



**NOAA**  
**FISHERIES**  
**Northwest**  
**Fisheries**  
**Science**  
**Center**

Agenda Item I.1.b  
Supplemental NMFS NWFSC Presentation 1 (Hastie)  
June 2019

# Factors Contributing to the Reduction in Vessels Contracted for the 2019 Groundfish Bottom-Trawl Survey

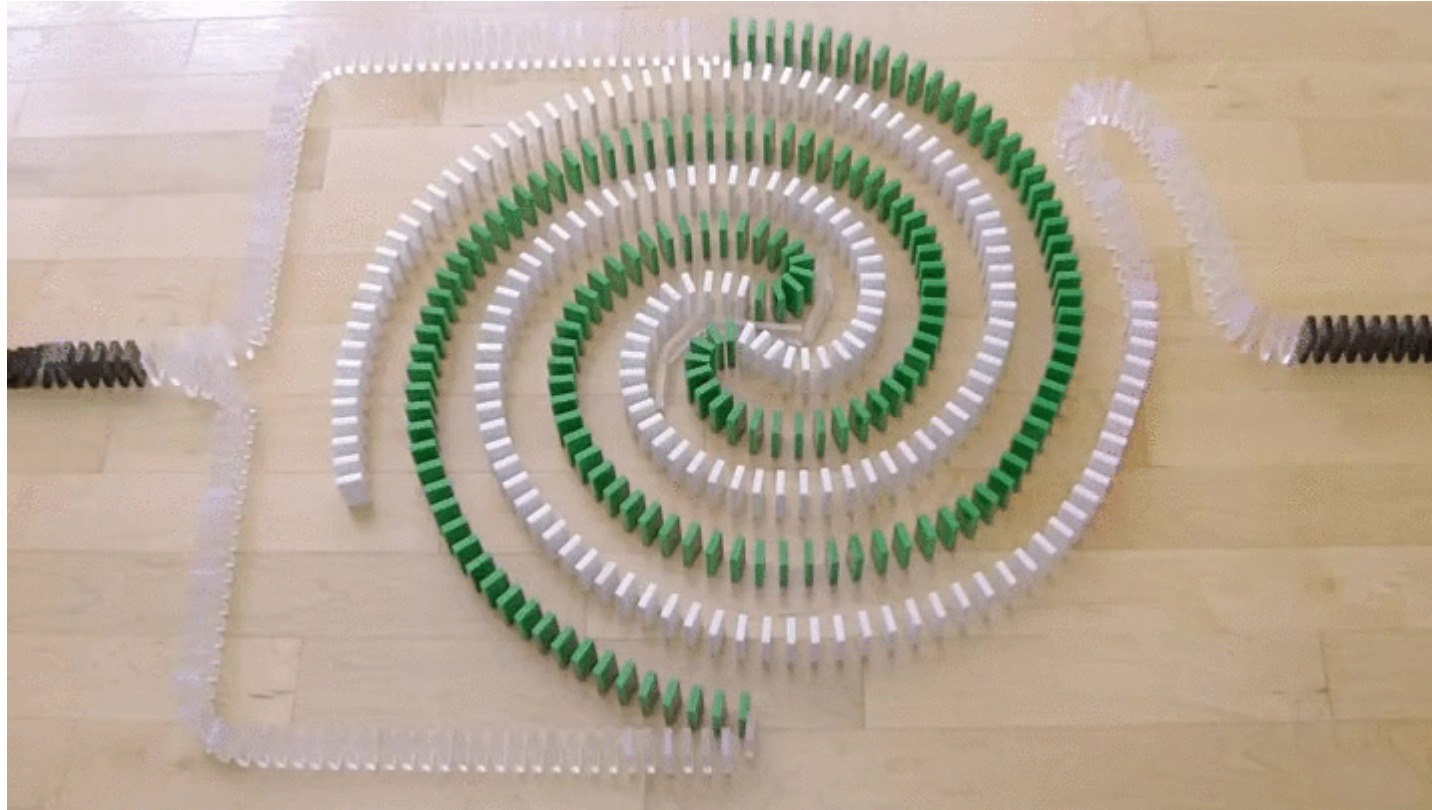
Dr. Kevin Werner  
Science and Research Director

Dr. Shallin Busch  
Acting Director  
Fishery Resource Analysis and Monitoring Division

