Science, Service, Stewardship

Agenda Item G.1.b
Supplemental NWFSC Presentation 1
April 2019

Groundfish Science Report

Jim Hastie

Northwest Fisheries Science Center

April 13, 2019

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Overview

- Survey and Assessment Updates
- Quota Share Owner Survey
- 5-year Catch Share Review Publications
- Other Recent Publications

Survey and Assessment Updates

Bottom-Trawl Survey

- Only two vessels will be used in 2019.
- Survey will start on May 23rd in Newport.

Acoustic-Trawl Hake Survey

- Survey will begin on June 13th.

Assessment & Reviews

- A successful pre-assessment workshop review of data and methods for most 2019 assessments was hosted at the PFMC office
- Cabezon STAR in Newport, May 6-10
- Longnose and Big Skate STAR in Seattle (NWFSC), June 3-7

Quota Share Owner Survey

Overview

- In response to concerns raised during the 5-year review:
  - Incomplete knowledge of who is receiving quota payments
  - Incomplete knowledge of the magnitude of quota payments
- Council adopted the following:
  - “Collect QS owner information through the most efficient and effective means, as determined by NMFS.” as their FPA (November 2018).

Timeline

- June 2019: Erin Steiner will present a draft survey instrument to GAP and GMT
- Summer/Fall 2019: Conduct focus groups
- Summer 2020: Field first survey

5-Year Catch Share Review Research Published

Special issue of *Coastal Management*, 2018, Vol. 46, No. 6

Outcomes of the West Coast Groundfish Trawl Catch Share Program: The First Five Years. Pfeiffer L.

Shorebased Processor Outcomes Under Catch Shares. Guldin, M., A. Warlick, M. Errend, L. Pfeiffer, E. Steiner.

Economic Outcomes for Harvesters under the West Coast Groundfish Trawl Catch Share Program: Have Goals and Objectives Been Met? Errend, M., L. Pfeiffer, E. Steiner, M. Guldin, and A. Warlick. E

Implementation Challenges for Quota Set-Asides: Policy Analysis to Inform Fisheries Management Decision-Making. Naranyi S. and A. Warlick.

Crew in the West Coast Groundfish Catch Share Program: Changes in Compensation and Job Satisfaction. Steiner, E., S. Russell, A. Vizek.

Adapting to Catch Shares: Perspectives of West Coast Trawl Participants. Russell, S., M. Van Oostenburg, A. Vizek.

Using Incentives to Reduce Bycatch and Discarding: Results Under the West Coast Catch Share Program. Somers, K., L. Pfeiffer, S. Miller, W. Morrison.

Other Recent Publications

"Character of temporal variability in stock productivity influences the utility of dynamic reference points"

Aaron M. Berger

Fisheries Resource and Monitoring Division, NWFSC, NMFS-NOAA, 2032 S.E. OSU Drive, Newport, OR, 97365

Fisheries Research (Accepted 27 November 2018)

"Character of temporal variability in stock productivity influences the utility of dynamic reference points"

- Comparison of stock status estimates using traditional unfished biomass (Static $B_{0)}$ and Dynamic- B_0 approaches
- Empirical Results:
  - Generally small differences (< 10%) between alternative indicators of stock status, but a few exceptions:
    - Bocaccio status: 37% (static), 77% (dynamic)
    - Pacific hake status: 80% (static), 61% (dynamic)
- Simulation Results:
  - Productivity trends, paired with large changes in catch, produced the largest differences between approaches.
  - Uncertainty from incorrectly identifying changes in stock productivity generally outweighed that from initial equilibrium conditions

Other Recent Publications

"Unraveling the recruitment problem: A review of environmentally-informed forecasting and management strategy evaluation"

M.A. Haltuch[a], E.N Brooks[b], J. Brodziak[c], J.A. Devine[d], K.F. Johnson[a,e], N. Klibansky[f], R.D.M. Nash[d], M.R. Payne[g], K.W. Shertzer[f], S. Subbey[d], B.K. Wells[h]

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[d] Institute for Marine Research, Bergen, Norway
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[f] Southeast Fisheries Science Center, NMFS, NOAA, Beaufort, NC, United States
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[h] Southwest Fisheries Science Center, NMFS, NOAA, Santa Cruz, CA, United States

Haltuch, et al., is:

A review evaluating progress towards implementing environmental factors in stock-recruitment projections and Management Strategy Evaluations

