Science, Service, Stewardship

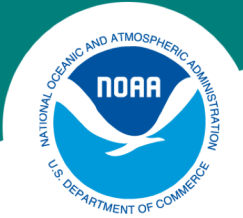# Groundfish Science Report

Michelle McClure

Northwest Fisheries Science Center
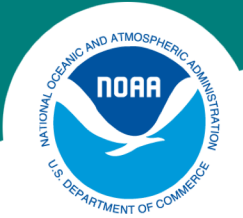
November 04, 2018

NOAA FISHERIES SERVICE

NWFSC NORTHWEST FISHERIES SCIENCE CENTER

Overview

- Hake At-Sea Research

- STAR Panel Updates

- Recent Publications

At-sea Investigations

2018 research cruise
Aug 19- Sept 14, FSV Bell M. Shimada

Completed research:

1. Simrad EK80 & comparison with EK60
- Tested and calibrated EK80 echosounders
- EK80 will be used for 2019 survey
- Contributing to NOAA Technical Memo

2. Comparison of Reuben Lasker & Saildrone transects
- Data analysis ongoing

3. Compared trawl codend liners (32 & 7 mm)
- Ship technical issues reduced effort
- Analyzing catch, lengths, net attributes

4. Evaluated increasing efficiencies
- Electronic data collection

STAR Panel Updates

Minor revision in July 2019 STAR Panels

- A potential conflict for the sablefish STAT with the adopted STAR Panel dates was identified after the June Council meeting.

- Following discussion with Council and SWFSC staff, we are proposing to swap dates for the adopted July STAR panels:

| | Adopted in June | | Revised |
Species	Dates	Location	Dates
Gopher rf/ black-&-yellow rf and Cowcod	7/8-7/12/19	Santa Cruz, CA	7/22-7/26/19
Sablefish	7/22-7/26/19	Seattle, WA	7/8-7/12/19

Science Updates: Recent Publications
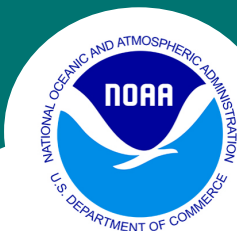
Shark Interactions With Directed and Incidental Fisheries in the Northeast Pacific Ocean: Historic and Current Encounters, and Challenges for Shark Conservation
(*Book Chapter*)

Jackie King[1], Gordon McFarlane[1], **Vladlena Gertseva[2]**, Jason Gasper[3], Sean Matson[4], Cindy A. Tribuzio[5]

[1]Fisheries and Oceans Canada, Nanaimo, BC;
[2]Northwest Fisheries Science Center, National Marine Fisheries Service, Seattle, WA;
[3]Alaska Regional Office, National Marine Fisheries Service, Juneau, AK;
[4] West Coast Regional Office, National Marine Fisheries Service, Seattle, WA;
[5] Auke Bay Laboratories, National Marine Fisheries Service, Juneau, AK.

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Highlights:

Commercial and recreational fisheries :

— Highest catch in '40s

— Generally higher in Canada than US

Identified conservation challenges for shark management, namely the need for:

— Accurate catch statistics,

— Stock delineation,

— Life history parameter estimates,

— Improved assessments methods of population status and trends.

