

National Marine Sanctuaries  
National Oceanic and Atmospheric Administration



NATIONAL MARINE  
SANCTUARIES

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MONTEREY BAY

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## Overview:

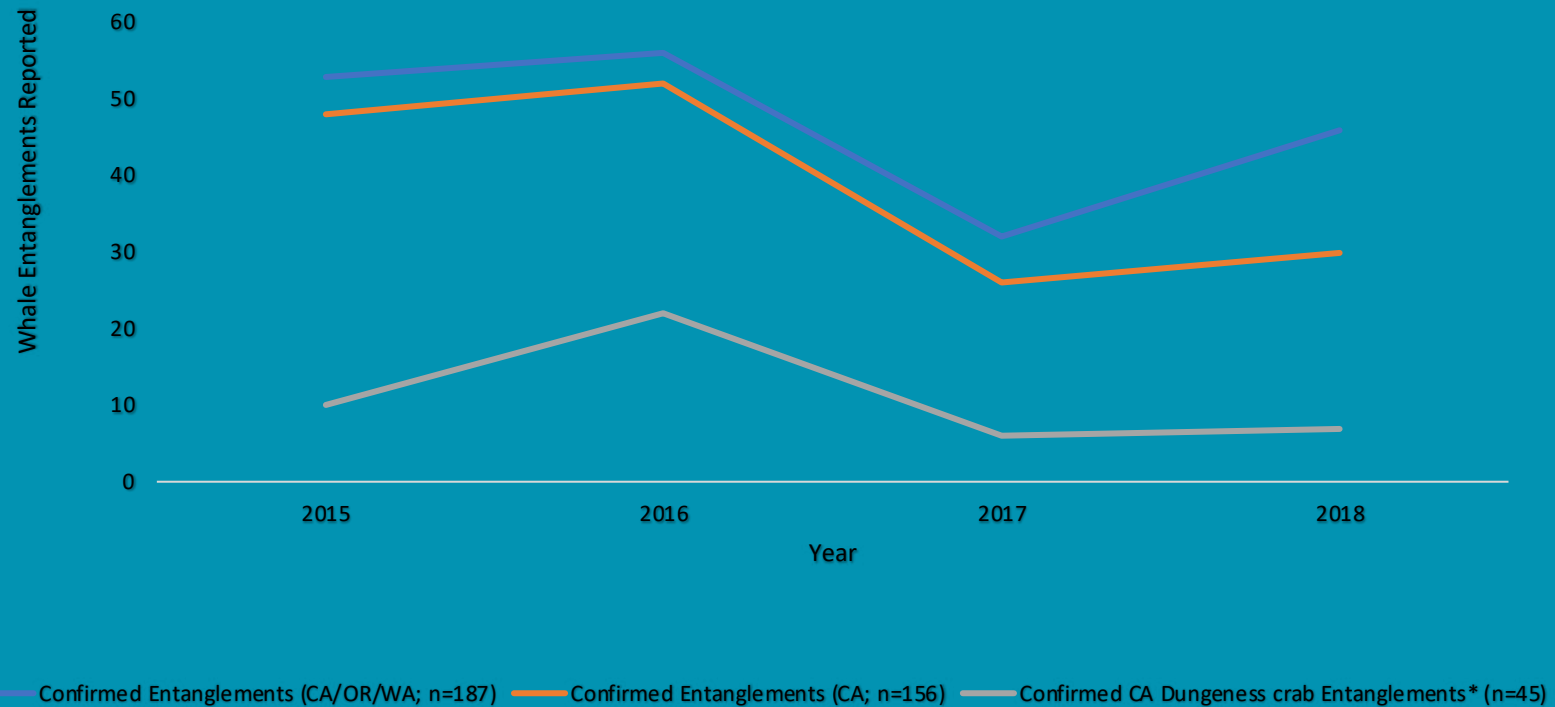
- Whale Entanglement numbers
- Working Group & Risk Assessment & Mitigation Program (RAMP)
- Data Sources for RAMP
- Gear Innovation and Testing
- Response to Entanglements

# Whale Entanglements: West Coast Summary

	Confirmed Entanglements (CA/OR/WA; n=187)	Confirmed Entanglements (CA; n=156)	Confirmed CA Dungeness crab Entanglements* (n=45)	% of CA Entanglements	
2015	53	48	10	21%	
2016	56	52	22	42%	
2017	32	26	6	23%	
2018	46	30	7	23%	
<b>Totals</b>	<b>187</b>	<b>156</b>	<b>45</b>	<b>29%</b>	

\* Includes 2 recreational entanglements

# Whale Entanglements: West Coast Summary



Source: NMFS Office of Protected Resources

# Whale Entanglements: 2019 West Coast Summary

**13 confirmed entangled whales, 2 unconfirmed reports, 15 total reports**

- **Gray whales: 6 confirmed, 1 unconfirmed, 7 total**
- **Humpback whales: 6 confirmed, 1 unconfirmed, 7 total**
- **Minke whale: 1 confirmed, 1 total**