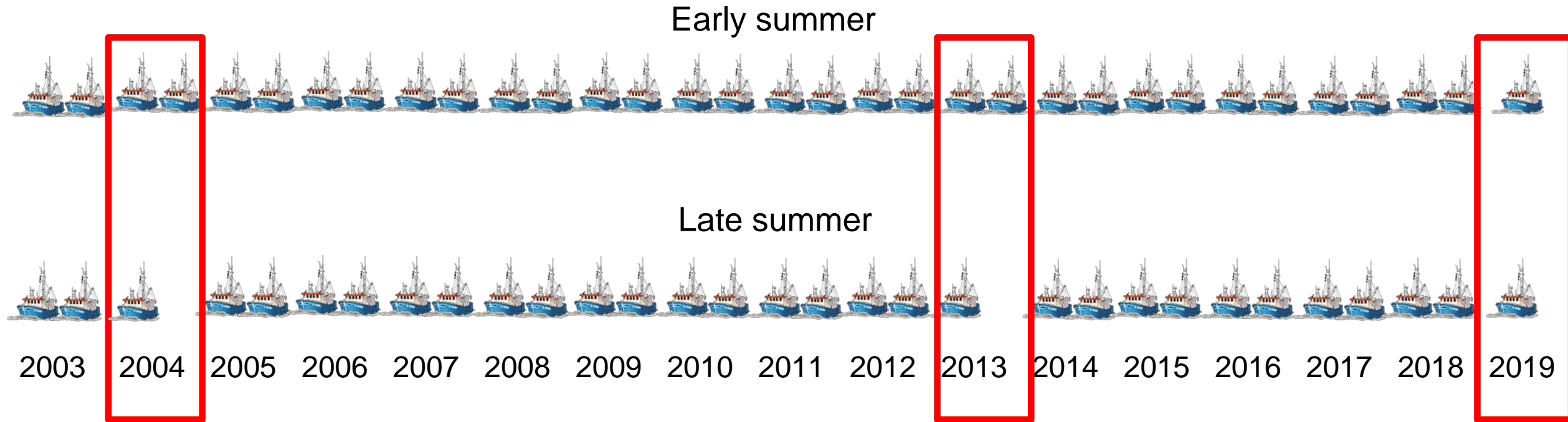
Dr. Jim Hastie  
Population Ecology Program Manager  
Fishery Resource Analysis and Monitoring Division

June 2019

Multiple factors have reduced the amount of funds available  
for the West Coast groundfish survey



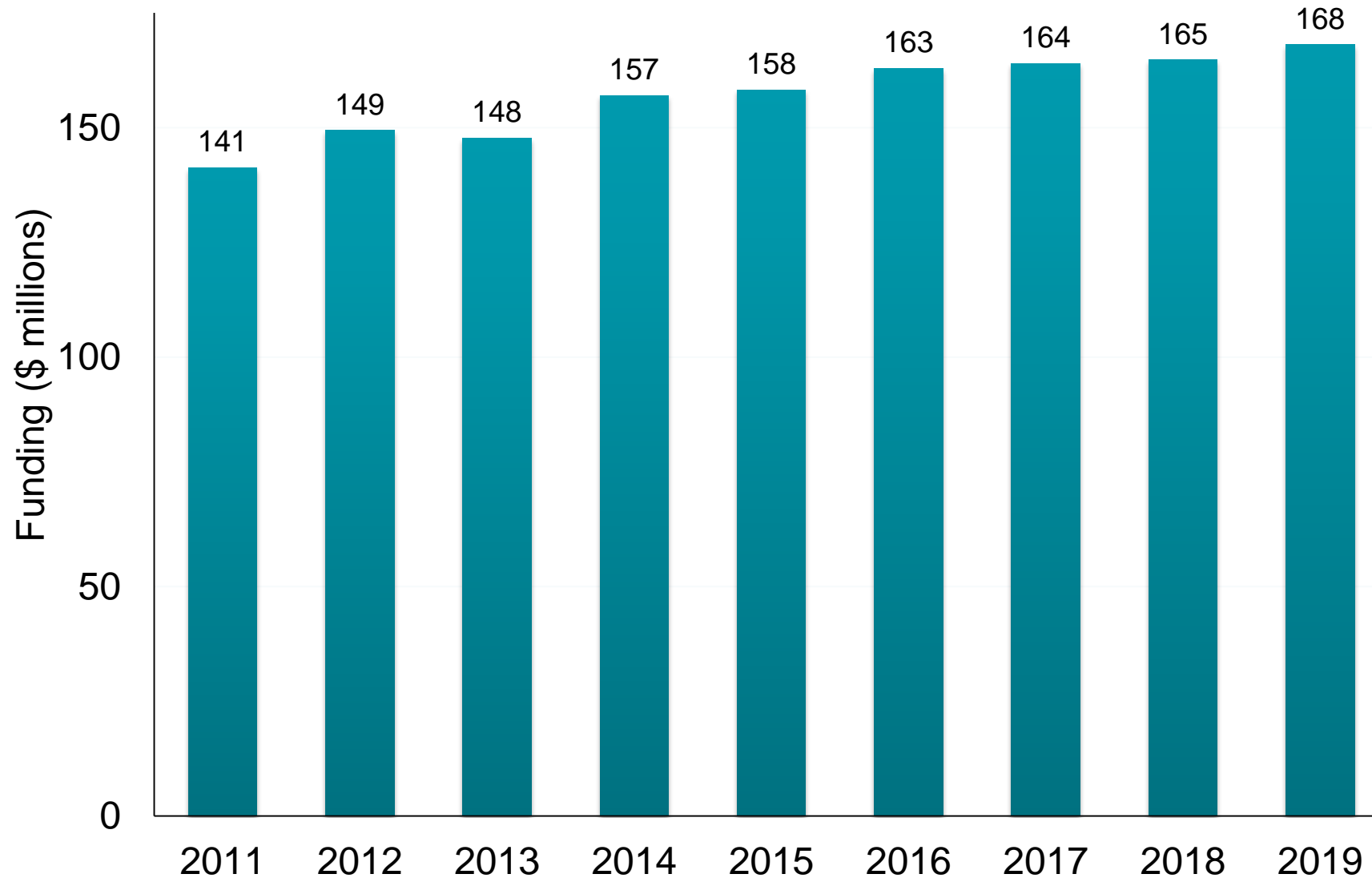
# State of the survey since its inception



