

Science, Service, Stewardship

Agenda Item D.1.b
Supplemental NWFSC PowerPoint
(Electronic Only)
June 2015



Science Report

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Northwest Fisheries Science Center

June 12, 2015



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UPDATES:

- **Presidential Migratory Bird Award**
- **Fisheries Surveys Updates**
- **Bycatch Reduction Research**
- **Climate Vulnerability Assessment**
- **Economic Data Collection**

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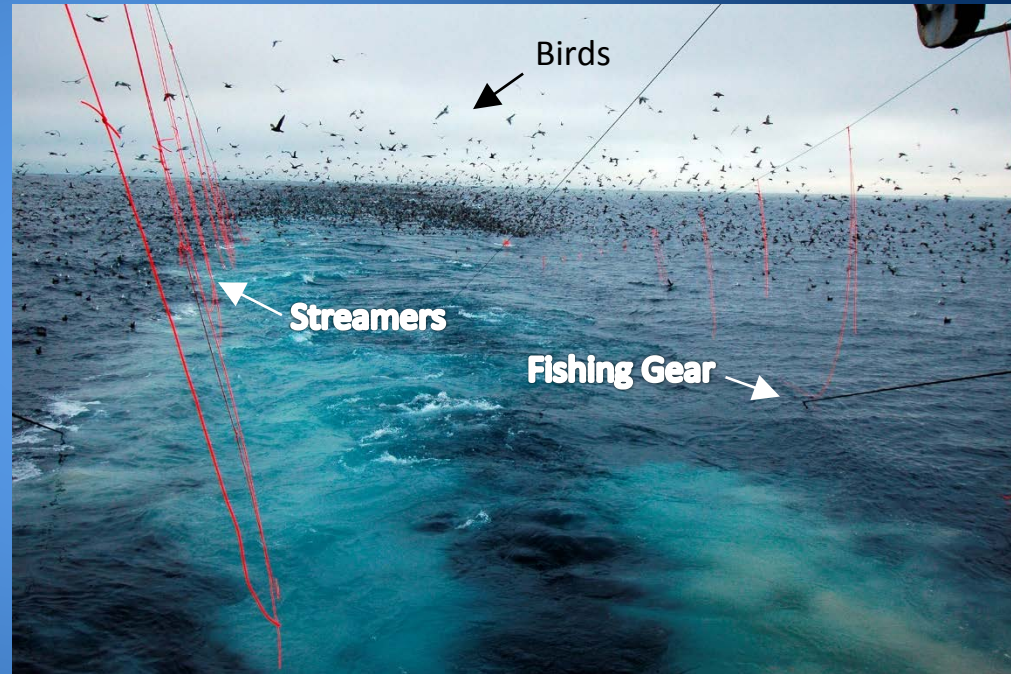
NOAA Fisheries Awarded Presidential Migratory Bird Stewardship Award



"Preventing Migratory Seabird Mortality in U.S. West Coast Groundfish Longline Fisheries"

Partners:

PFMC
PSMFC
U.S. Fish & Wildlife Service
Makah, Quileute & Quinault Tribes
Fishing Vessel Owners Association
LFS Outdoor & Marine
Englund Marine Supply





Fisheries Surveys Updates

- **WC Groundfish Bottom Trawl**
- **SaKe – Joint Survey**
- **Juvenile Fish/Ecosystem Survey**

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2015 Groundfish Bottom Trawl Survey

Currently underway



- Biological data in trawlable habitats
- Cape Flattery to U.S.-Mexico border
- Chartered Vessels F/V Excalibur, Last Straw, Noah's Ark, Ms. Julie
- May to October



Bottom Trawl Survey at a Glance

Biological Measurements

- length
- gender
- age
- DNA
- maturity
- weight
- stomach contents

Ecosystem Data

- wind speed
- dissolved oxygen
- salinity
- temperature
- optical backscatter
- in vivo fluorescence
- irradiance
- EK60 – classify bottom type

