

# Pacific Herring Fishery Management Plan Peer Review: Public Webinar - Sharing Results

October 9, 2018

- The webinar will start at 1:00pm PDT
- Participants are in listen-only mode until Q&A
- Questions? Technical difficulties? Use the chat

Access webinar materials, including the agenda and presentation:

<http://bit.ly/pacificherring>



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# Pacific Herring Fishery Management Plan Peer Review Public Webinar: Sharing Results

Tuesday, October 9, 1:00pm - 2:00pm

The Final Report of the Scientific and Technical Review  
Panel is available online!

<http://bit.ly/pacificherring>

# Webinar Goals

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To provide the opportunity for members of the Pacific herring community to engage with the peer review panel to learn about the final report and recommendations, share your science-based questions with the panel, and learn more about the peer review process

# Webinar Agenda

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- Welcome and introductions
- About this webinar
  - We are recording and will post on OST's website
  - Sharing results and recommendations
- Overview of the peer review process
- Peer review panel's recommendations
- Question and Answer
- Wrap-up and next steps

# Proposed Agreements

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- Participate in a respectful and constructive manner, where the interests of all participants are considered.
- Listen for understanding and openly discuss issues with others who hold diverse views; acknowledge and seek clarification; and verify assumptions.
- Provide clear, concise questions. Additional comments can be shared in written form.
- Personal attacks will not be tolerated.
- Put yourself on mute when not speaking.

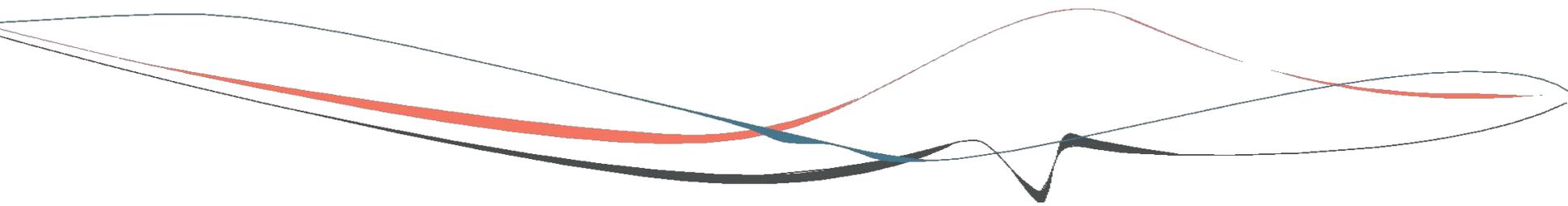
# Introductions

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## Peer Review Panel

- Dr. Elliott Hazen, UCSC and NOAA Fisheries (chair)
- Dr. Dan Okamoto, Florida State University
- Dr. Cody Szuwalski, UCSB and NOAA Fisheries
- *Dr. Rebecca Selden, Rutgers University*

# Peer Review Process



# Overview: Peer Review Process

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- Marine Life Management Act (MLMA) directs to ensure fishing is sustainable, collaborative, responsive to changing conditions, among others
- MLMA requires proposed management strategies for Fisheries Management Plans (FMPs) to undergo external, independent peer review

# Overview: Peer Review Process

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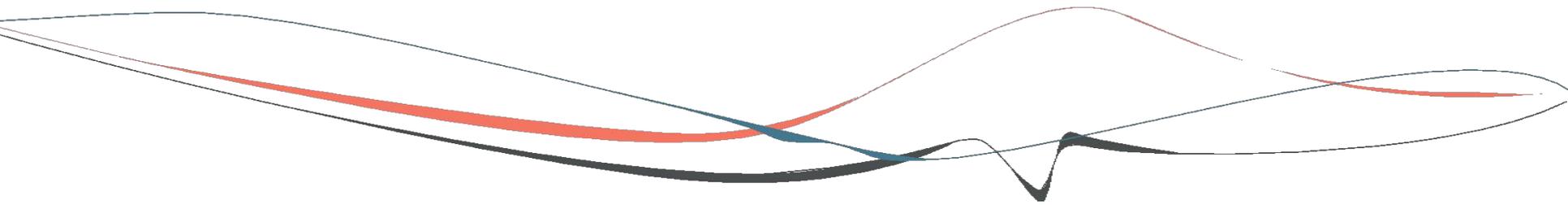
- CA Ocean Science Trust: independent convener
  - Objectivity, transparency, candor, efficiency, and scientific rigor
- Broad solicitation of potential reviewers with diverse expertise
  - Selected by the Ocean Protection Council Science Advisory Team Executive Committee