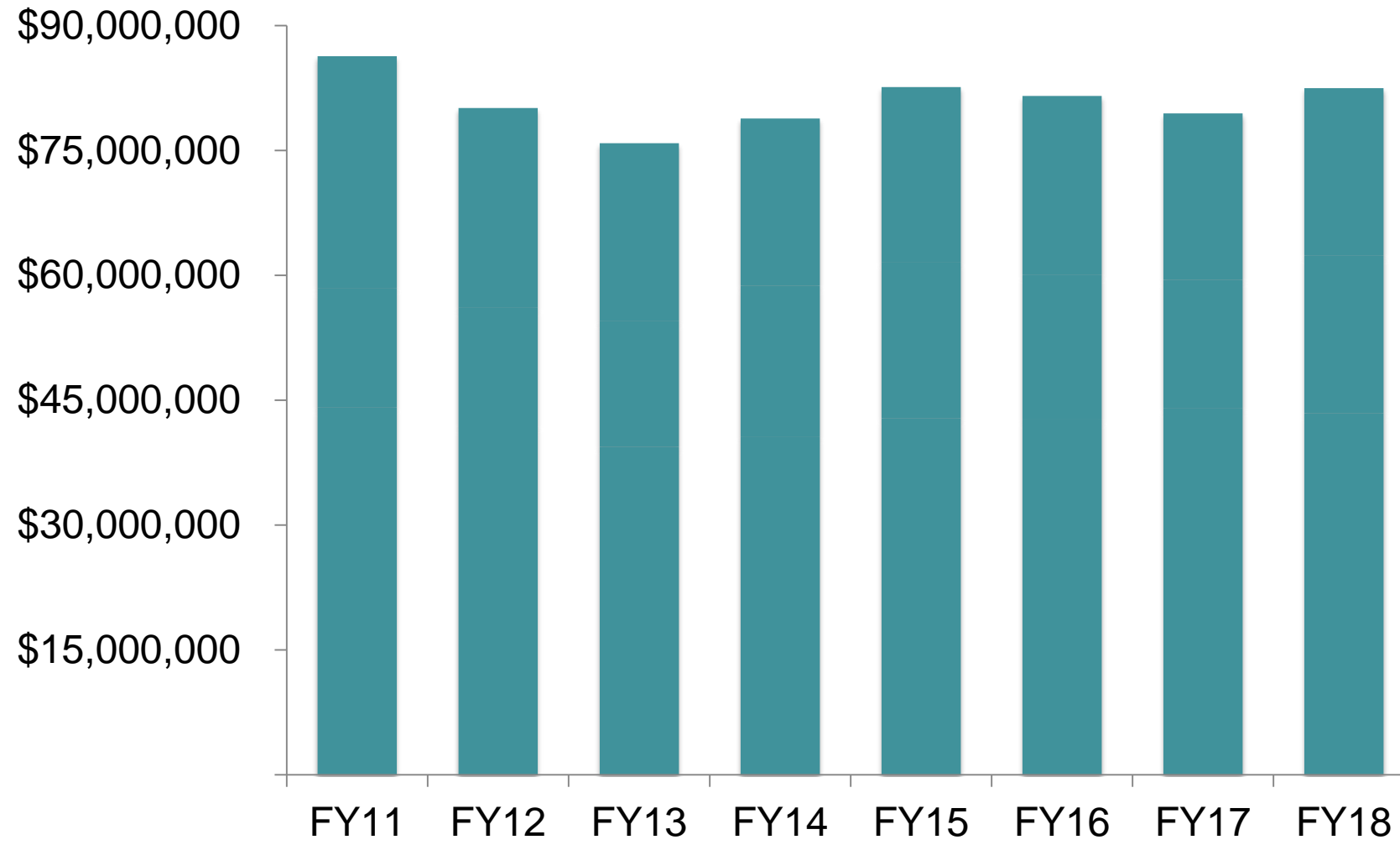
NMFS funding for science related to surveys and stock assessment has increased ~\$25M over the last ~10 years. Some increases have come with Congressional direction. Increases have not kept up with mission support and inflationary costs.



