

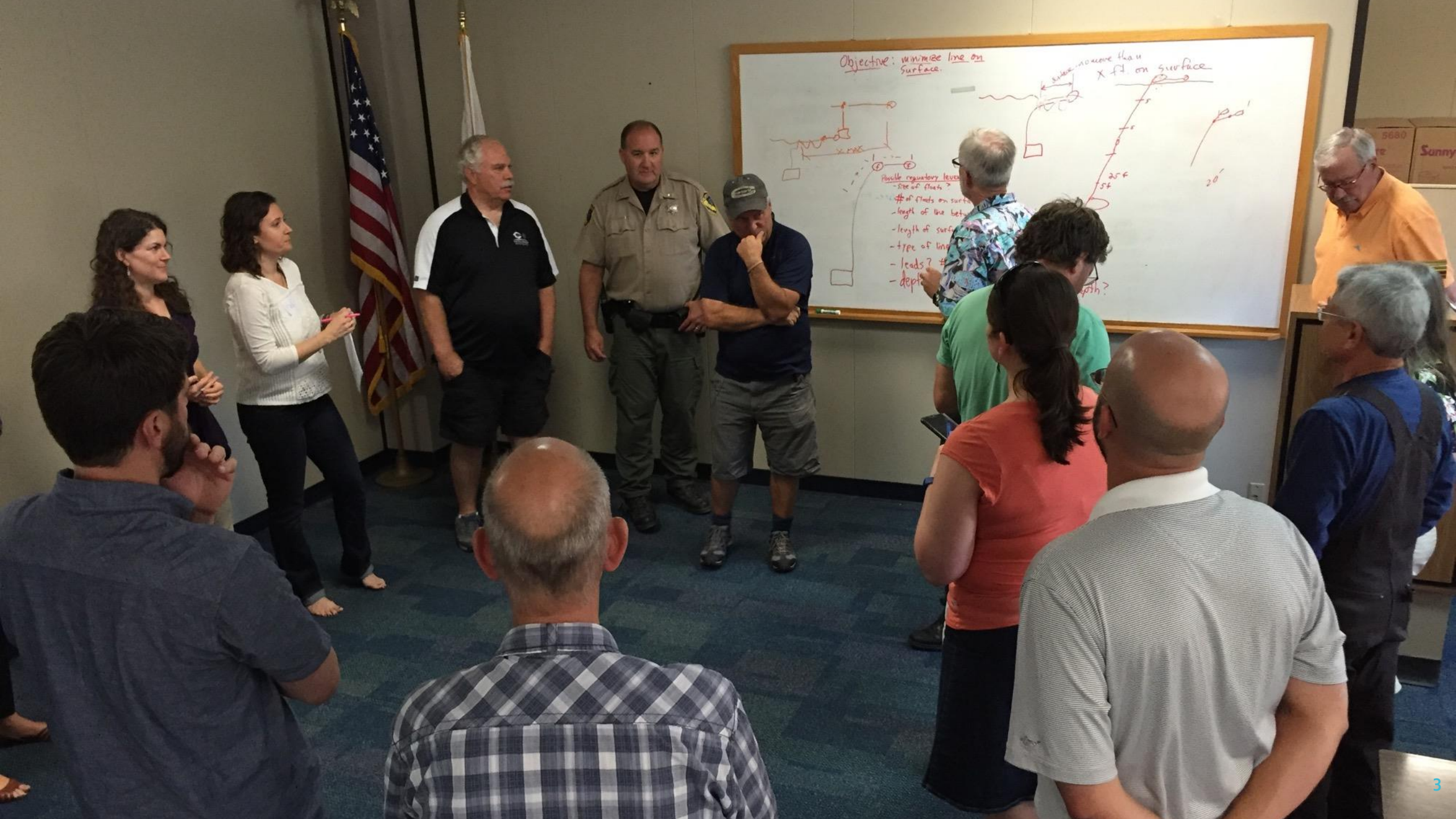
An Introduction: California Dungeness Crab Fishing Gear Working Group