# Overview: Peer Review Process

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- Responsibility to make sure the management strategy in the draft FMP uses the best available science to inform management approaches
  - 4 remote independent meetings for discussion and report drafting
- February – October 2018
- Today's webinar concludes the peer review process

# Peer Review Panel Recommendations



# Overview: Panel recommendations

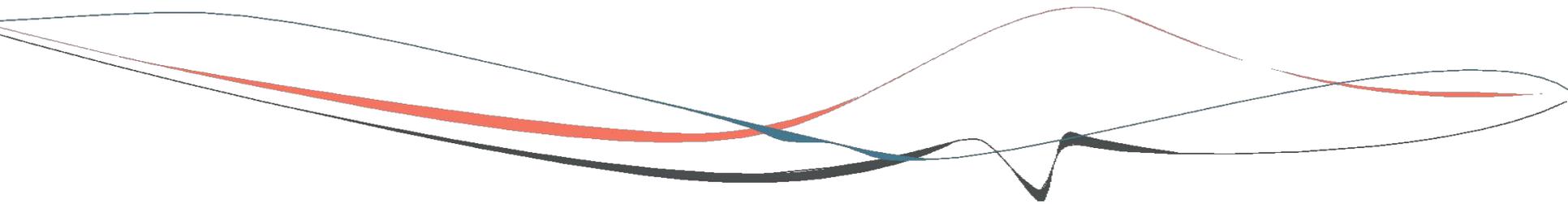
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Overall impressive effort developing a predictive spawning stock biomass model and moving towards incorporating ecosystem conditions.

- Section 1: Essential Fishery Information
- Section 2: Evaluation of Spawning Stock Biomass Thresholds and Harvest Rates
- Section 3: Evaluation of Ecosystem Indicators
- Section 4: Science Supporting Additional Conservation and Management Measures
- Section 5: Future Research and Methods

# Section 1

## Essential Fishery Information



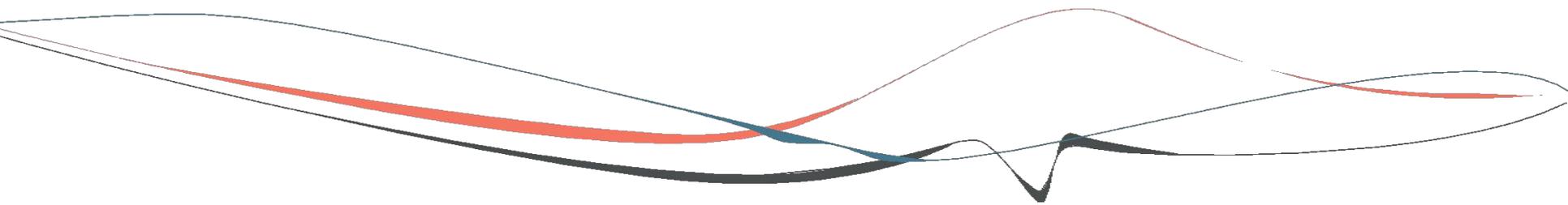
# Section 1

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- The representation of the existing literature on the biology of the stock was accurate and considered much of the core and relevant information.
- Given the shift to the predictive model, it's of utmost importance to continue the surveys of YOY.

# Section 2

## Evaluation of Spawning Stock Biomass Thresholds and Harvest Rates



# Section 2

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- The proposed predictive spawning stock biomass (SSB) model and harvest control rule (HCR) for setting quota are an improvement over previous methods and likely to meet sustainability goals.
- Developing a stock assessment would allow a framework for managers to ask more complicated questions about changes in management.