# Recent NMFS Funding Levels for “Fisheries Data Collections, Surveys, and Assessments”



# Recent NWFSC Obligations

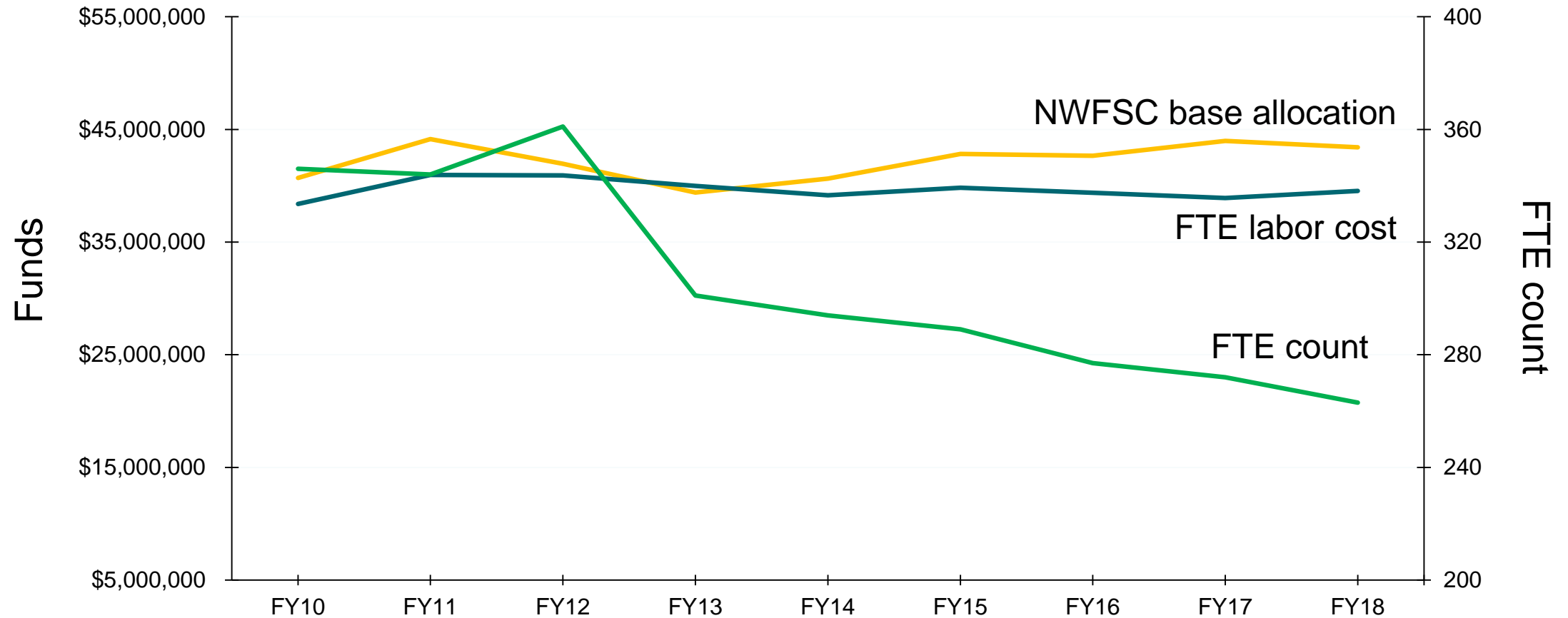


The vast majority of “Fisheries Data Collections, Surveys, and Assessments” funds allocated to the NWFSC are used to conduct surveys and stock assessments.

As in any industry, staffing costs are rising with time.

