Northwest Fisheries Science Center

Overview

John Stein
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NWFSC Strategic Science Plan - Themes

- Sustainable, Safe and Secure Seafood for Healthy Populations and Vibrant Communities
- Ecosystem Approach to Improve Management of Marine Resources
- Recovery and Rebuilding of Marine and Coastal Species
- Habitats to Support Sustainable Fisheries and Recovered Populations
NWFSC Science

• West Coast Groundfish
• Pacific Salmon
• Southern Resident Killer Whales
• IEA
• Aquaculture
• Ocean Acidification
OA Experimental Results

Dungeness Crab: Lower Survival from Megalopae to 1st Instar)

Pacific Oyster: Smaller size at high CO$_2$ in 1st two days of development

Surf Smelt: Higher survival with high CO$_2$
IEA – Significant Effort

Many management sectors simultaneously look at the system and what drives it. The goal is to minimize ecosystem impacts and maximize societal benefits.
Where Has the NOAA Framework Been Adopted

- Fisheries Management Councils
- North Sea
- Baltic Sea
- UN Environmental Program (UNEP)
- Haida Gwaii, British Columbia

“The Council is encouraged by the preliminary results and recommends continued coordination ... to further explore ways of bringing IEA products into stock assessments and Council decision making.”

- PFMC Decision Document, Nov. 2011
Aquaculture
Washington Shellfish Initiative

Tiger team proposal -- construct hatchery to provide 1+ million restoration grade Olympia oyster seed to plant 50 acres of Puget Sound

Operational staff from Puget Sound Restoration fund

Additional Research

Pinto abalone restoration at Mukilteo lab (UW and PSRF)

Future research -- Genetics and local adaptation of Olympia oyster
Southern Resident Killer Whales
Comparison of diets determined from fecal samples and prey remains (scales and tissue)

Fecal samples – species occurrence

Tissue/scale samples
Do increases in noise change whale behavior?

SRKW call source levels increase with increasing ambient noise

Pacific Salmon
Projecting Ocean Survival of Pacific salmon

Large scale forces acting at the local scale influence biological process important for salmon

Local Physical Conditions
- Upwelling
- Spring Transition Temperature

PDO

Local Biological Conditions
- Predators
- Forage Fish
- Zooplankton
- Phytoplankton
Ocean Survival Model for Spring Chinook

Return to the Mouth of the Columbia River

Returns (x1000)


Predicted

Observed
Stream and Watershed Restoration
A Guide to Restoring Riverine Processes and Habitats
Edited by Philip Roni and Tim Beechie

Watershed Ecology Research
Physical Habitat Quality
And
Chemical Habitat Quality
• Common organophosphate and carbamate insecticides interact in binary mixtures to greatly enhance toxicity to juvenile coho salmon.

• NOAA has repeated and extended the 2009 EHP study to lower exposure concentrations for mixtures of diazinon, malathion, and ethoprop.
West Coast Groundfish
California Current Surveys – Meet Fishery Independent Survey Needs while Moving to Ecosystem Surveys

- Acoustic Hake Survey
- Coast-wide Bottom Trawl
- Cooperative Hook and Line
- Juvenile rockfish
- Hypoxia
- *Hake and sardine – the future?*
Public Engagement Approach

INFORM

INVITE

INSPIRE
EXPO DAY (June 2): Forget the trade show approach of pitching programs. The public doesn’t care about our Line Office structure. Let’s talk about our science, service and stewardship mission in an integrated way; in the context of Earth System Science.

Quick Stats:
- Interactive “hands-on” activities. No program “pitches” or paper
- 29 cross-NOAA volunteers
- ~ 4,000 public visits (20,000 total festival estimate)
Invite

NOAA OPEN HOUSE (June 8): Naysayers said it couldn’t be done - no precedent, too much red tape, too hard to coordinate. Yes, it is a bit of work, but how can we expect the public to care about our house, when we never invite them over to see it?

Quick Stats:
• Over 600 members of the public attended, including elected officials & staffs
• All program tours filled up; strong public demand
• 135 NOAA volunteers from all NOAA Staff and Program Offices
• 5 NOAA Partner organizations included

Public Feedback:
• 110 surveys received; Over 90% positive
• ¼ of respondents asked us to make this an annual event. “Please do again!”