Stations

752 planned
~160 completed

Days-at-sea

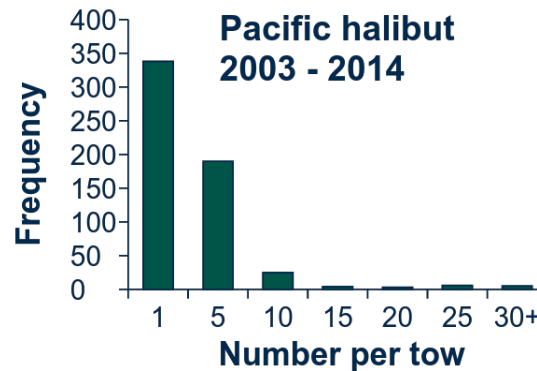
188 planned
40 completed
17 volunteers



Bottom Trawl Survey Highlights To Date (May - June)



2,994 kg canary
catch off WA



185 Pacific halibut in a single tow off WA

- Highest catch in 13 years
- Typically 1 – 3 per tow
- Previously 127 tow in 2008



Eulachon abundant:
1,805 from leg 1 (May 23- Jun 2)



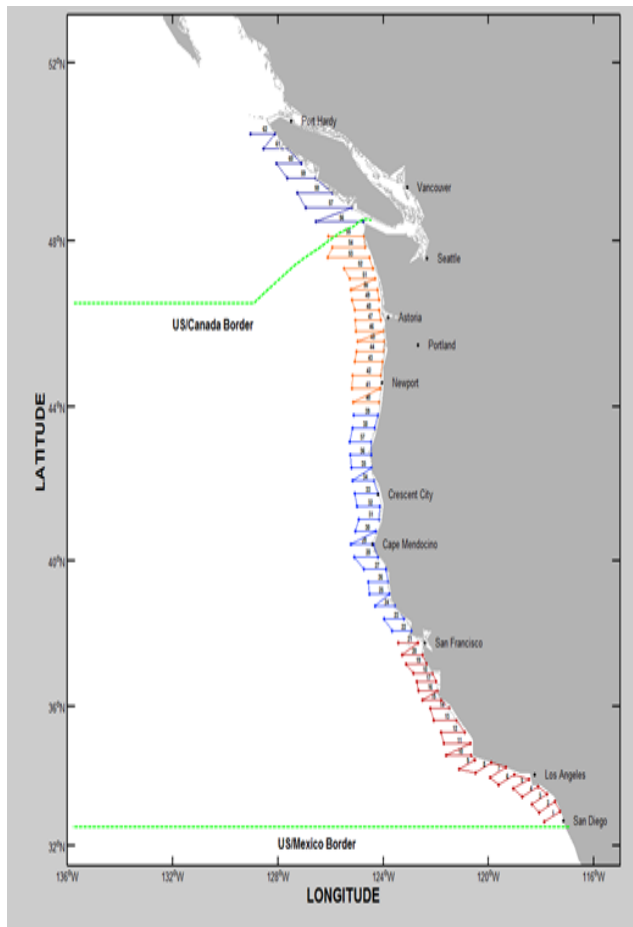
Unusually large pod of
killer whales (30 - 40)
observed preying on sea
lion off WA



2015 SaKe

Leg 1 of the survey begins June 15

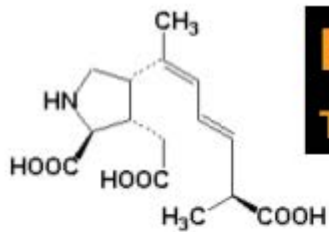
- Design covers full extent of traditional Hake survey area and includes oceanographic sampling
- Four legs from US-Mexico border to North end of Vancouver Island
- June to September
- Includes harmful algal bloom sampling
- Survey design change in response to CIE and SRG reviews