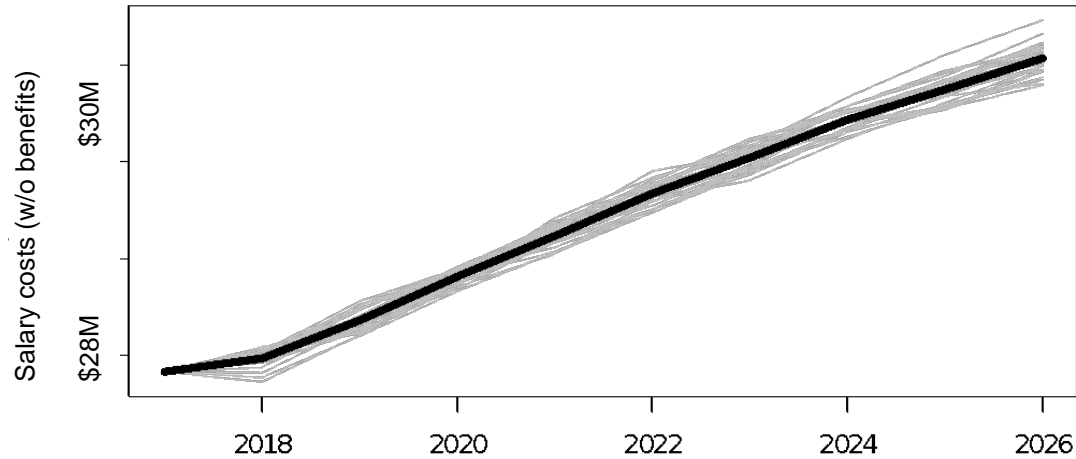


# NWFSC FTE count is declining to keep labor costs flat

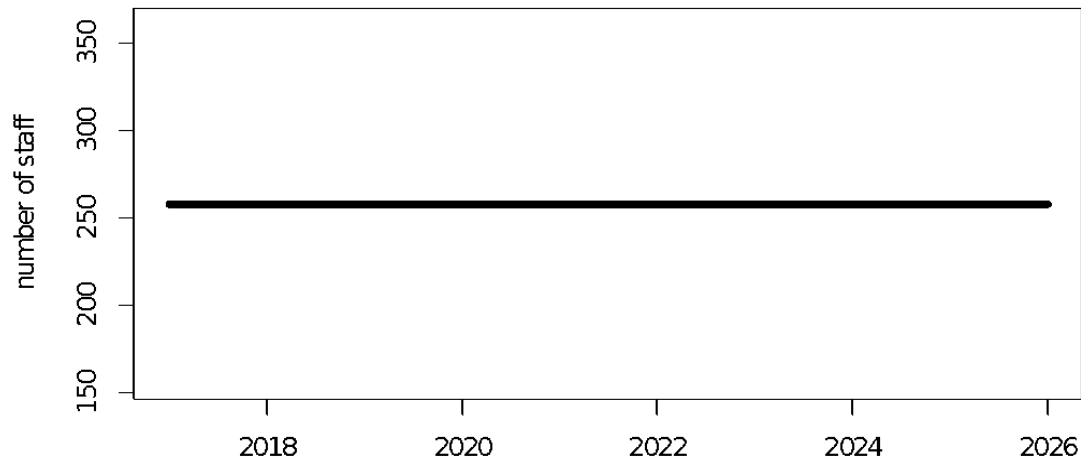


# Future NWFSC Staffing Scenarios

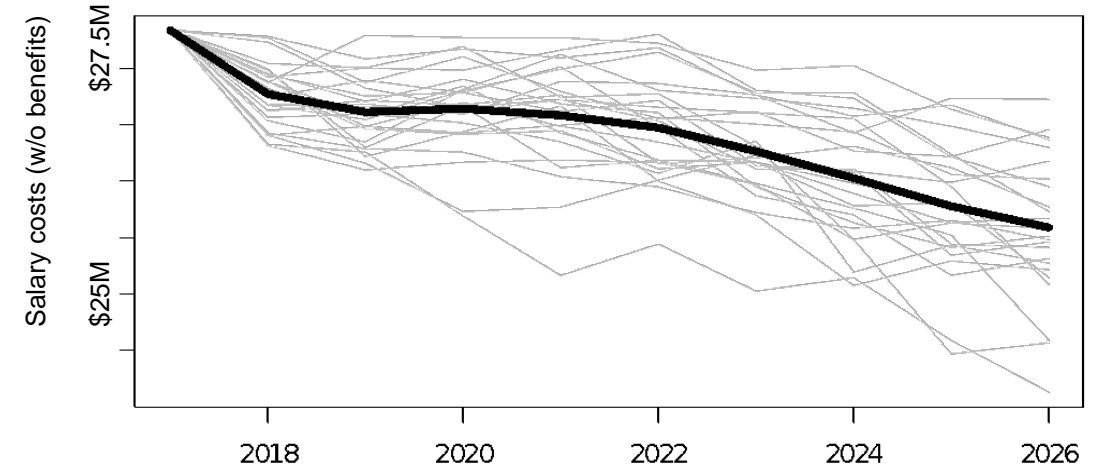
## Hold staff number steady



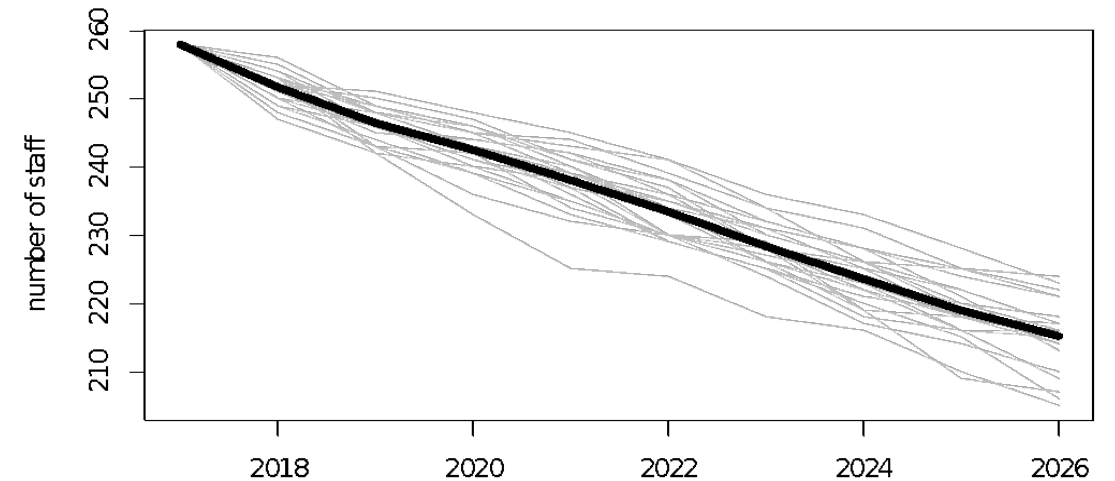
cola- 0.015 caps- 0.03 backfill- 1 maxsal- 161900 Group- All



