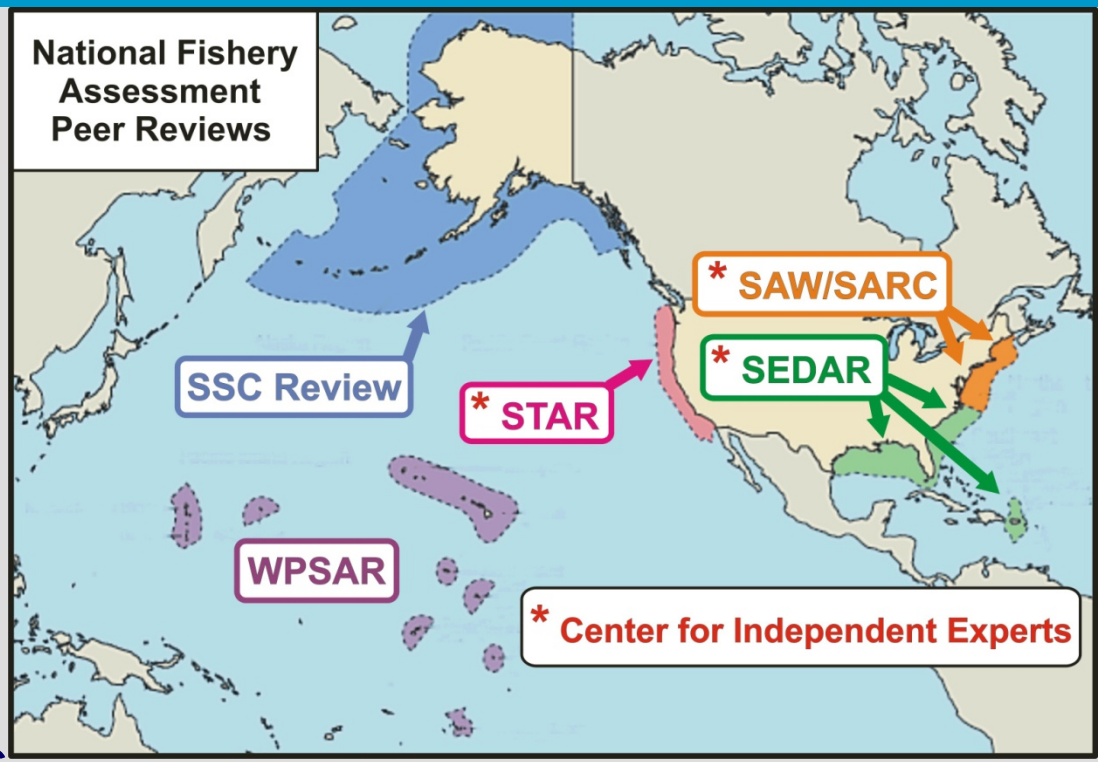
- Stock Assessment and Fishery Evaluation
- Current NS2 Guidelines describe expected technical content of SAFE
- Silent on role of SSC as either author or reviewer
- With SSC now required to state the Fishing Level Recommendations based on best science available, the NS2G should be revised to identify the SAFE's role in providing info to the SSC and in documenting the fishing level recommendations

NS2 – Best Science

- NS2: Conservation and management measures shall be based upon the Best Scientific Information Available.
- But B.S.I.A. is not defined
- Improving the Use of the 'Best Scientific Information Available' Standard in Fisheries Management (NRC, 2004)
- Many NRC recommendations already practiced by NMFS &Councils; which need guidance in NS2G?

NS2 – Peer Review

- Secretary and each Council may establish a peer review process … deemed to satisfy IQA
- Obvious relation to BSIA
- NS2 could:
  - Define characteristics of good peer review process
  - Clarify relationship to SSC



WG3 – Vulnerability Evaluation

- Guidance on evaluating vulnerability of a species to a specific fishery
- Goal:
  - prioritize assessment and monitoring efforts
  - organize stocks into complexes
- Involves:
  - Susceptibility: potential for capture and mortality in the fishery
  - Productivity: potential to resist depletion due to fishing mortality

The Vulnerability Evaluation Work Group

- **Co-Leaders:** Wesley Patrick (HQ/OSF) and Paul Spencer (AKFSC)
- **AKFSC:** Olav Ormseth
- **NEFSC:** Jason Link and Bill Overholtz
- **NWFSC:** Pete Lawson and Jason Cope
- **PIFSC:** Keith Bigelow and Don Kobayashi
- **SEFSC:** Enric Cortez and Todd Gedamke
- **SWFSC:** John Field

Goals and Objectives

Goal – Provide guidance on how to determine the vulnerability of a stock to a fishery.

Objectives:

1) Provide a practicable and useful tool for evaluating the vulnerability of a stock becoming overfished
2) The tool should follow a consistent methodology but also be flexible in its use
3) The tool should be capable of evaluating a stock's vulnerability at a suitable resolution to allow classification into a relatively narrow category of risk.

Productivity-Susceptibility Assessment (PSA)

- First developed to assess the vulnerability of bycatch becoming overfished in the Australian prawn fishery (Stobutzki et al. 2001).
- Vulnerability is a combination of the stocks productivity and its susceptibility to the fishery.
  - High Vulnerability: Low productivity and high susceptibility
  - Low Vulnerability: High productivity and low susceptibility
- Users score 22 attributes (10 productivity; 12 susceptibility) to determine the productivity and susceptibility of a stock, ranging from 1 to 3.
- Users also score the data quality used in scoring the productivity and susceptibility attributes to identify data poor stocks, ranging from 1 to 5.

