

# Cherry Point Herring Update, 2018



## **WDFW Herring Program Contacts:**

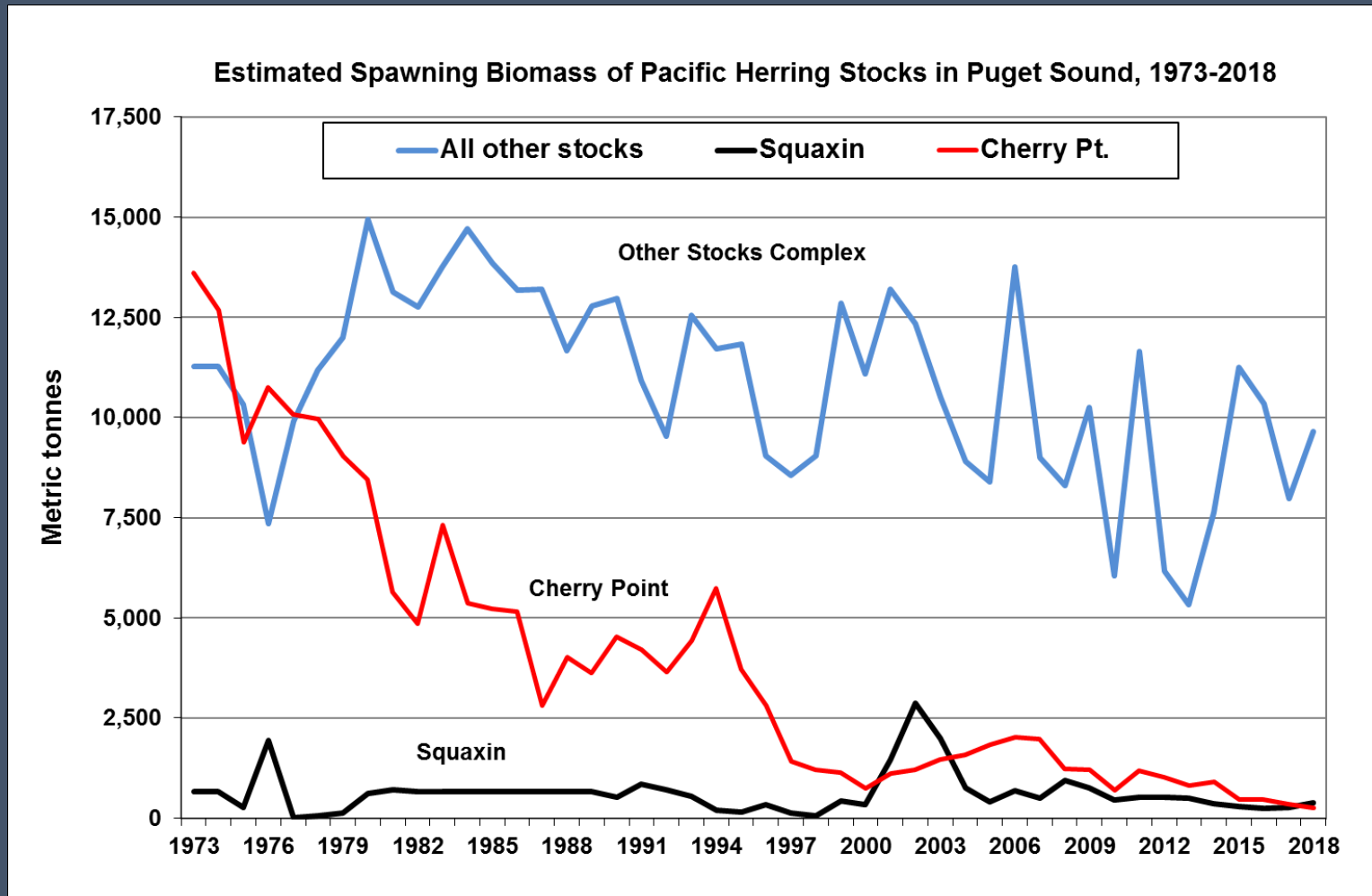
