

# Update on Whale Entanglements Along the U.S. West Coast

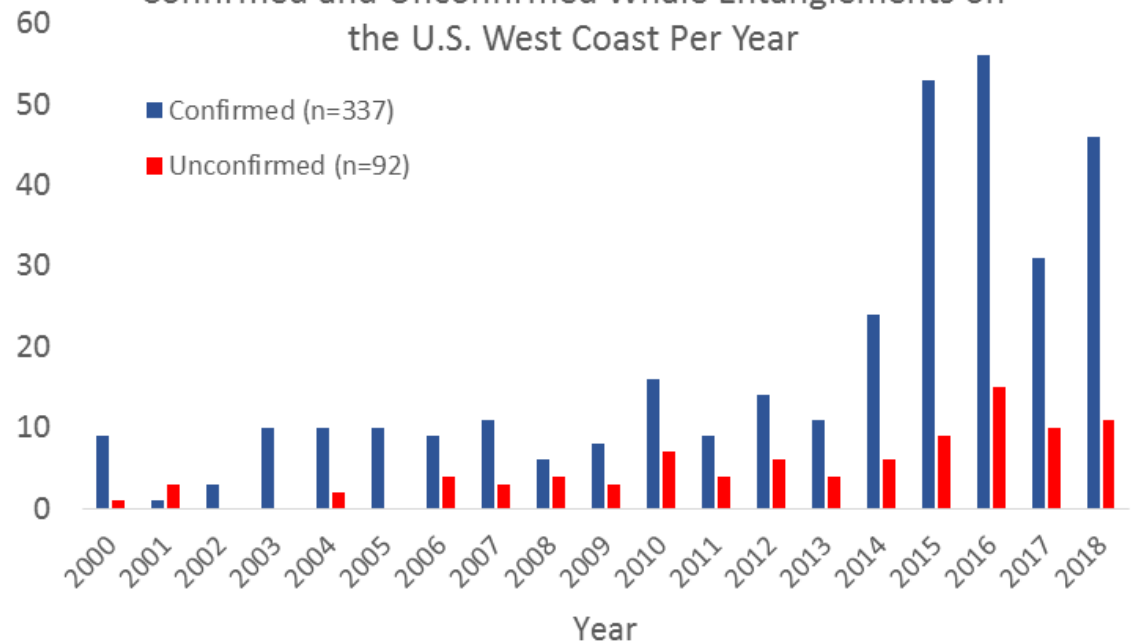
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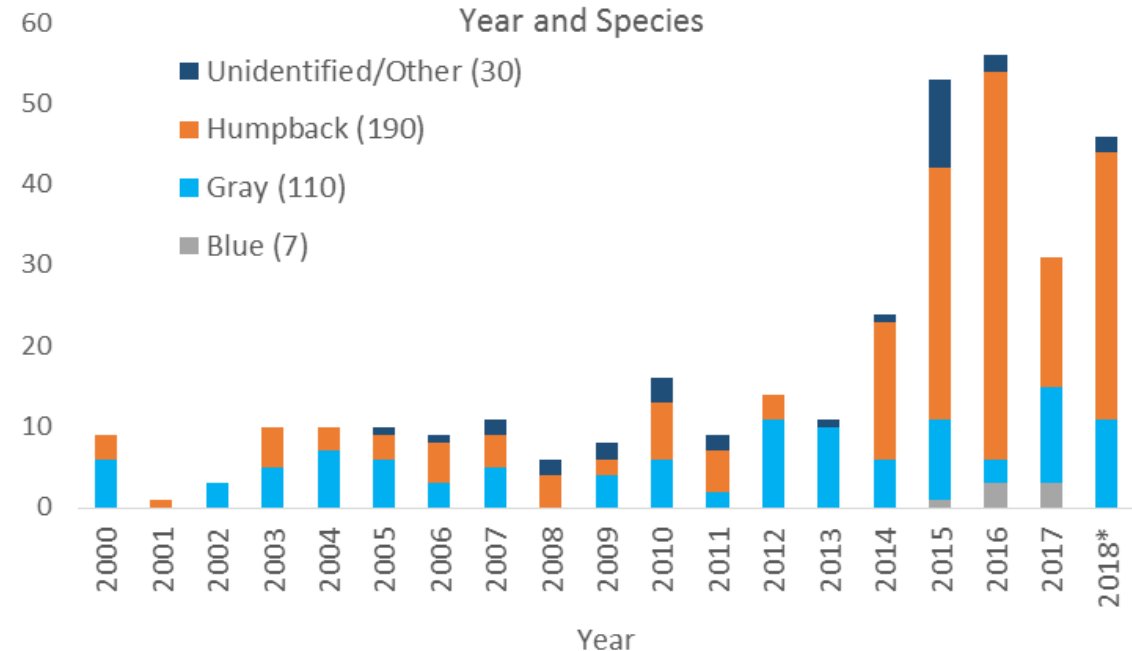
# WCR Whale Entanglements