## Let staff number fall



cola- 0.015 caps- 0.03 backfill- 0.5 maxsal- 161900 Group- All

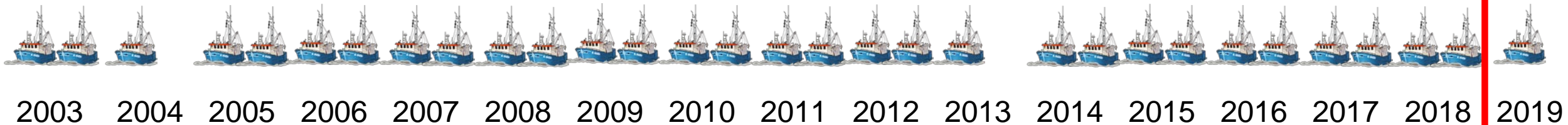


# Why was the survey reduced this year? Why now?

Early summer



Late summer



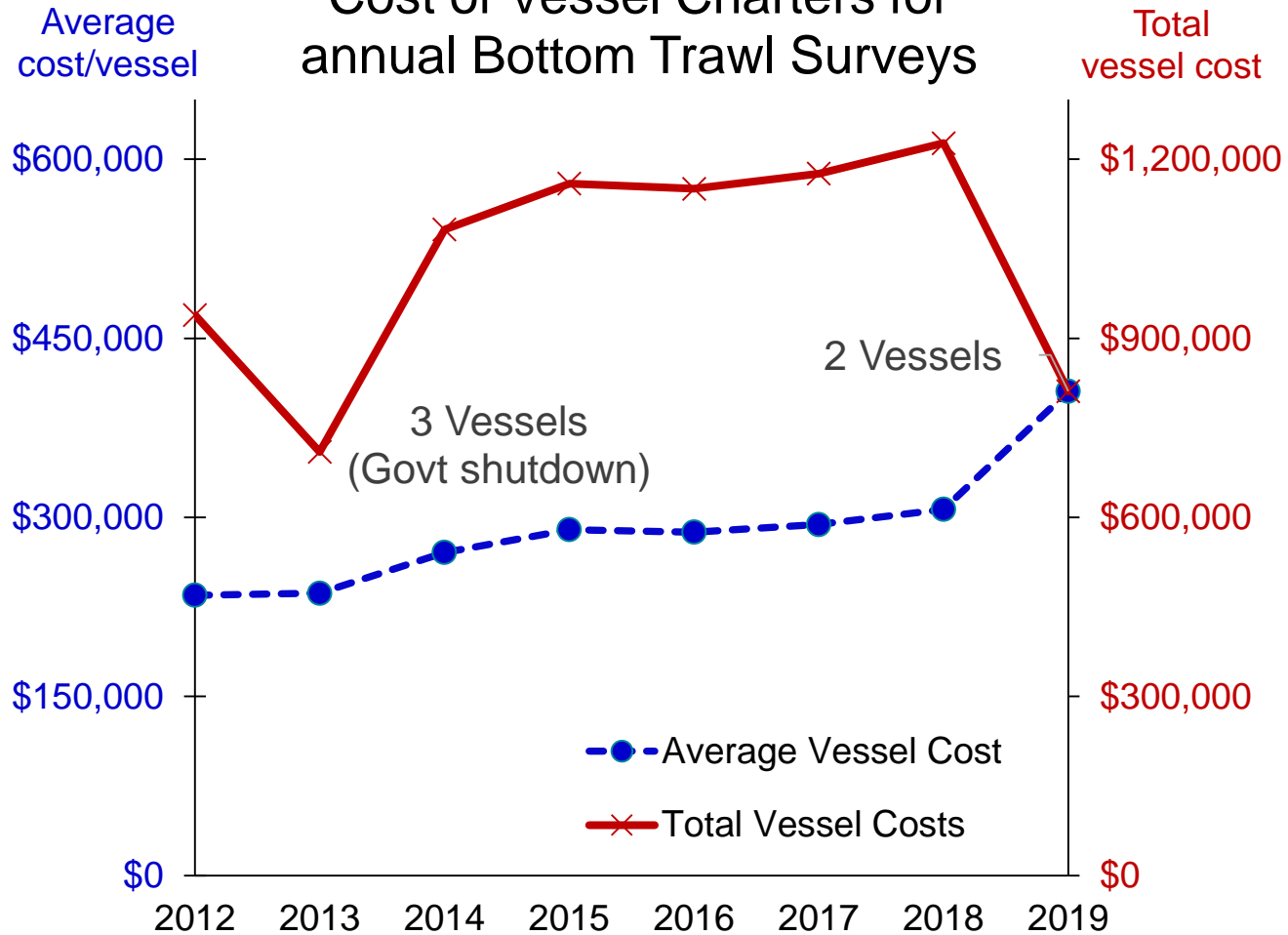
# What goes into survey costs?