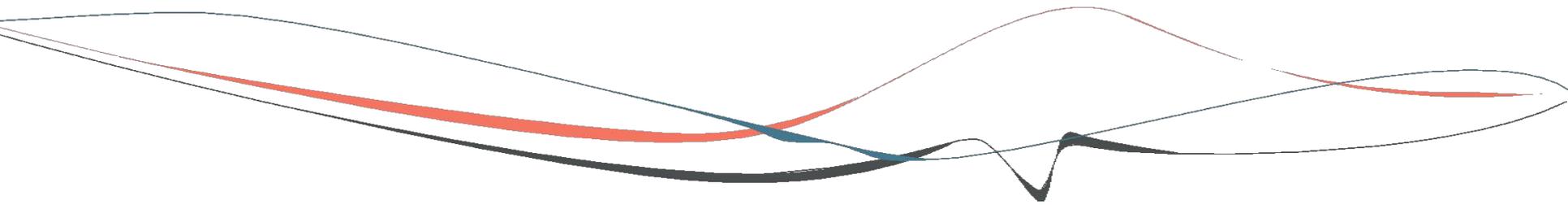
# Section 2

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- Future research on the ecosystem impacts (e.g. predator recovery) and economic impacts of closures in future Management Strategy Evaluations to inform the FMP would be valuable.

# Section 3

## Evaluation of Ecosystem Indicators



# Section 3

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- The ecosystem indicators section of the draft FMP is both quite forward-looking and useful in understanding the broader ecosystem context.
- Develop quantitative thresholds, calculate historical scenarios, and provide additional rationale for ecosystem indicators to support using ecosystem indicators to adjust quota

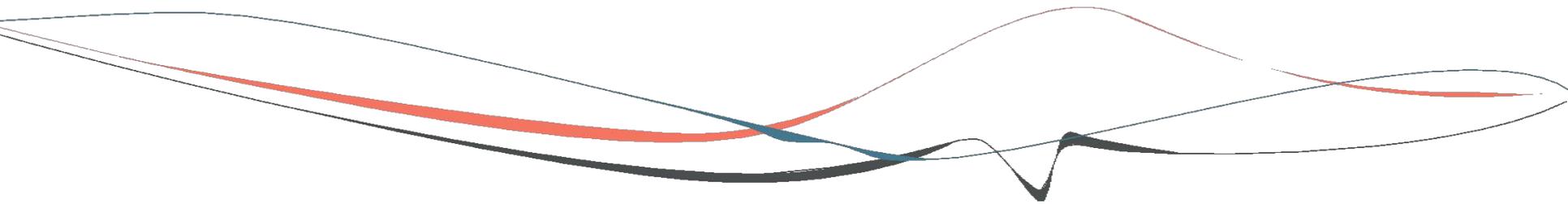
# Section 3

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- Evaluate HCRs corresponding to proposed quota adjustments based on ecosystem indicators to understand how a given increase or decrease in quota would relate to the performance metrics in the management strategy evaluation.

# Section 4

## Science Supporting Additional Conservation and Management Measures



# Section 4

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- Reviewers concluded that a sloped HCR with a 10% maximum exploitation rate is likely a sustainable strategy to limit the impact of the fishery on both the stock and the ecosystem.
- Thus, using catch restrictions as the main management measure is likely to be effective, and streamlining the start and end date regulations, as is proposed, will likely make this more enforceable.

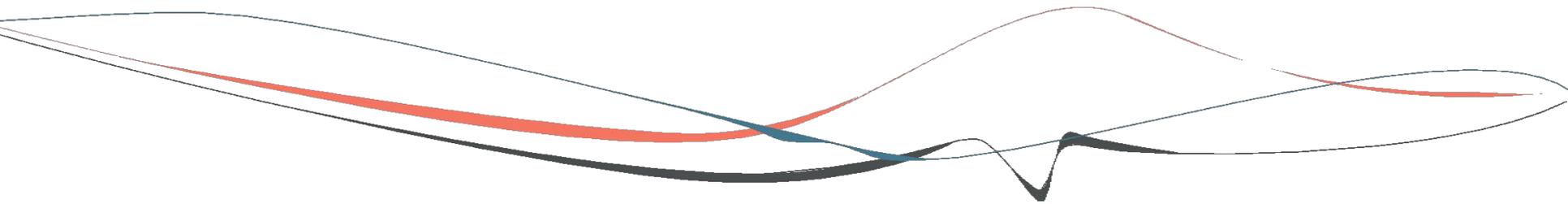
# Section 4

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- Minor recommendations to expand rationale, discussion, or explanations:
  - Provide further rationale for mesh size limits
  - Expand discussion of implications of targeting age 4+ on stock sustainability
  - Expand description of effort restrictions and its link to desired tonnage goals
  - Set more quantitative targets for when certain rules will be reconsidered