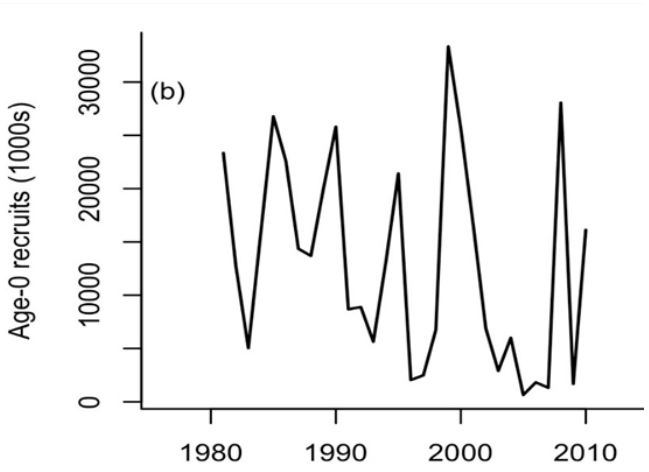
Factors affecting analytical success in identifying environmental drivers of recruitment:

- Species with a short pre-recruit survival window (e.g., opportunistic life-history strategy).
- Species with life history bottlenecks during which the environment can exert a well-defined pressure (e.g., anadromous fishes, those reliant on nursery areas).

Future research recommendations are provided.

Other Recent Publications

“Oceanographic drivers sablefish recruitment in the Northern California Current ”



Tolimieri N.[1], Haltuch M.A.[1], Lee Q.[3], Jacox, M.G.[4,5] , Bograd, S.[4]

[1]Fishery Resource Analysis and Monitoring Division, Northwest Fisheries Science Center, National Marine Fisheries Service

[2]Conservation Biology Division, Northwest Fisheries Science Center, National Marine Fisheries Service

[3]Univeristy of Washington, School of Aquatic and Fishery Sciences, Seattle, WA, 98195, USA

[4]Environmental Research Division, Southwest Fisheries Science Center, National Marine Fisheries Service

[5]Institute of Marine Sciences, University of California Santa Cruz

Oceanographic drivers explain ~57% of the variability in sablefish recruitment

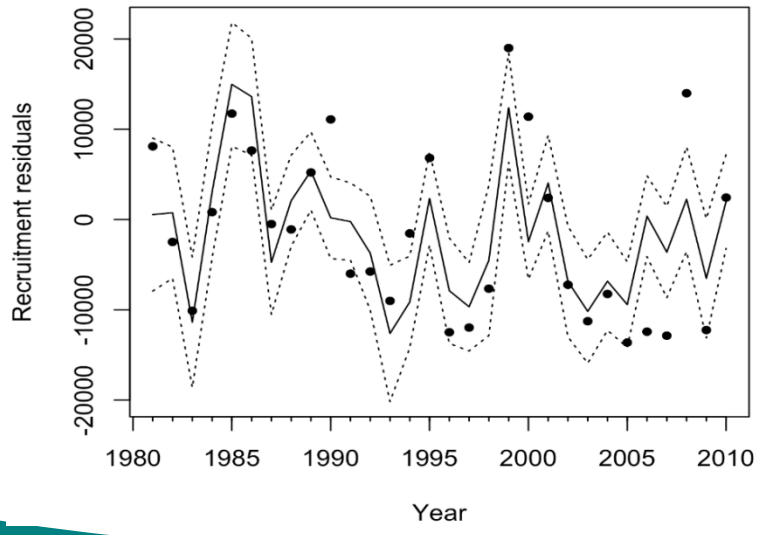
The estimated relationship can be used to:

Hindcast - recruitment during periods lacking age and length data

Nowcast - recruitment in the current assessment year where survey data are not available

Short-term forecast of recruitment ~ 1 year ahead if oceanographic covariates can be forecasted using ocean models

Long-term forecast of recruitment using Global Climate Models



Female preconditioning (50-1200 m)

(-) DD_{pre}

Cold water is associated with higher system productivity and lower metabolic costs making more energy available for reproduction

Eggs (300-825 m)

(+) CST_{egg}

Onshore transport maintains larvae near settlement habitat

(+) DD_{egg}

Faster development in warm water

Pelagic larvae (surface waters)

(-) DD_{larv}

Cold water is associated with higher system productivity and lower chance of starvation

Pelagic larvae (surface waters)

(-) DD_{larv}

Cold water is associated with higher system productivity and lower chance of starvation