- Contracts with fisheries vessels
- Staff to plan for and execute the survey
- Fuel
- Net repairs
- Sensors repair and updates
- Other supplies and equipment
- Travel and transportation
- Overhead



# The cost of vessel contracts is increasing

Cost of Vessel Charters for annual Bottom Trawl Surveys



Total contract cost of 4-boat survey\*  
\$0.94 million in FY 2012  
~ \$1.4 million in FY 2019

\*if all contracts filled in named FY

NWFSC and HQ continue to work to restore the full groundfish survey in 2020, but it is not a certainty.

Early summer



Late summer



2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020



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# Summary

- NMFS Science Enterprise is facing broad funding challenges for every program due to increasing mission demand, rising costs of mission and mission support, and inflation
- Costs for vessel contracts and labor have increased
- Groundfish survey was reduced from 4 vessels to 2 vessels in FY 19
- Planning for surveys in FY 20 is underway. Restoring a 4 vessel survey will be challenging without additional funds





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Science  
Center**

# **NMFS Groundfish Science Report**

## **June 2019 PFMC meeting**

**Dr. Jim Hastie**

Population Ecology Program Manager  
Fishery Resource Analysis and Monitoring Division

**Dr. Shallin Busch**

Acting Director  
Fishery Resource Analysis and Monitoring Division

**Dr. Todd Hay**

Data Program Manager  
Fishery Resource Analysis and Monitoring Division

# Overview

- Recent science highlights (Jim Hastie)
- One-touch reporting (Todd Hay)



# 2019 Bottom Trawl Survey



Mobilization Newport: May 22



Sunset off Garibaldi

- Started on May 20; continuing until Oct 29;
- 2 vessels (1 each pass); 94 sea-days; 376 stations
- Leg 1 (May 25 - Jun 2; OR to WA): no rockfish tows; few sablefish; abundant Dover and petrale; no Pyrosomes
- Leg 2 (Jun 6 - 15): 2 tows with notable rockfish catch through Jun 9<sup>th</sup> - Pacific ocean perch 1143 kg; sharpchin 1127 kg ; canary 237 kg; bocaccio 200 kg; yellowtail 133 kg; yelloweye 29 kg
- Leg 3: Jun 22 – Encountering some challenging weather off S. Oregon

# 2019 Acoustic Mid-water Trawl Survey

- R/V Shimada left Newport on June 13
- Began conducting the survey June 17, near Pt. Conception
- Collecting eDNA water samples throughout the range
- Four Saildrones accompanying to provide comparison acoustic data from nearly all of the same transects being covered by the Shimada, with a desired temporal proximity of  $\pm 3$  days
- Post-survey research will compare backscatter measurements from both platforms, and evaluate the potential for developing biomass estimates through combining hake fishery size and age data with Saildrone backscatter



# 2019 SWFSC Acoustic Mid-water Trawl Survey



- The SWFSC Rockfish Recruitment and Ecosystem Assessment Survey, on the NOAA Ship Reuben Lasker, began May 5<sup>th</sup> and concluded on June 7<sup>th</sup>
- Completed 103 pelagic midwater trawls, 146 CTDs (physical oceanography casts), 51 plankton tows, extensive acoustic data collections, seabird and marine mammal observations and environmental DNA sampling.
- General results included low abundance of pelagic juvenile rockfish (and other pelagic juvenile groundfish), high northern anchovy catches, above average market squid catches, low krill catches in most areas, and continued high catches of salps and pyrosomes throughout Central and Southern California



# 2019 Groundfish Assessments

- Cabezon STAR Panel conducted May 6-10 in Newport
- STAR Panel for Longnose and Big Skates conducted June 3-7 in Seattle
- Two more upcoming STAR Panels in July:
  - Sablefish, July 8-12, in Seattle, WA
  - Cowcod and Gopher/Black and Yellow rockfish, July 22-26 in Santa Cruz, CA
- SSC review of assessment from last 3 panels, along with updates will occur August 20-21.
- Shoutouts to our Pac. States agers, and those at WDFW and ODFW, for working hard to overcome the ageing time lost due to the federal furlough.