- Dramatic increase in reports since 2014
- Driven by humpback whales, but now including blue whales
- High demand for updates and evaluation of incoming data
- Quality of reporting and data improving

Confirmed and Unconfirmed Whale Entanglements on the U.S. West Coast Per Year



Confirmed Whale Entanglements on the U.S. West Coast Per Year and Species



# Sources of Entanglement

In 2018, 24 of the 46 confirmed reports were identified as associated with specific fisheries or gear type (Table 2). This includes gear identifiable to state, tribal, and federally-managed fisheries occurring off the coasts of Washington, Oregon, and California. Washington, Oregon, and California.

**Table 2.** Confirmed sources of whale entanglements in 2018.

| FISHERY   | NUMBER OF REPORTS      |
|---|------------------------|
| California Dungeness crab commercial trap fishery                             | 7 (7 humpback)         |
| Washington Dungeness crab commercial trap fishery, including tribal fisheries | 5 (3 gray, 2 humpback) |
| Oregon Dungeness crab commercial trap fishery                                 | 2 (1 gray, 1 humpback) |
| Commercial Dungeness crab commercial trap fishery, state unknown              | 1 (1 humpback)         |
| California commercial spot prawn trap fishery                                 | 1 (1 humpback)         |
| California recreational spot prawn trap fishery                               | 1 (1 humpback)         |
| Gillnet fisheries**   | 7 (3 gray, 4 humpback) |