# Section 5

## Future Research and Methods



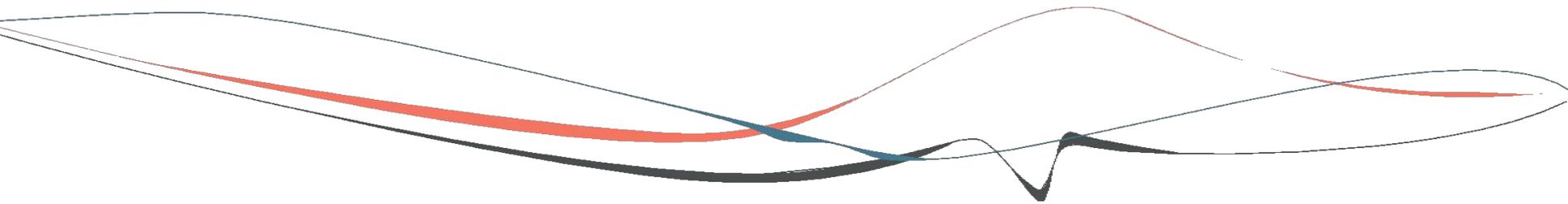
# Section 5

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- Prioritize sampling for recruitment
- Formally analyze predator-prey interactions to inform incorporation of ecosystem indicators
- Better characterize spatial variation in response to environmental change

# Question and Answer

- Please chat in your questions, or raise your hand using the icon or \*9 on the phone



# Looking Ahead

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- CDFW considering the next steps to address the peer review recommendations
- Upcoming Fish and Game Commission meeting

# Helpful Resources

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- California Department of Fish and Wildlife Pacific herring FMP webpage:  
<https://www.wildlife.ca.gov/Fishing/Commercial/Herring/FMP>
- Fish and Game Commission meetings schedule:  
<http://www.fgc.ca.gov/meetings/2018/index.aspx>
- Ocean Science Trust Pacific herring webpage:  
<http://bit.ly/pacificherring>

[Jessica.Williams@oceansciencetrust.org](mailto:Jessica.Williams@oceansciencetrust.org)

[Ryan.Bartling@wildlife.ca.gov](mailto:Ryan.Bartling@wildlife.ca.gov)



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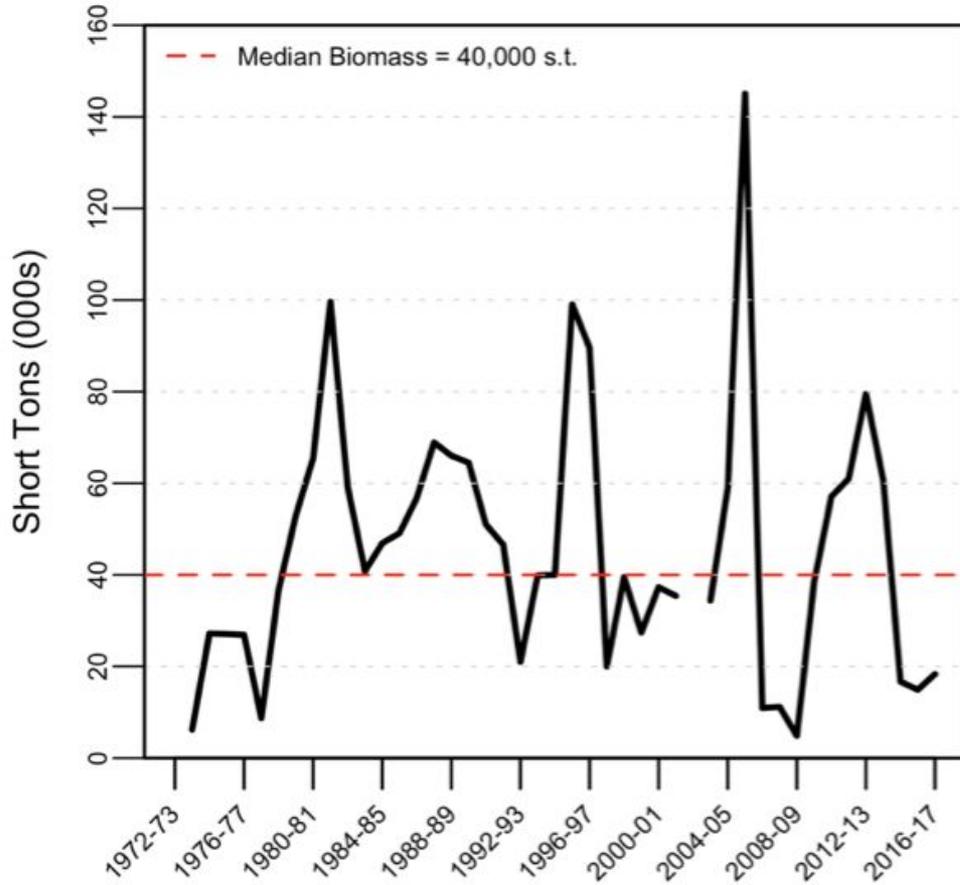
# Thank you!