Presentation by Working Group Admin & Participants

MMC | May 31, 2018 | Seattle, WA

WORKING GROUP: BACKGROUND

- Working Group established in Sept 2015 in response to increases in CA entanglements
 - Convened by state and federal agencies
 - Unique coalition of diverse stakeholders
- New approach to addressing whale entanglements
- Shared goal, thriving whale populations and a thriving Dungeness crab fishery



California Dungeness Crab Fishing 2017-18 Best Practices Guide to Minimize Whale Entanglement Risk



Support for Best Practices

National Marine Fisheries Service (NMFS) has confirmed significant increases in large whale entanglements over the last few years, and specifically in California Dungeness crab fishing gear. This situation threatens the stability of the fishery and coastal fishing communities. In response, a Working Group has developed this Best Practices Guide to highlight voluntary actions believed to be an important step towards reducing whale entanglements.

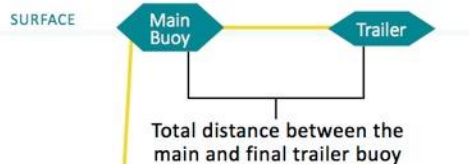


MMHSRP Permit# 18786 | Stephanie Marcos

BEST PRACTICES

- **No excess lines should be floating at the surface.** Floating line should only be between the main buoy and trailer.
- **When changing set location across depths, adjust the length of trap lines** by adjusting shots (i.e., measured length of line) to maintain taut vertical lines.
- **Avoid setting gear in the vicinity of whales** whenever possible.
- **Maintain gear to ensure lines and buoys are in good working condition** and will not break under natural conditions causing gear to become lost or irretrievable. Lost gear contributes to marine debris and increases risk of whale entanglements.
- **All gear should be clearly marked** consistent with applicable regulation. All gear should be maintained so markings are clearly legible to facilitate correct identification of the origins of the gear involved in entanglements.
- **Use the minimum amount of scope** required to compensate for tides, currents and weather. Whales are more likely to become entangled with slack lines, which can potentially create a "floating snare".
- **Remove all fishing gear by the end of the season** when gear is no longer allowed in the water.

BUOY SET-UP BEST PRACTICES



RECREATIONAL	shortest as possible, max of 2 fathoms (12ft) at any depth
COMMERCIAL	
Inside 30 fathoms	shortest as possible, max of 3 fathoms (18ft)
30-50 fathoms	shortest as possible, max of 4 fathoms (24ft)
Outside 50 fathoms	shortest as possible, max of 5 fathoms (30ft)

Minimize # of buoys in set up—no more than 1 trailer buoy inside 30 fathoms

Keep line between trap and main buoy running vertical and taut



1 fathom= 6 feet

Excess Slack Surface Line and Whale Entanglements

Ocean users, including members of the fishing community, are seeing a shift in fishing practices towards increased surface line and the use of multiple surface buoys. During a review of documented entanglements from recent years, fishermen, disentanglement responders, and others see a potential connection between slack surface line and the number of trailer buoys contributing to whale entanglements.

Efforts to evaluate the effectiveness of these voluntary recommendations in reducing the risk of whale entanglements will be made to inform future recommendations and/or management action. These best practices, together with investigating the co-occurrence (or overlap) between whale and fishing effort, are steps the Working Group is taking to address this challenging and complex issue.

For more information about the California Dungeness Crab Fishing Gear Working Group, including a fact sheet, background materials, meeting summaries, recommendations memos, and key resources like this Best Practices Guide, visit opc.ca.gov/whale-entanglement-working-group.

Taking these important, proactive steps to voluntarily reduce slack surface line will help to provide continued opportunities to harvest crab and maintain the fleet's access to the resource.