NOAA permit #16111



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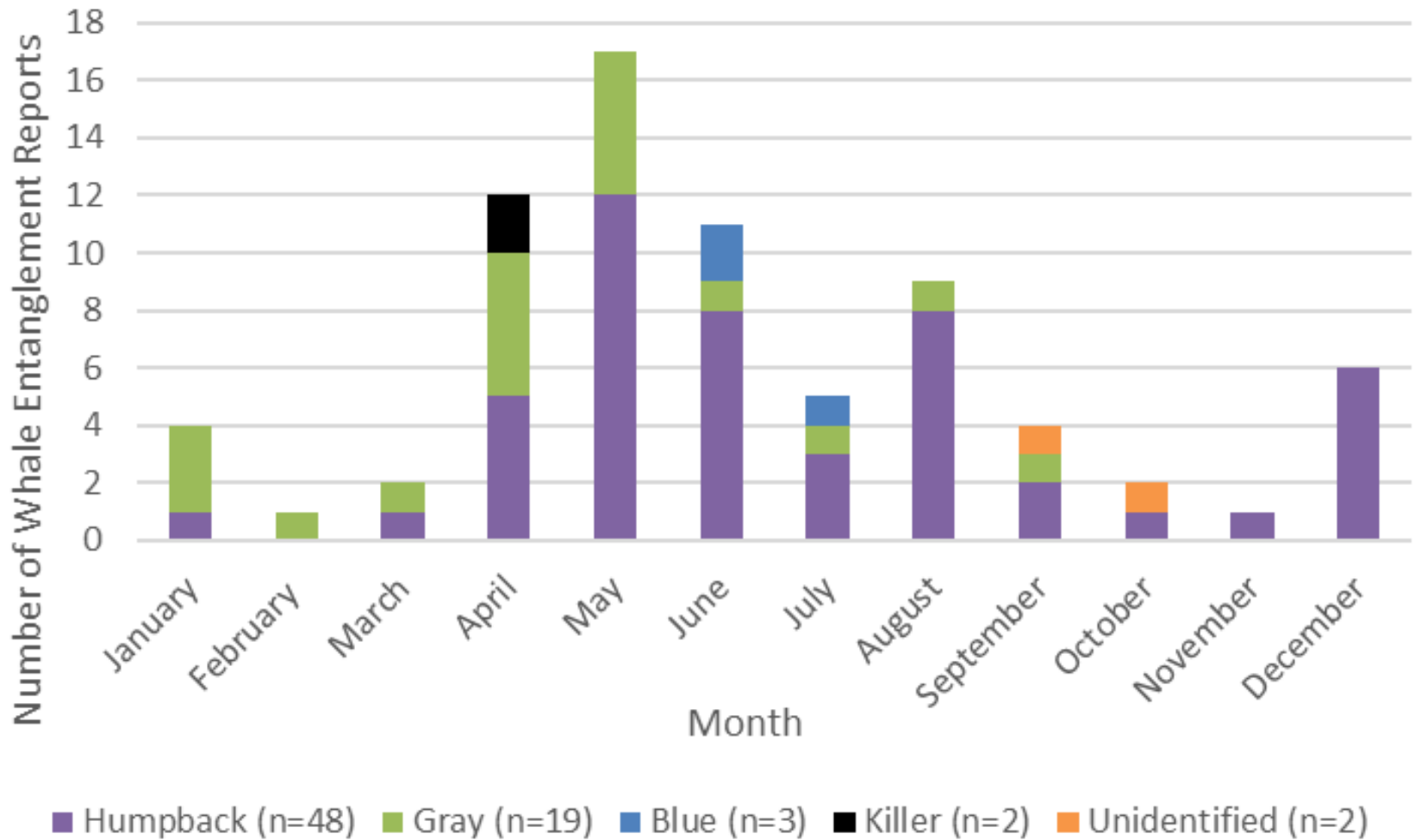
# 2019 summary

**\*\*preliminary data through August 23, 2019\*\***

- **17 confirmed entangled whales, 1 unconfirmed reports, 18 total reports**
  - Gray whales: 6 confirmed, 1 unconfirmed, 7 total
  - Humpback whales: 10 confirmed, 10 total
  - Minke whale: 1 confirmed, 1 total
- **Confirmed fisheries associated with entanglements: 7 reports**
  - Commercial Dungeness crab: 6 total
    - 2 CDFW (2 humpback whale)
    - 1 ODFW (1 humpback whale)
    - 1 WDFW (1 humpback whale)
    - 1 state unknown (1 gray whale)
  - Gillnet: 2 (2 gray whales)
- **Reporting location**
  - California: 10 confirmed reports, 10 total reports
  - Oregon: 2 confirmed reports, 1 unconfirmed, 3 total reports
  - Washington: 4 confirmed report, 4 total report
  - Mexico: 1 confirmed report (humpback with gear from OR)



# Timing of Commercial and Recreational Dungeness Crab Whale Entanglements



# Where Are We At?

- Management under MMPA
  - Potential Biological Removal (PBR) for CA/OR/WA humpback whales is 16.7 **seriously injured or killed** per year (entanglements alone essentially > PBR)
- Humpback DPSs and blue whales protected by the ESA
  - ESA coverage
- All hands on deck
  - SWFSC/NWFSC
  - State Working Groups
  - Industry



# Where Do We Go From Here?



- ESA Section 10
  - Permits incidental take of ESA-listed species during State/private actions
- Habitat Conservation Plan (HCP)
  - Management plan proposed by applicant to address issue
- NMFS has not previously issued one for ESA-listed marine mammals

# Section 10 Permit and Conservation Plan

Fundamental Conservation Plan elements/permitting steps:

- (i) Measures to minimize impacts to the extent practicable (funding)
- (ii) Monitoring (funding)
- (iii) NEPA - evaluate alternative actions the applicant considered and why they are not being utilized (funding)
- (iv) Compliance with ESA jeopardy standard
- (v) MMPA compliance – Negligible Impact Determination
- (vi) Stakeholder and public engagement (funding?)