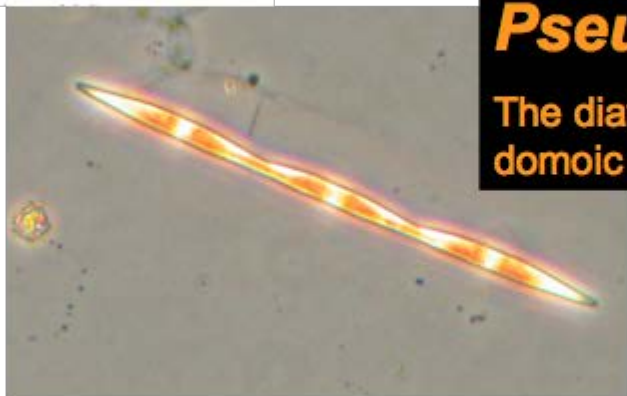
Coast-wide Harmful Algal Bloom

1998 coast-wide event



Domoic acid

The toxin



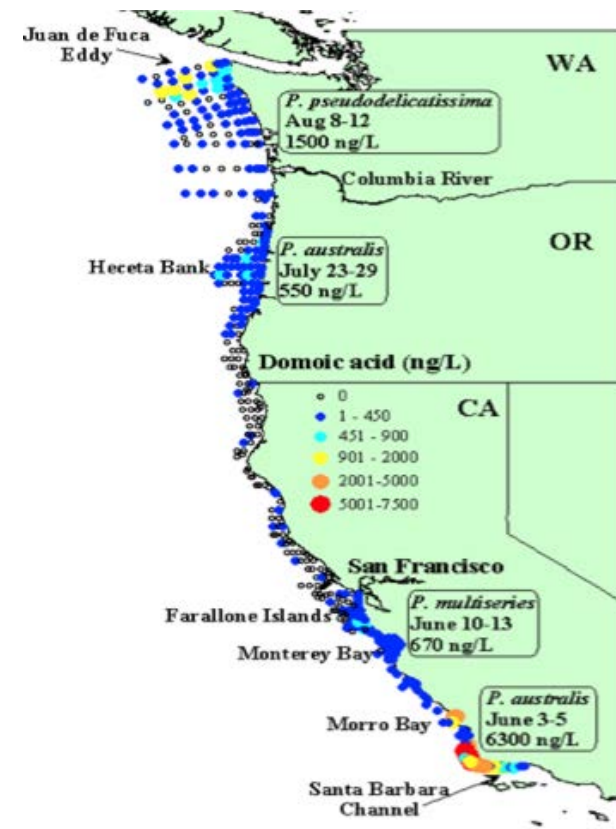
Pseudo-nitzschia

The diatom that can produce domoic acid

Poisoning

Food web transfer

Vectors: plankton feeding shellfish & fish



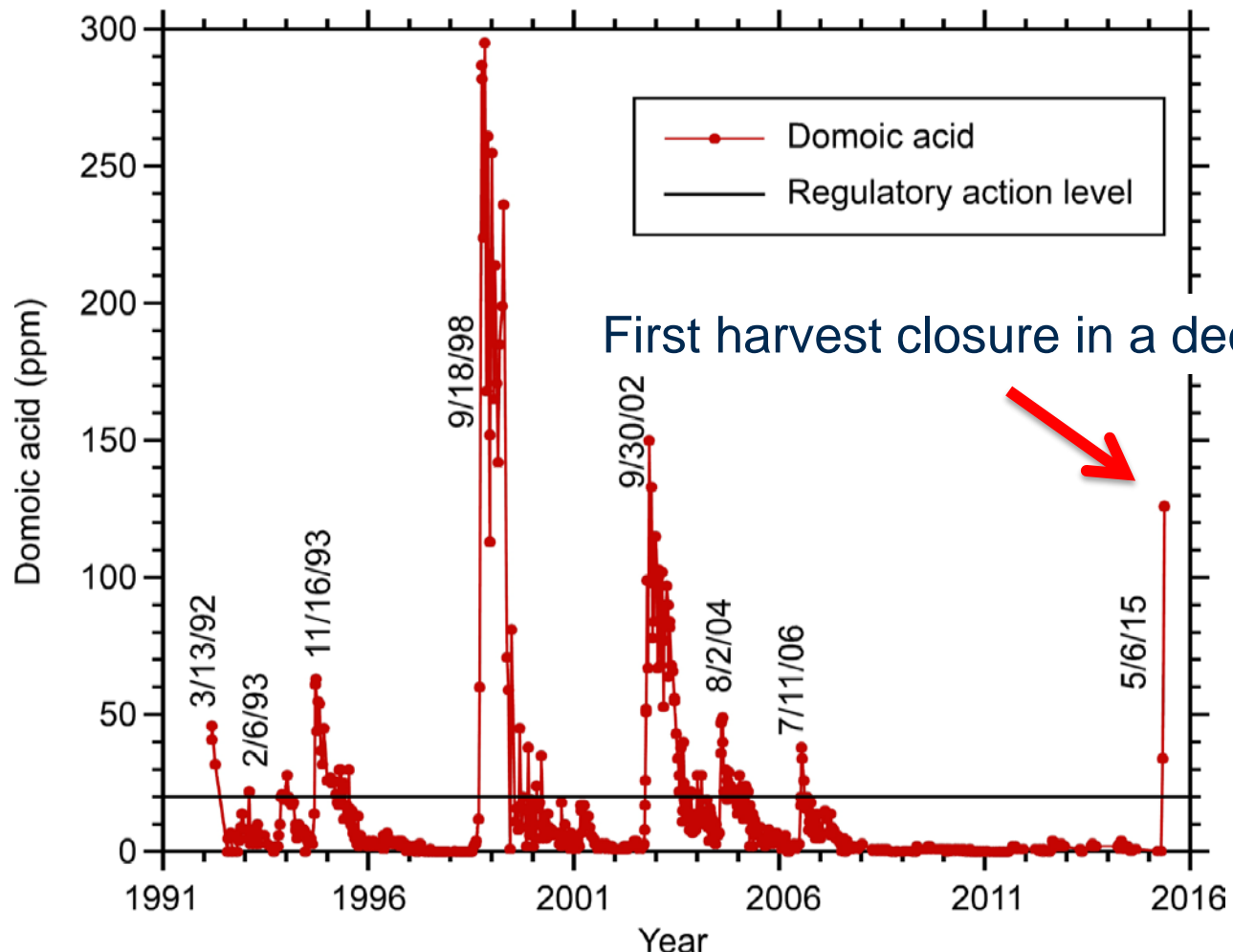


Domoic acid in razor clams (WA coast) 1992 - 2015

**Levels of toxin
are continuing
to rise.**

**Razor clam &
Dungeness
crab fisheries
are closed**

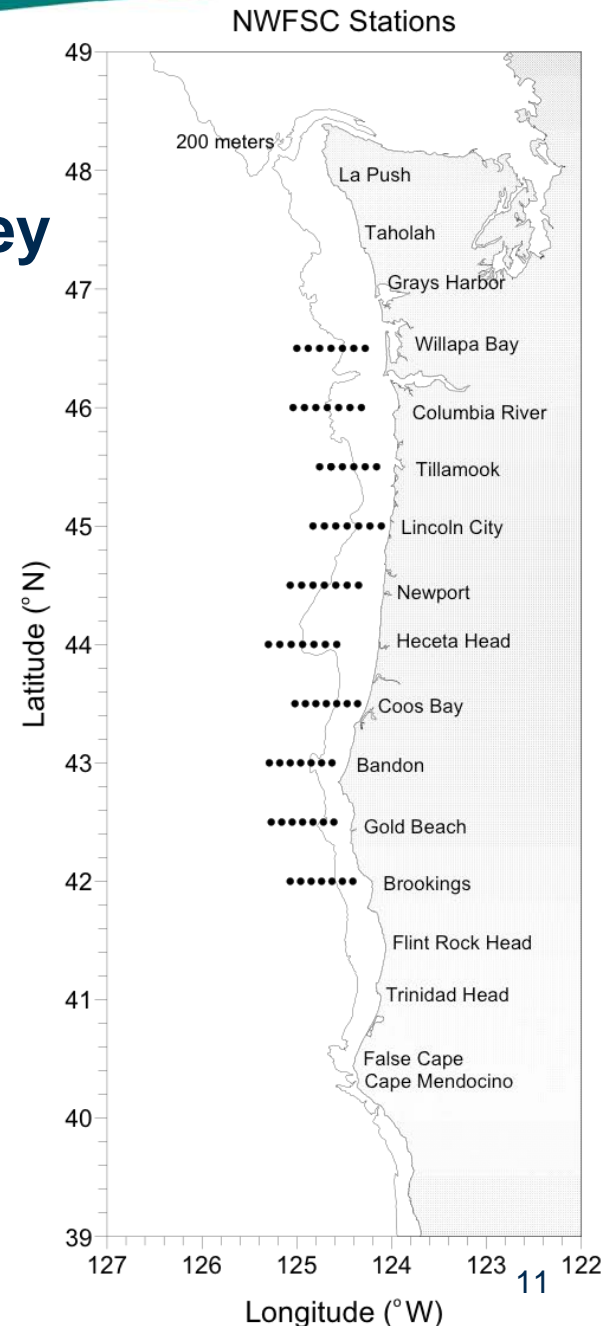
**Impacting
coastal
economies**





Juvenile Fish/Ecosystem Survey

- Completed May 27-June 10
- Observations
 - Few rockfish, many juvenile hake
- Warm Blob?
 - *Substantial blooms of algae (10-20 m deep) near Heceta Head and Newport*
 - *Interesting seabirds - Hawaiian Petrel, South Polar Skuas, and others species not seen before*





Bycatch Reduction Research Projects

Waldo Wakefield

NWFSC FRAM Marine Habitat Ecology

Mark Lomeli and Dave Colpo

PSMFC



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2015 Field Season

Use of artificial illumination to enhance Chinook salmon escapement out a bycatch reduction device in a Pacific hake midwater trawl – ***timed w/ 2015 fishery aboard F/V Miss Sue***