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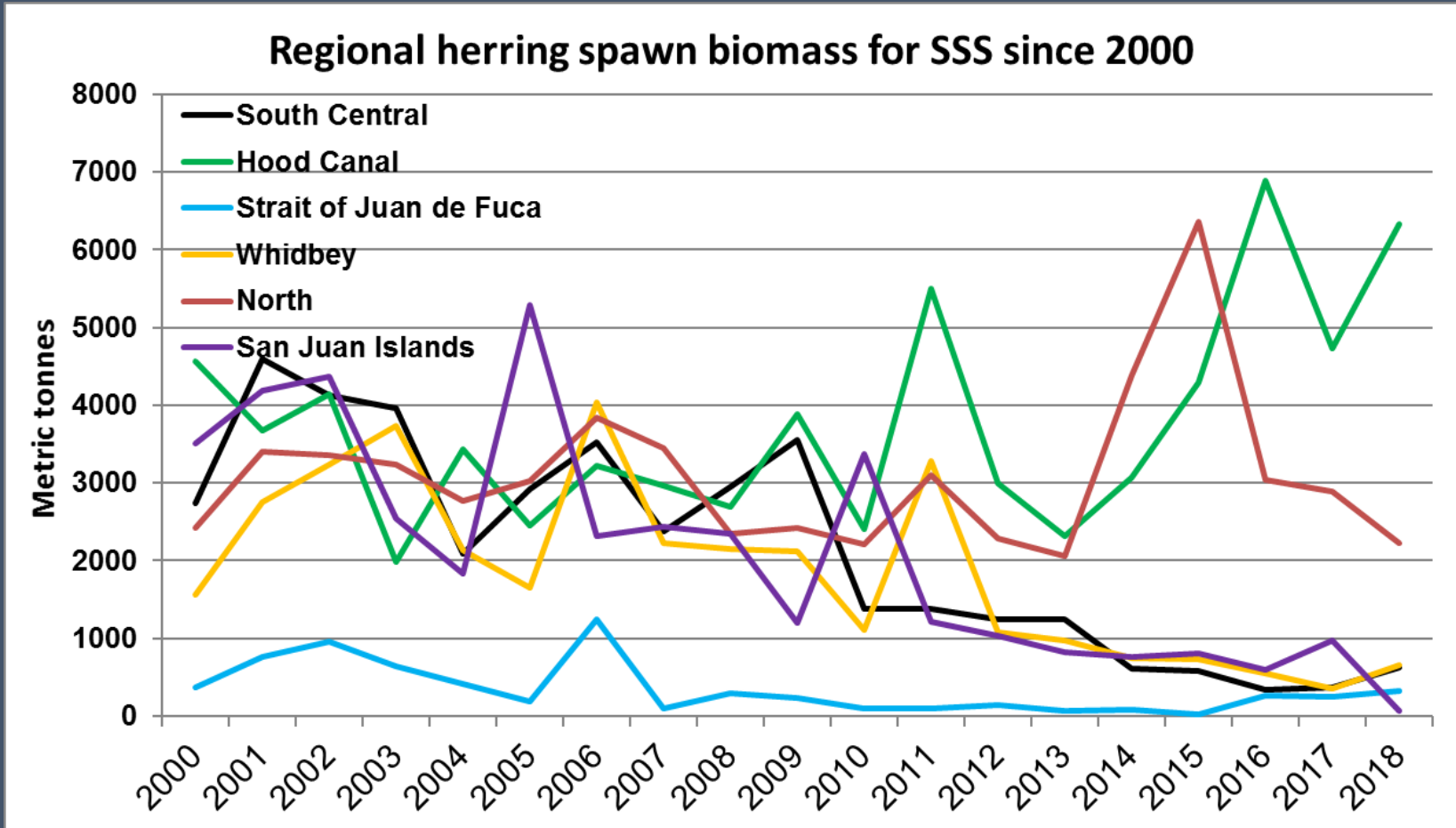
# 2018 Herring biomass summary