Partial residual plots

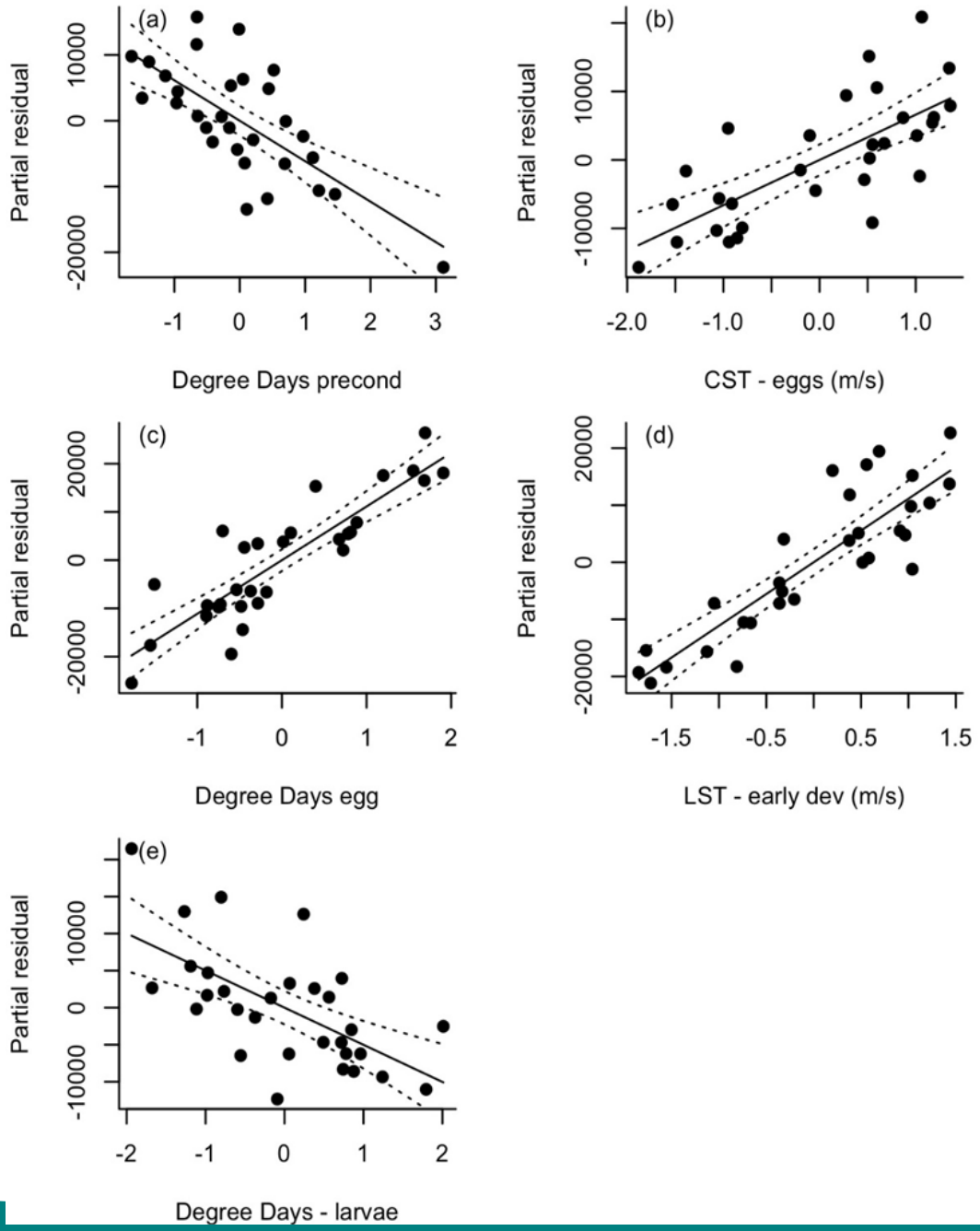
(-) DD_{pre}– cold water = more food; lower metabolic costs and more energy for reproduction

(+) CST_{edev}– onshore transport = retention near settlement habitat

(+) DD_{egg}– warm water = faster development

(+) LST_{edev}– northerly transport = transported north to food

(-) DD_{larv}– warm water = starvation overcomes faster growth rate



“Closing the feedback loop: On stakeholder participation in management strategy evaluation”