# Key Challenges and Needs

- Resources for States and NMFS to complete ITP
- Coordination across 3 states
  - Gear Marking
  - Data Collection/Sharing
  - Applications/Proposals
  - Plan Measures/Approach?
- Resolution of Big Questions
  - Stocks vs DPS
  - Unknowns
  - Effectiveness of Measures
- Adaptive Approach
- Gear Development

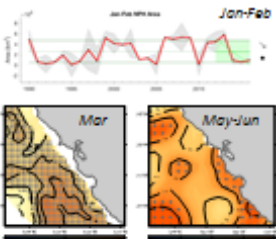


# Scientific Support Needed

2016

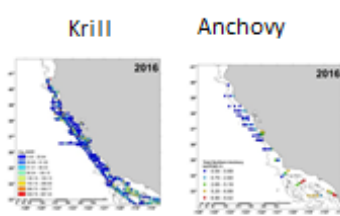
"A Year in the Life of a Hungry Humpback Whale"

## Winter-Spring Ocean Conditions



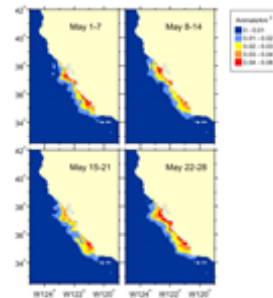
- A **weak** upwelling year
- By February, we could see that the NPH (North Pacific High) remained very low for the third year in a row.
- March: Depth of the 26.0 isopycnal was deeper than average throughout region
- May-Jun: SST was warmer than average throughout the entire region

## Spring Prey Availability (late Apr – early Jun)



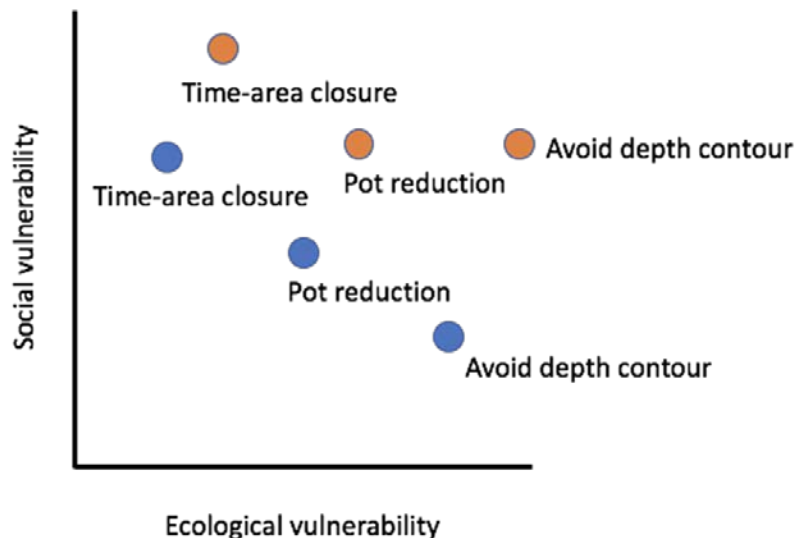
- Krill abundance low
- Anchovy abundant in the south and concentrated inside Monterey Bay
- Few concentrations along the shelf-break

## Modeled weekly whale densities for May



- Concentrated 'hotspots' very close to shore in Monterey Bay, Gulf of Farallones and Morro Bay during early May
- Distribution broadens along central coast during late May

- Dynamics of whales, fishing, environment - entanglements
- Risk Assessment
- Socio-Economics
- Forensic Analysis
- Photo ID/scarring
- Population assessment



CRC, 2018 NOAA permit #16111