Addressing these challenges are crucial for stock assessment and long-term sustainability of shark species.
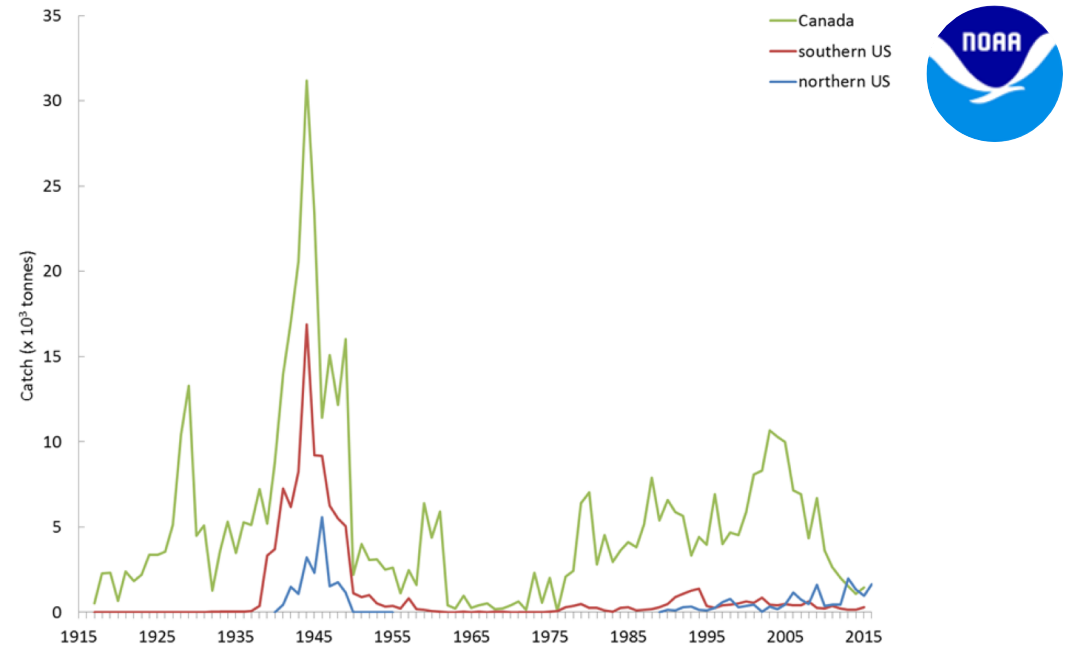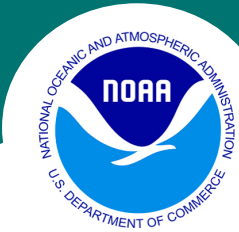

Pacific spiny dogfish catch (landings and discards) for Canada, southern US waters (California, Oregon and Washington) and northern US waters (Alaska).
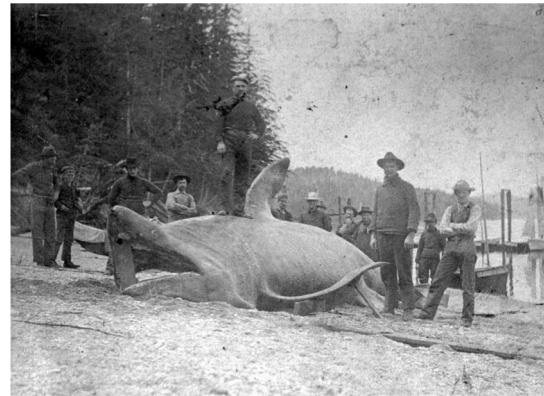
Left: Basking shark caught by fishermen in Rivers Inlet, BC, Canada, July 1901.

Right: Pacific spiny dogfish shark bycatch in mid-water trawl gear from the Pacific hake fishery in southern US waters.

The benefits and risks of incorporating climate-driven growth variation into stock assessment models, with application to Splitnose Rockfish (*Sebastes diploproa*)

Lee Qi[1], **James Thorson**[2], **Vladlena V. Gertseva**[2], Andre Punt[1]

[1] School of Aquatic & Fishery Sciences, University of Washington, Seattle, WA, USA

[2] Fisheries Resource Assessment and Monitoring Division, Northwest Fisheries Science Center, National Marine Fisheries Service, NOAA, Seattle, WA, USA

Highlights:

- Explored outcomes of using an annual growth variation index in stock assessment models.
- Found that including **a well-informed, properly specified growth index** in the simulated assessment could **increase precision and reduces** bias of parameter estimates.
- Also found that including an **erroneous index** led to **highly imprecise estimates** when growth was strongly climate-driven (Right panel, Figure below).
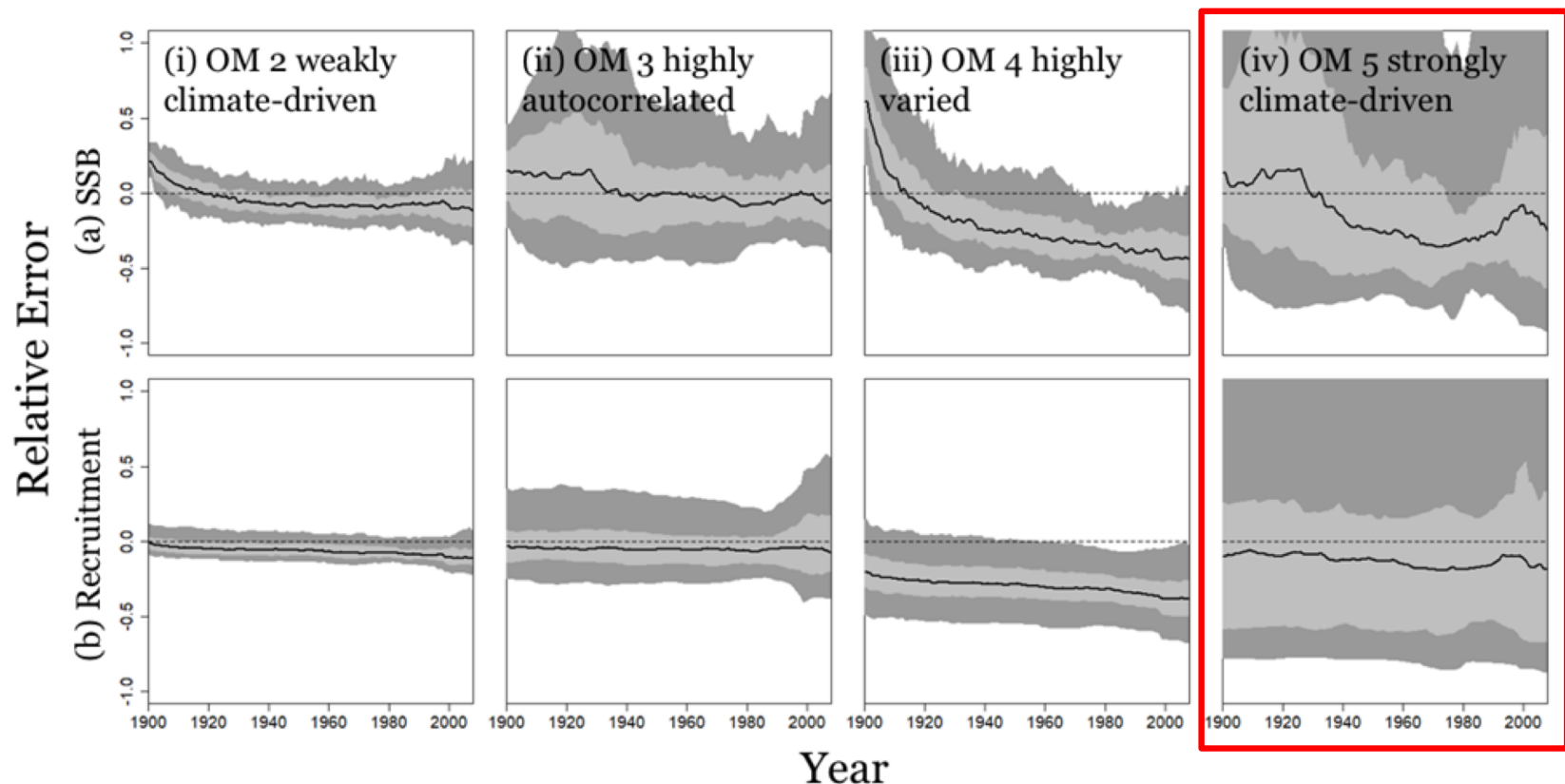
Time series of relative errors in estimates of spawning stock biomass and recruitment for the selected scenarios. The black line is the median relative error, the light grey area the 50% simulation intervals, the dark grey area 95% simulation intervals. See paper for scenarios.