- Across the southern Salish Sea, overall herring spawn biomass was 9,744 metric tonnes
  - up from 8,187 metric tonnes in 2017
- Survey effort was up ~7% in 2018 vs. 2017
- Cherry Pt. stocked declined from 337 to 249 metric tons (new low)
  - #8 in biomass out of 21 stocks
- 2018 survey effort at Cherry Point
  - 455 stations over 18 days

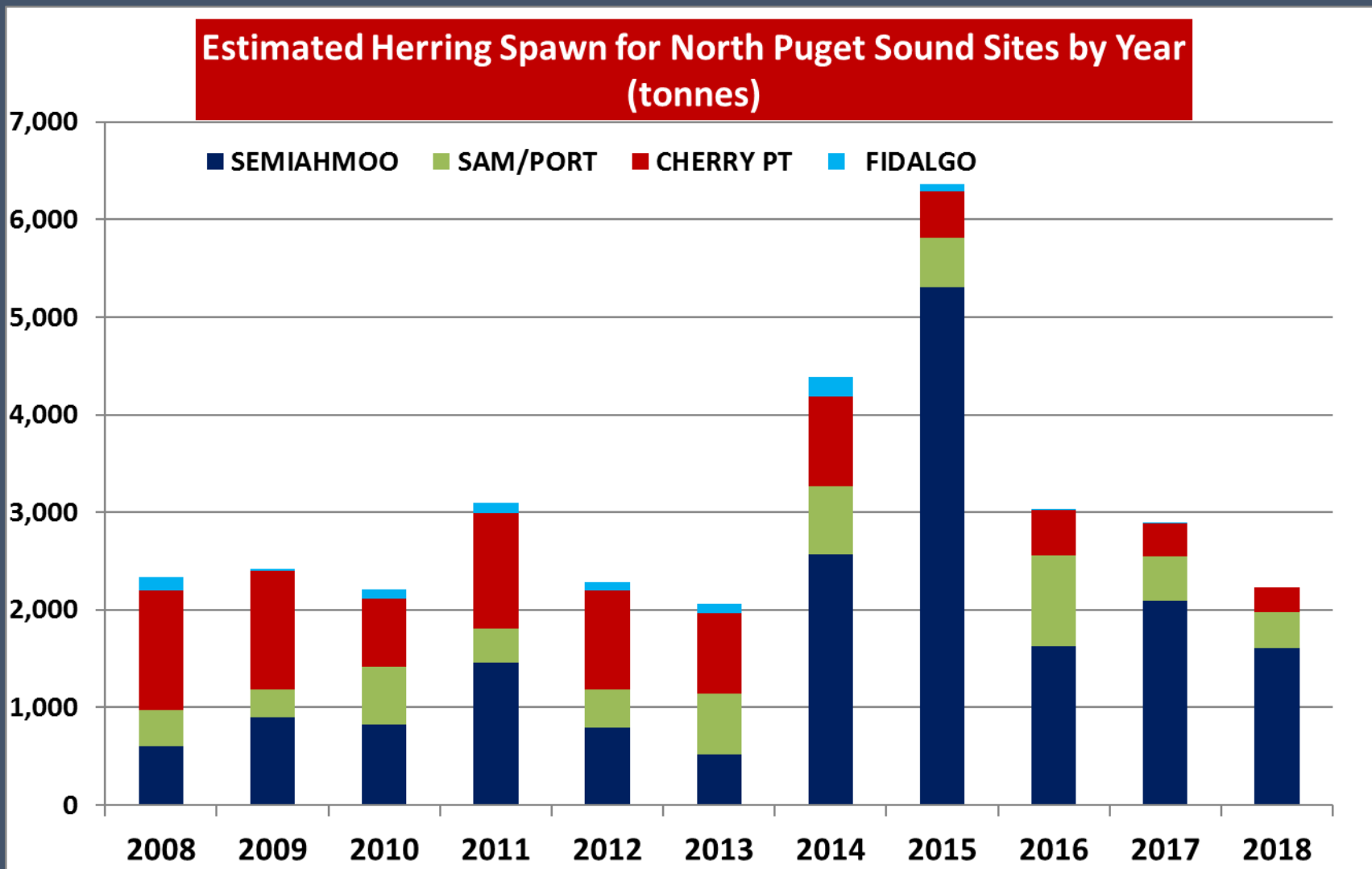
# 2018 Southern Salish Sea (SSS) Herring biomass summary by genetic grouping



# 2018 SS Herring biomass summary, by Basin, since 2000



# Estimated herring spawning biomass in the Northern basin since 2008





# Cherry Point 2018



# Spawning behavior of CP stock

- Timing: 2018 had a long gap between 2<sup>nd</sup> and 3<sup>rd</sup> (final) spawn events
  - Spawning dates were 4/23, 5/4, and 5/30







# Acoustic Vegetation Surveys: What We Learned

- Most of Cherry Point has vegetation bands wider than 60 meters
- Some vegetation types are harder to detect with acoustics
- Seasonality of vegetation growth could drastically effect biomass estimates
- Some type of verification method needs to be used, such as drop cameras or ROV video
- Switching to a 200 kHz may help with data collection and analysis
  - Would allow the use of a smaller vessel, covering shallower habitat
  - Better penetration through vegetation canopy



# Future & Ongoing Projects

Genetics- SeaGrant award with Lorenz Hauser, UW

- DNR funded gill net samples- were fish caught all CP fish? (2017 gill net results expected in winter 2019)
- Finer stock delineation for all of SSS (beyond microsats)
- Where else are CP herring encountered (using MWT samples)

Larval fish surveys – major data gap

- Evelyn's data on light trap captures to date
- Utility of light traps for forage fish/herring?
- Light traps near Petrogas pier, Birch Head?



# CP herring and climate change research

## 1) 2016-18: Christina Villalobos and Brooke Love (WWU):

- Studied effects of lower pH (increased acidity) and temperature (10° vs. 16° C) on larval performance and survival and found:
- Fertilization rates exceeded 80% in all treatments
- Larval abnormalities averaged 17% with no significant difference between treatments
- Embryo mortality was significantly higher at 16° and at lower pH

## 2) 2019-20: Megan Russell and Brady Olson (WWU):

- Following up on Christina's work, Megan will compare the effects of elevated pH and temperature on larval herring from CP and Quilcene Bay (HC)
- Examine yolk exhaustion rates and feeding behavior at lower pH (increased acidity) and temperature (16 and 18° C)

# WDFW Staffing

## WDFW-Forage Fish staffing additions

- Moved Washington Conservation Corps (WCC) crew to Fish Program
  - Continue with Smelt and Sand Lance egg sampling
  - Provide additional help for herring surveys
- Added a seasonal technician to help with WCC and herring work
- Adding one Veterans Corp member to Mill Creek to help with herring work
- All this thanks to.....



# Questions?

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