PSA Attributes

Productivity Attributes:

r

Maximum Age

Maximum Size

Von Bertalanffy Growth Coefficient

Estimated M

Measured Fecundity

Breeding Strategy

Recruitment Pattern

Age at Maturity

Mean Trophic Level

Susceptibility Attributes:

Management Strategy

Areal Overlap

Geographic Concentration

Vertical Overlap

Fishing Rate Relative to M

Biomass of Spawners (SSB) or Other Proxies

Seasonal Migrations

Schooling/Aggregation and Other Behavioral Responses

Morphology Affecting Capture

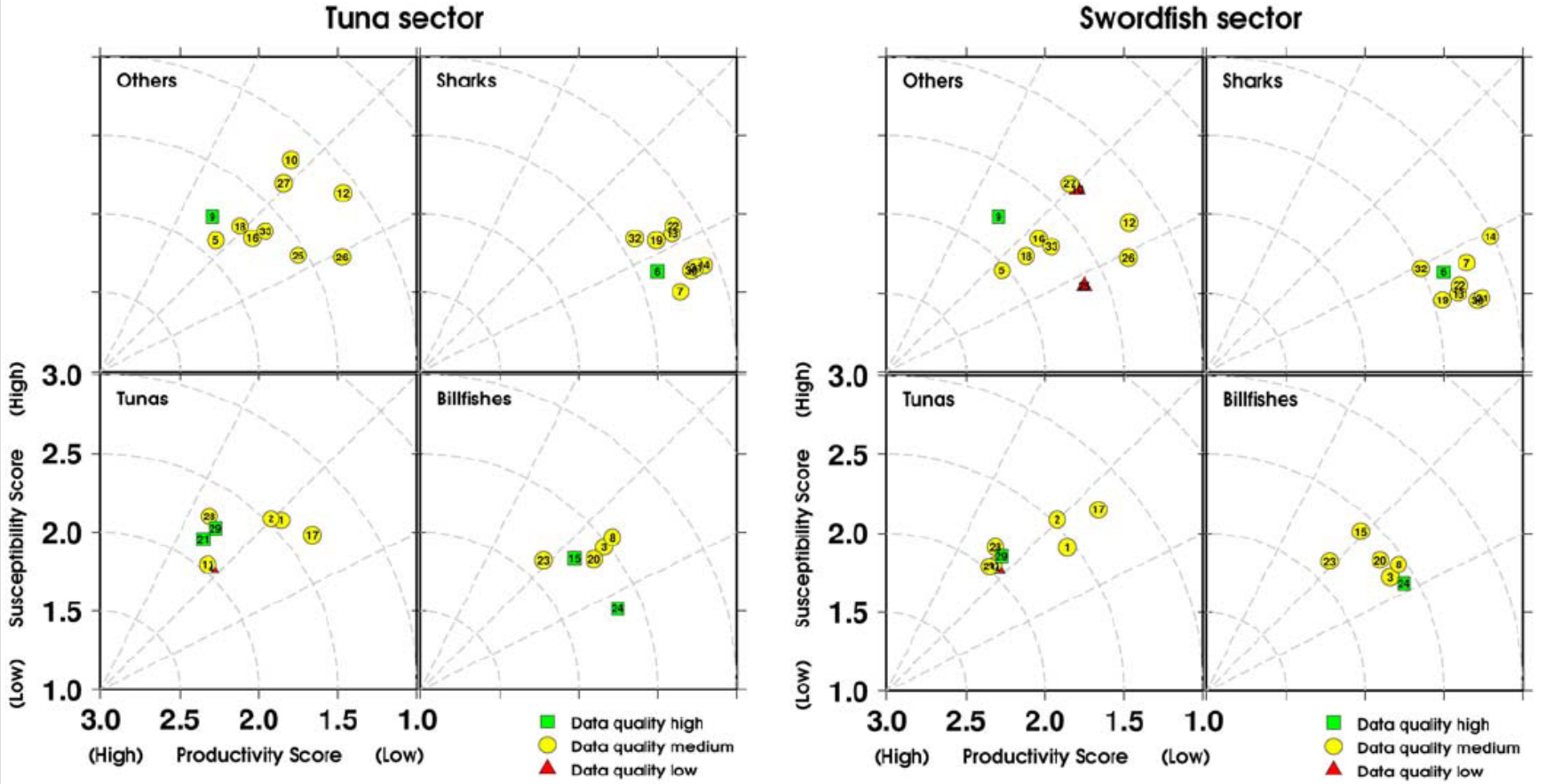
Survival After Capture and Release

Desirability/Value of the Fishery

Fishery Impact to EFH

PSA: X-Y Plots

Figure 1. PSA scatterplots for the two longline fishery sectors. Symbol type and color are indicative of mean weighted data quality for PSA attributes. Stock IDs corresponding to Tables 1-2 are indicated within each symbol. Points were jittered at ±0.05 in both attribute scores for plotting purposes.



Current Plans

- Work Group expects to have a final report by December 2008.
- The report will include several case studies:
  - Northeast Groundfish
  - Atlantic Shark Complexes
  - Snapper-Grouper Bycatch Species
  - California Current Coastal Pelagics
  - California Nearshore Groundfish
  - BSAI Skate Complexes
  - Hawaii Pelagic Long-line Fishery
- Possible technical guidance process to follow