Reporting Entangled Whales

Report entangled whales IMMEDIATELY to the NMFS whale entanglement response hotline at 1-877-SOS-WHALE (1-877-767-9425) or hail the U.S. Coast Guard on Channel 16. If possible, stand by for responders.

Photographing Entangled Whales (>100 yards away)

WHALE: side view of dorsal fin (or hump); flukes (especially if underside is raised); head; any part of the body where gear may be present.

ENTANGLEMENT: buoy(s); tags; lines on the body; trailing lines (including distance from whale); netting (if present); other gear if present.

Respond Promptly if Contacted by NMFS or CDFW

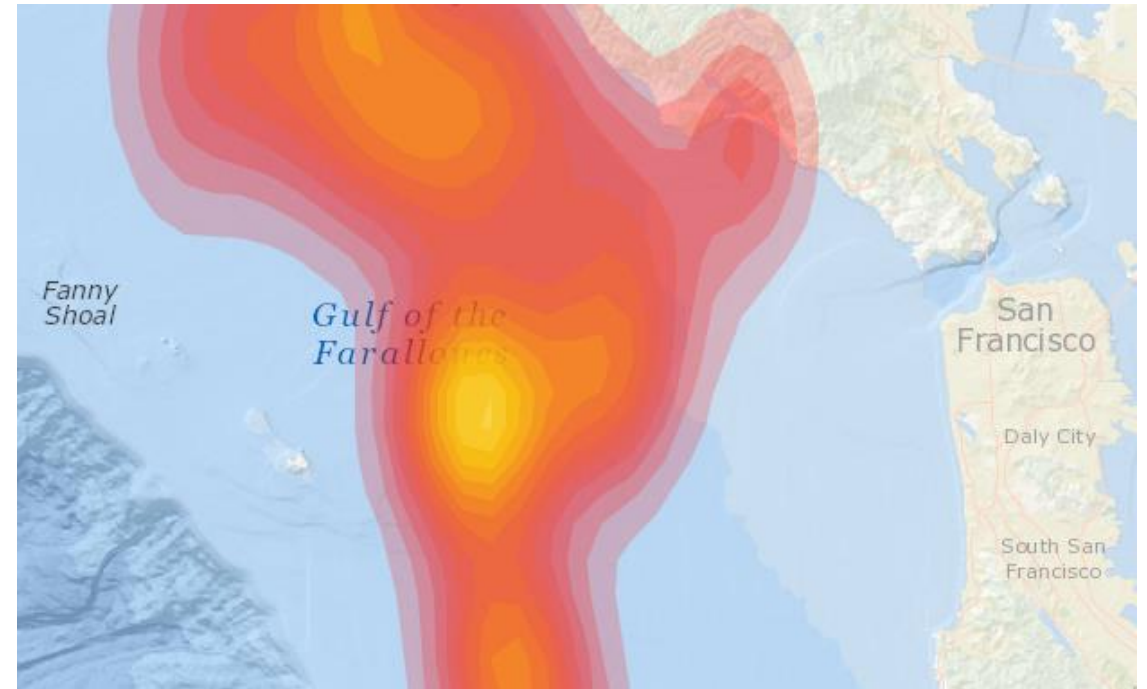
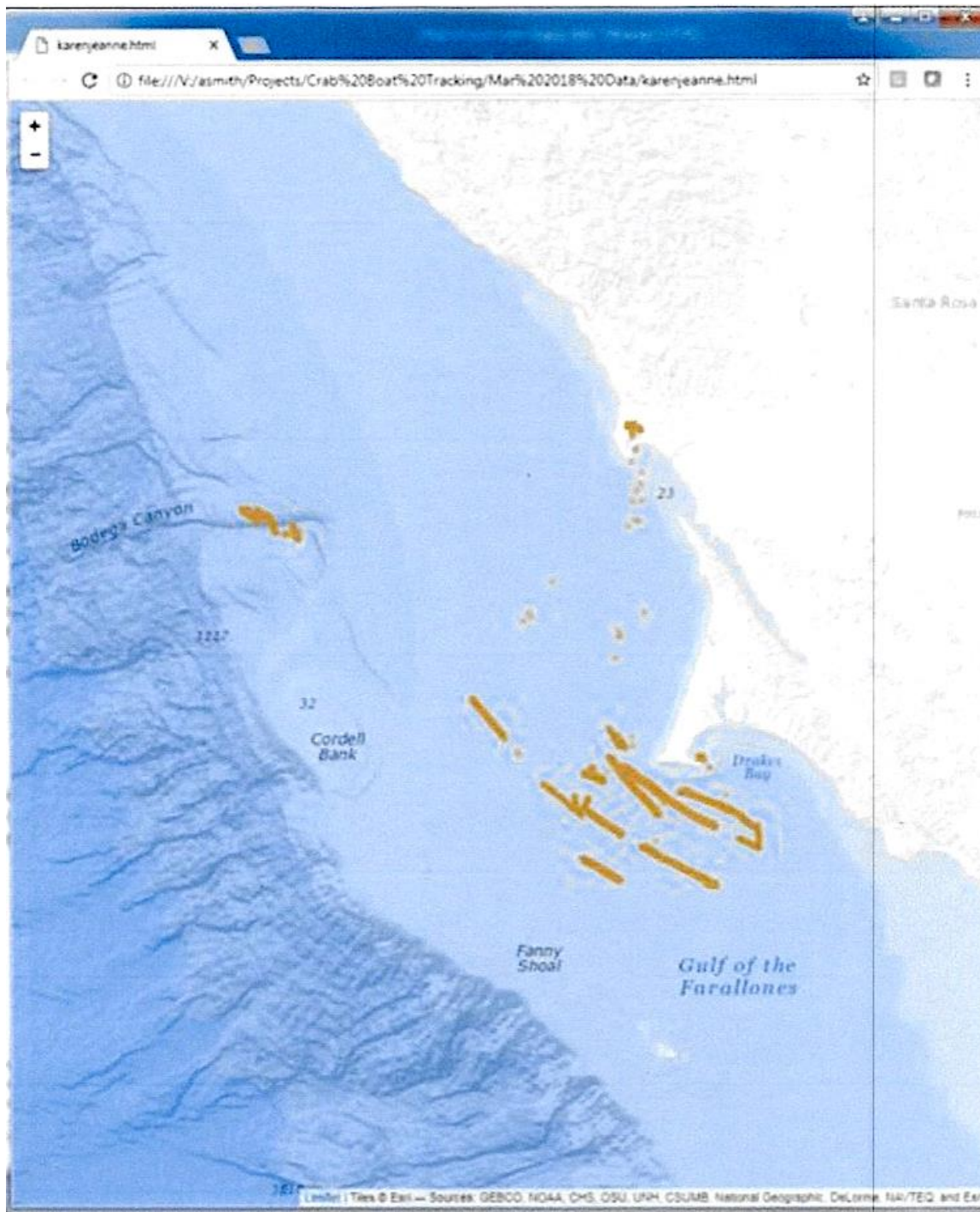
If you are contacted by NMFS, California Department of Fish and Wildlife (CDFW), or any other government agency regarding a whale entangled in your gear please respond and provide as much information as possible about your fishing gear and practices. Gaining a better understanding of where, when, and how entanglements are occurring is essential in working to prevent entanglements in the future.