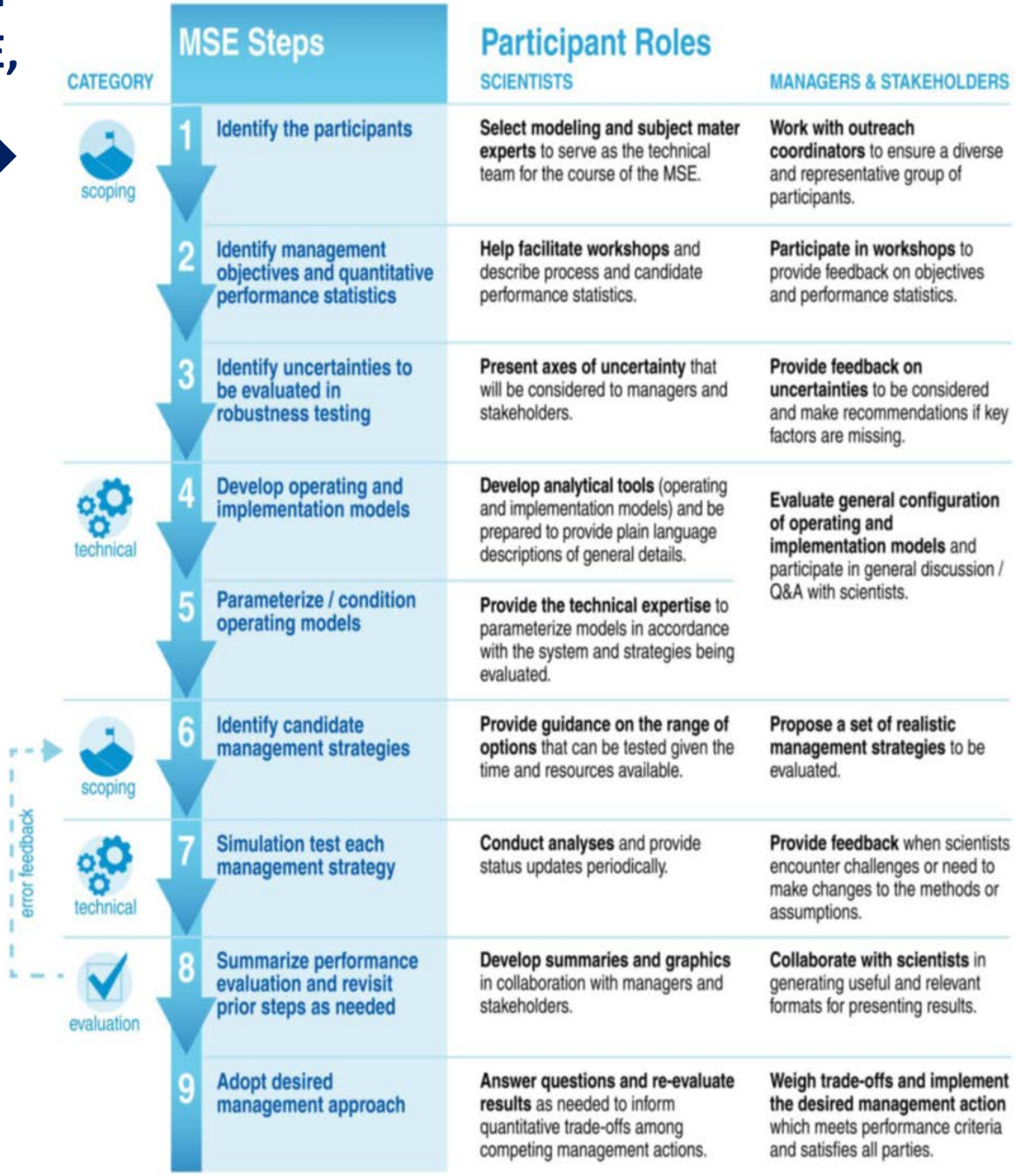
Daniel Goethel[1], Sean Lucy[2], Aaron Berger[3], Sarah Gaichas[2], Melissa Karp[4], Patrick Lynch[4], John Walter[1], Jonathan Deroba[2], Shana Miller[5], Michael Wilberg[6]

[1] NOAA-Southeast Fisheries Science Center; [2] NOAA-Northeast Fisheries Science Center; [3] NOAA-Northwest Fisheries Science Center; [4] NOAA-Office of Science and Technology; [5] The Ocean Foundation; [6] University of Maryland Center for Environmental Science

Canadian Journal of Fisheries and Aquatic Sciences
(Accepted 18 November 2018)

The role of each of the main participant groups in an MSE, at each stage

- Lessons learned from three recent MSE processes that explicitly involved stakeholders (Atlantic tunas, Atlantic herring, and eastern oysters)
- Suggestions for improving stakeholder engagement
- Communication tactics and responsibilities
- Use of hierarchical communicative structures (e.g., councils and fishing representatives/coops)



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Questions?

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