On behalf of Ocean Science Trust  
and the Pacific herring Peer Review Panel

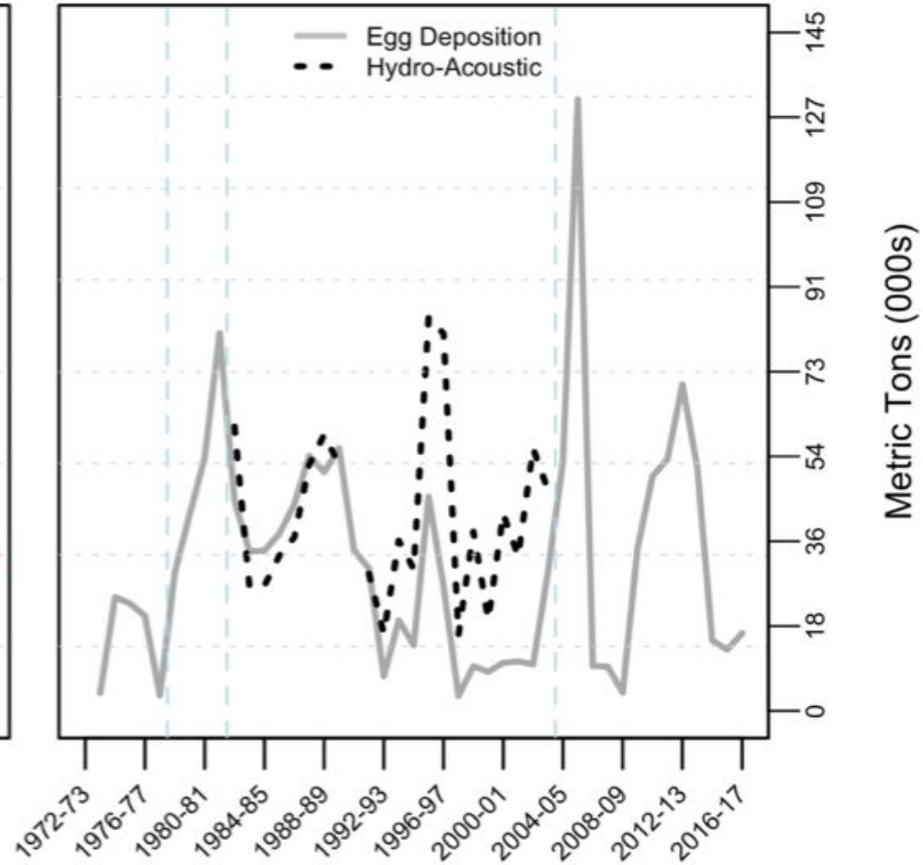
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# SF Bay Herring Biomass

## Final Reported Biomass (Includes Catch)



## Abundance Survey Estimates



# Intended Harvest Rate for San Francisco Bay