If you have suggestions for reducing entanglements in fishing gear, contact Dan Lawson, NMFS Protected Resources Division, at Dan.Lawson@noaa.gov or 562-980-3209.

The Best Practices Guide was developed by the California Dungeness Crab Fishing Gear Working Group.



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FORAGE & OCEAN CONDITIONS

- Working Group funded a project led by Jarrod Santora, UC Santa Cruz
 - Synthesis of 2013-2016 forage data
 - Focus on humpbacks (krill/anchovies)
- Distribution of humpbacks determined by available food
 - Low krill abundance and high nearshore anchovy abundance
 - Low concentration and patchiness of krill/anchovy
 - High diversity of spp

RISK ASSESSMENT & MITIGATION PROGRAM (RAMP)

- Identify circumstances that elevate risk and develop pathways to address
- Risk assessment factors: forage/ocean, whale concentrations, fishing dynamics, entanglements
- Fishermen, agencies, ENGOs, researchers working together to monitor, research, and develop recommendations

Core Team & Agencies Review Factors That May Elevate Risk
(e.g., pre-season)

DELAY: Is there indications that the season will be delayed beyond 2/1?

FORAGE: Are there indications of anomalous ocean/forage conditions during the upcoming season?

WHALES: Are humpback whale concentrations moderate to high when the CA Dungeness crab fishery opens?

ENTANGLEMENTS: Are humpback whale entanglements at elevated levels this past year/spring?

If "no" to all questions, ET is **NOT convened** and "green" measures resume

If "yes" to any one question, ET is **convened**

Identify/request additional representation as needed
Evaluate available data

Discuss management options to address risk

Management Measures Toolbox (MMT)