# FRAM Science Overview

## Understanding Groundfish & the California Current Ecosystem

### Biology & Ecology

- Describe groundfish population dynamics
  - Status, trends & forecasts of groundfish populations
  - Stock identification & genetic analysis
  - Life history parameter estimates
- Study relationships between fish populations & the environment
  - Food webs
  - Habitat characterization & species associations
  - Role of environmental drivers
  - Anomalous or emerging conditions
- Characterize species responses to climate change, ocean acidification, & hypoxia
  - Changes in the dynamics & distribution of fish populations
  - Changes in food webs & community structures
  - Vulnerability of species & fishing communities

### Human Interactions

- Evaluate effects of fisheries & management on human & natural systems
  - Fishing mortality estimates
  - Socioeconomic effects, including earnings, employment, & safety
  - Habitat integrity analysis
  - Effects on food webs
  - Management Strategy Evaluation
  - Catch Share Program analysis
  - Spatial management
- Develop & evaluate approaches for reducing adverse ecological impacts of fishing
  - Bycatch reduction devices
  - Survival improvement of discard
  - Marine mammal excluders
  - Seabird avoidance
  - Footrope impacts on habitat
- Valuation of ecosystem services
  - Damage assessments
  - Ecosystem-Based Fishery Management support
  - Threatened & endangered species

*Promoting  
sustainably-productive  
fisheries, communities, &  
ecosystems through data  
collection, research, &  
scientific guidance*

### Collecting Data

- Fishery observers
- Economic surveys
- Marine surveys
  - Bottom trawl
  - Acoustic-trawl
  - Hook & line
- Ecosystem Observations
  - Environmental data
  - Habitat

## Developing Methods & Technologies

### Data Collection, Quality & Processing

- Assess & develop technologies for sampling fishes & their habitats
  - Remote sampling
  - Video processing & analysis
  - Electronic monitoring & reporting
  - Wide- & narrow-band acoustics
- Improve the efficiency & quality of environmental & socioeconomic data collection & processing
  - Appropriate suite of data collected to meet science priorities
  - Sampling design & protocols
  - Common field collection technology
  - Automated data quality control & processing

### Analysis & Dissemination

- Develop & test an appropriate suite of assessment methods
  - Spatial-temporal analytical methods
  - Incorporation of ecosystem drivers
  - Multispecies approaches
  - Data-limited models
- Integrate & disseminate information effectively
  - Data integration from internal & external sources
  - Rapid data delivery
  - Methods for communicating uncertainty
- Improve estimation methods
  - Age & growth
  - Natural mortality
  - Maturity & fecundity
  - Bycatch & total fishing mortality

*Science, Service, Stewardship*



# One Touch Reporting

**Dr. Todd Hay**

Northwest Fisheries Science Center

Fishery Resource Analysis and Monitoring Division

June 22, 2019

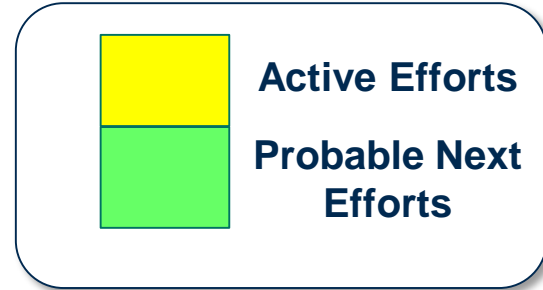


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# One Touch Reporting

*Goal - Streamline these systems*



Vessel  
Monitoring  
Plan



Permits



OLE  
Declarations



Observer  
Trip  
Selection



Vessel  
Monitoring  
System (VMS)



Observer  
Bycatch



Incident  
Reporting  
Safety / OLE



Incident  
Reporting  
Deficit  
Checking



Electronic  
Monitoring



Electronic  
Logbook



Catch  
Monitors



Quota IFQ



Fish Ticket  
Landings



## Overarching Approach

**Captains' Perspective** - How to improve their experiences with NMFS+

**Regionally-driven** - Key stakeholders driving the process

**Data Focused** - Data streams, associated business processes, and web service application programming interfaces (APIs)

**Long Game Perspective** - Get organized, work the processes, and pursue gains where they can be had ... the elephant is large



## Next Steps

### Stakeholder Info Gathering

**Who** – Feds, States, PSMFC, Captains

**What** – Data Stream Details

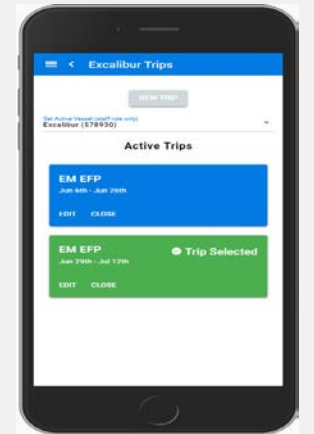
**How** – 2+ stakeholder mtgs + interviews

**Where** – Seattle + TBD

**When** – Aug/Sep + Nov/Dec

### Technical Enhancements

Observer Trip Selection  
(OTS)



Permits Data Integration

OLE Declarations