Examining the effectiveness of T90 codends to reduce bycatch in a groundfish bottom trawl fishery – ***August aboard F/V Last Straw***





California Current Fisheries Climate Vulnerability Assessment:

An application of the NMFS Climate
Vulnerability Protocol

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Goal and Objectives

Goal:

Produce a practical and efficient tool for assessing the vulnerability of a wide range of fish stocks to a changing climate.

Objectives:

Provide relative vulnerability rankings across species (**triage**).

Identify key attributes/factors driving vulnerability.

Identify key data gaps or information needs.

Advance the conversation about research needs and management options at Regional/Council level.



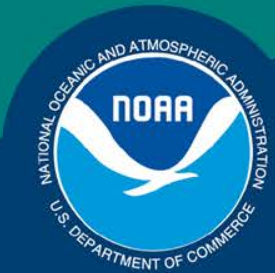
Uses for Results

Science:

- Identify stocks for incorporating environmental parameters into stock assessments
- Identify gaps to shape research priorities
- Identify stocks for increased monitoring to better quantify when expected climate impacts occur

Management:

- Information for use in EIS's, BiOps and other documents
- Potential management actions that might reduce vulnerability and increase resilience in a changing climate
- Results can be combined with social and economic data to build vulnerability assessments for fishing communities



Economic Data Collection (EDC)

Economic Data Collection Team
Todd Lee lead, NWFSC

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Economic Data Collection (EDC) for Trawl Catch Shares

- The EDC forms for 2014 data were mailed May
[Participants can also complete the forms on-line]
- 2013 data (submitted September 2014) finalized next month
- EDC information through 2013 will be presented at the November Council meeting
 - New suite of performance metrics
 - On-line EDC data exploration tool with ability with to electronically download aggregated (non-confidential) data



Recreational angling valuation study funded by NMFS

- Survey-based study will examine how angler effort and economic value are affected by management and environmental changes (e.g., depth and area restrictions).
- Will feed into a recreational bioeconomic model currently being developed at the NWFSC.
- Survey will cover WA , OR (NWFSC) and CA (SWFSC)
- Initial survey development expected to begin in late 2015



Science Program Reviews:

Status

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- Protected Fish Species

Review conducted May 2015 (Seattle)

Received panel comments

Developing response

Protected Marine Mammals and Turtles

Review late July 2015 (La Jolla)

Open to public



Questions