Low Risk

Moderate Risk

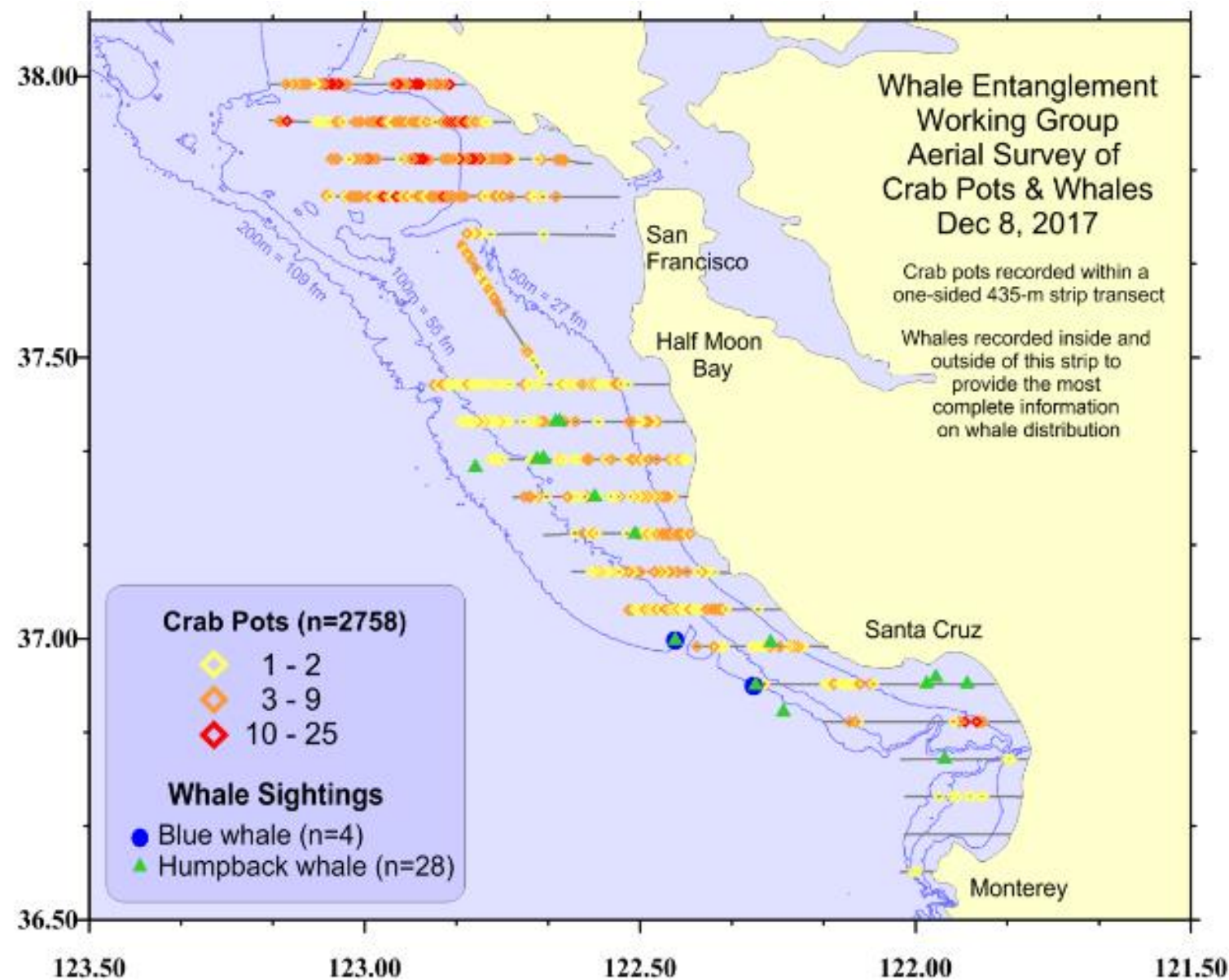