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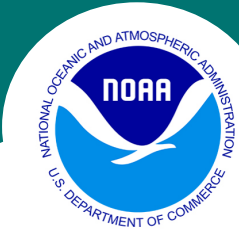
Inclusion of ecosystem information in US fish stock assessments suggests progress toward ecosystem-based fisheries management

Kristin N. Marshall[a], Laura E. Koehn[b], Phillip S. Levin[c],
Timothy E. Essington[b], and Olaf P. Jensen[d]

[a]Fishery Resource Analysis and Monitoring Division, Northwest Fisheries Science Center, National Marine Fisheries Service, NOAA;
[b] School of Aquatic and Fishery Sciences, University of Washington;
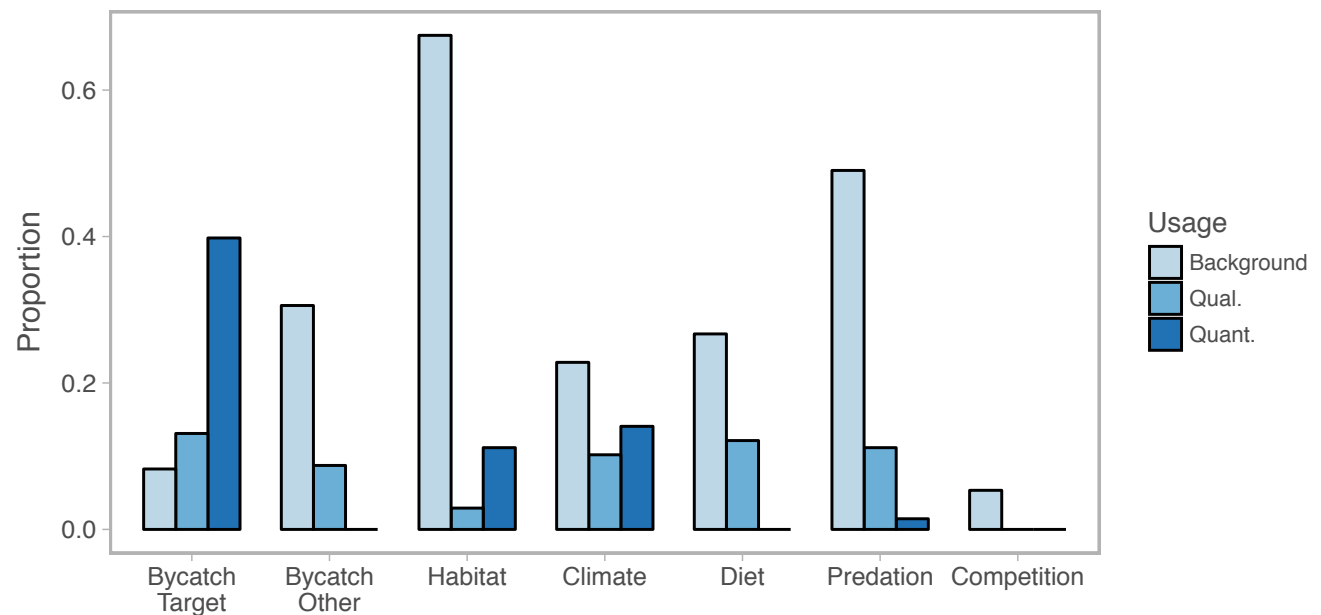[c] School of Environmental and Forest Sciences, University of Washington & The Nature Conservancy;
[d] Department of Marine and Coastal Sciences, Rutgers University

How is ecosystem information used in current US stock assessments?

- Reviewed >200 stock assessment reports

- Interactions with the physical environment (habitat or climate) more common that biological interactions (diet, predation, competition)

- Using ecosystem information qualitatively was more common than quantitatively

- Regional differences in stock assessment reports suggest inclusion of information may be influenced by stock status, life history, and data availability

- Overall, more inclusion of ecosystem information than a previous global review

Questions?