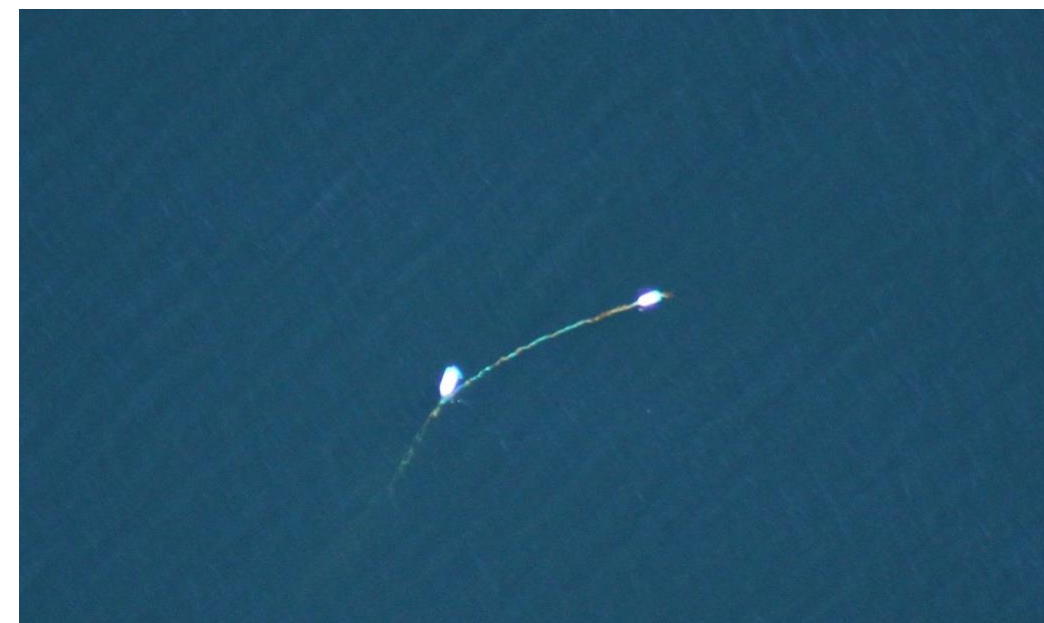
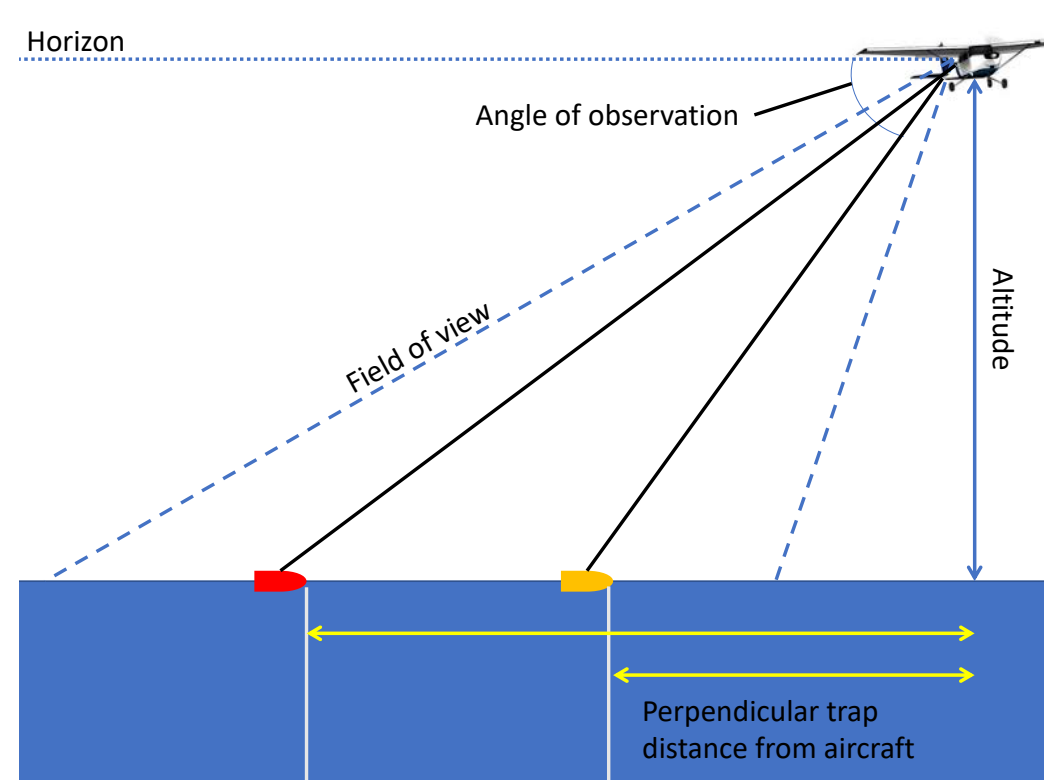
High Risk

Agencies seek/provide additional information

Request information to verify/clarify situation

Evaluation Team
Determine if management action is warranted
Relay recommendation(s) to Director

Agencies/Director
Implement ET fishery management recs
Notify the fleet





Fiomarine Fiobuoy AC100
Designed in Australia

← Fiomarine
4 successful deployments
and retrievals (60-240 ft)

→ Desert Star
1 successful deployment;
did not pop up
on 2nd attempt



Desert Star ARC-1XD
Designed in California

RAMP 2017-18 PILOT: LEARNING TO DATE

- Coordination and communications to date
 - On-the-water updates
 - Preseason and midseason risk assessments
 - Regular updates to fishing and whale leadership
- Continuing to fine-tune risk factors
- Need to make clearer connections between evaluating risks and identifying possible management measures
- Commitment to working with the fleet, researchers and others to support data collection efforts

LOOKING AHEAD: WORKING GROUP

- 2017-18 RAMP Pilot evaluation
 - Postseason risk assessment, July 2018
 - Additional Aerial Surveys
- Development of a complete RAMP
 - Meetings in August and September 2018
- Additional research
 - Whale/forage models

LOOKING AHEAD: PARTNER INITIATIVES

Fishermen-led gear
recovery programs



Smart buoy prototypes
Blue Ocean Gear



LOOKING AHEAD: PARTNER INITIATIVES

- Ongoing collaboration opportunities
 - West Coast coordination (OR, WA)
 - Whale community
 - NOAA trainings, first responders
 - Other CA fisheries
- Advancing 2017-18 Working Group recommendations
 - Current legislation



MORE
INFO &
THANK YOU!

Working Group Website

<http://www.opc.ca.gov/whale-entanglement-working-group>

Working Group Email

info@cawhalegroup.com