**Confirmed fisheries associated with entanglements: 7 reports**

- **Commercial Dungeness crab: 5 total**
  - **1 CDFW (1 humpback whale)**
  - **1 ODFW (1 humpback whale)**
  - **1 ODFW or PS WDFW (1 gray whale)**
  - **2 WDFW (2 humpback whale)**
- **Gillnet: 2 (2 gray whales)**

**Reporting location**

- **California: 7 confirmed reports, 1 unconfirmed, 8 total reports**
- **Oregon: 2 confirmed reports, 1 unconfirmed, 3 total reports**
- **Washington: 3 confirmed report, 3 total report**
- **Mexico: 1 confirmed report (humpback with gear from OR)**

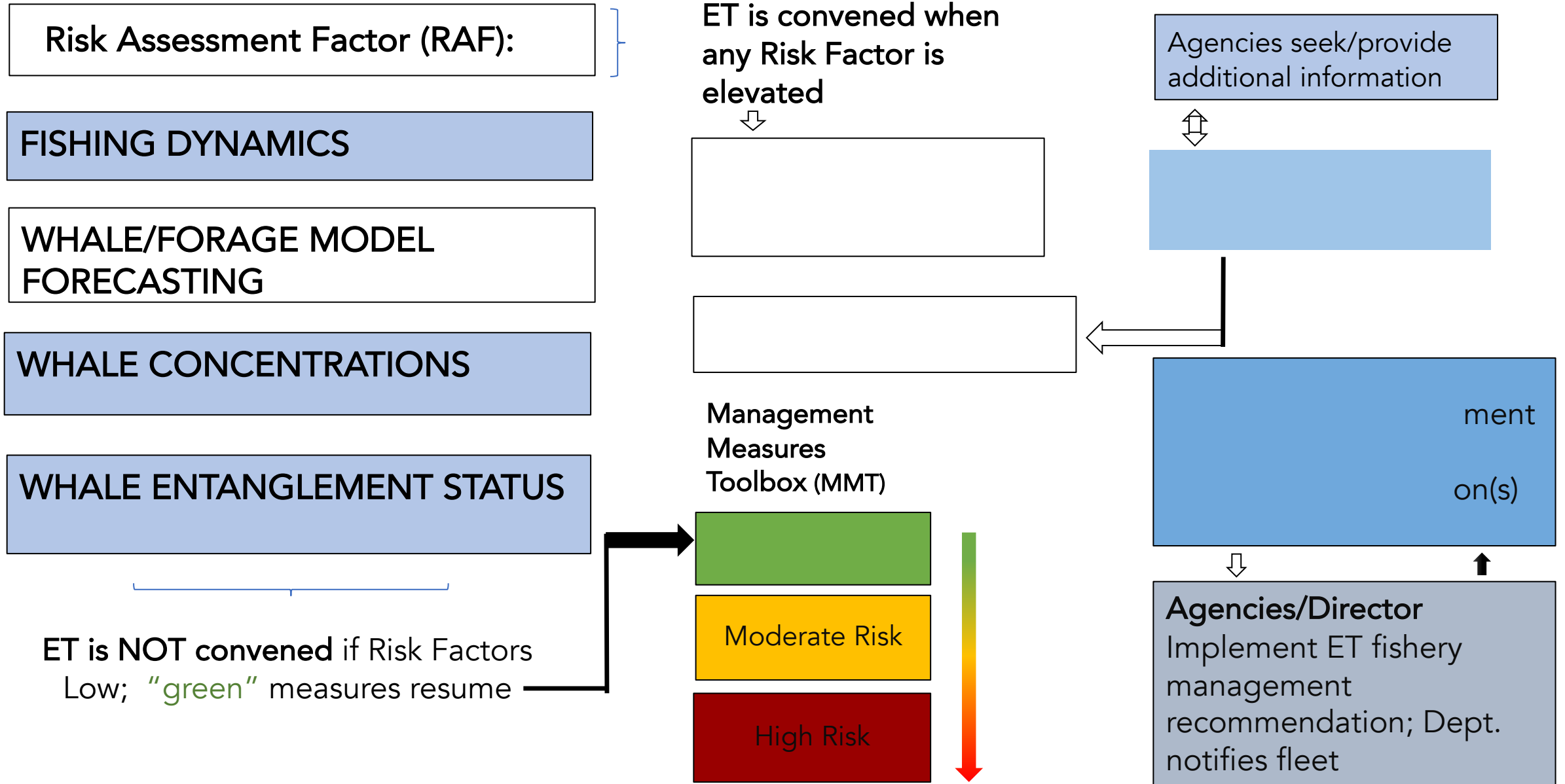


**Source: NMFS, preliminary data through 8/6/19**

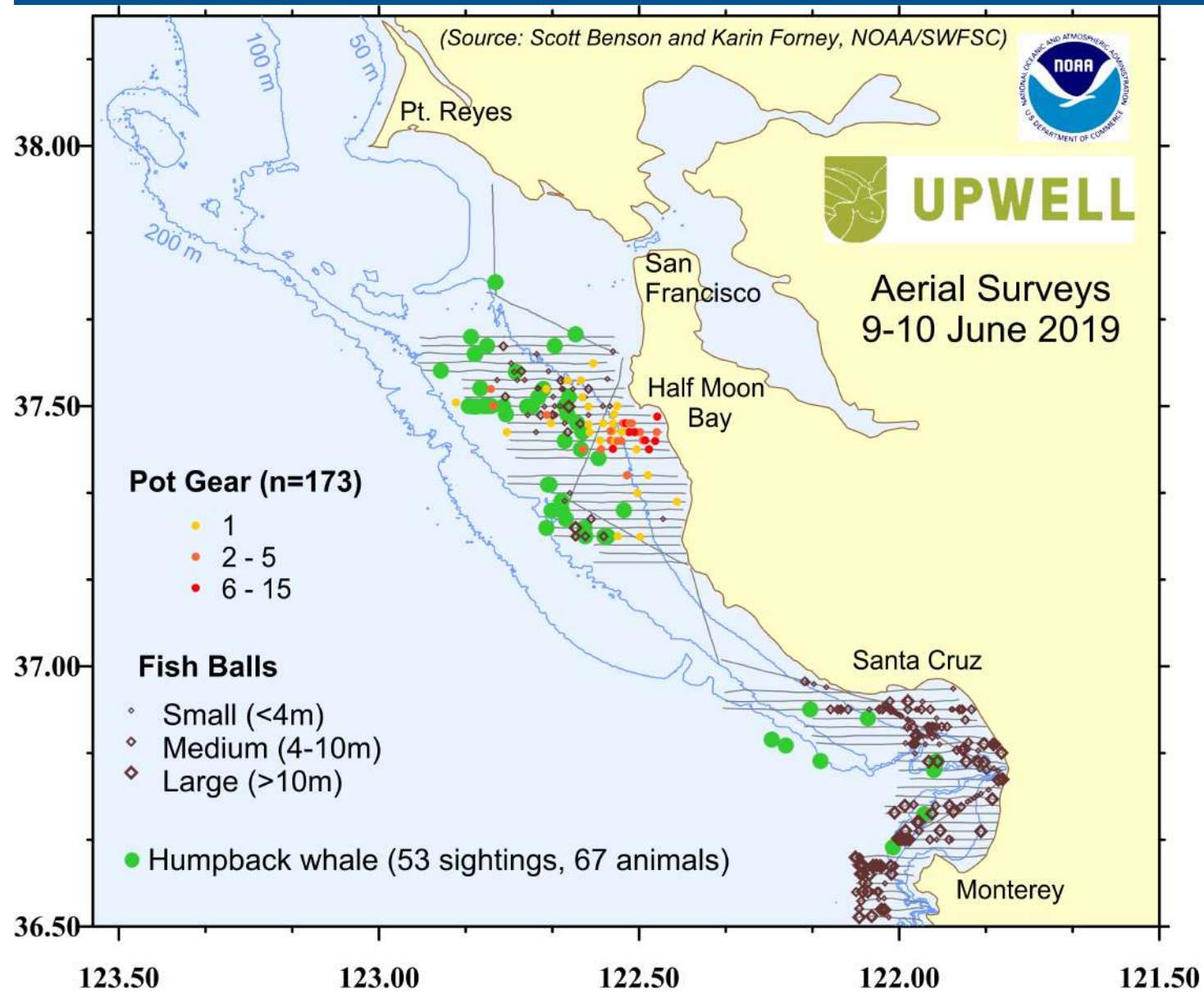
# Whale Entanglements: Prevention

- ❖ Serve on Dungeness Crab Fishery Working Group (led by NMFS, CDFW and includes commercial and rec fishermen and NGOs). Work includes:
  - ❖ Development of a **Risk Assessment & Mitigation Program (RAMP)** to assess entanglement risk to humpback and blue whales from fishing gear, and are conducted pre, mid, late, and post season; **four risk factors are # entanglements, forage/ocean conditions, whale concentrations & fishing dynamics**
  - ❖ Data collection to identify overlap between whale densities and gear locations, to better forecast risk, including whale watch crowd sourcing data, aerial surveys, fishermen observations, ACCESS cruises and other vessel surveys, CENCOOS
  - ❖ Gear innovation projects, such as “ropeless” traps

# RAMP PROCESS



# Data Sources

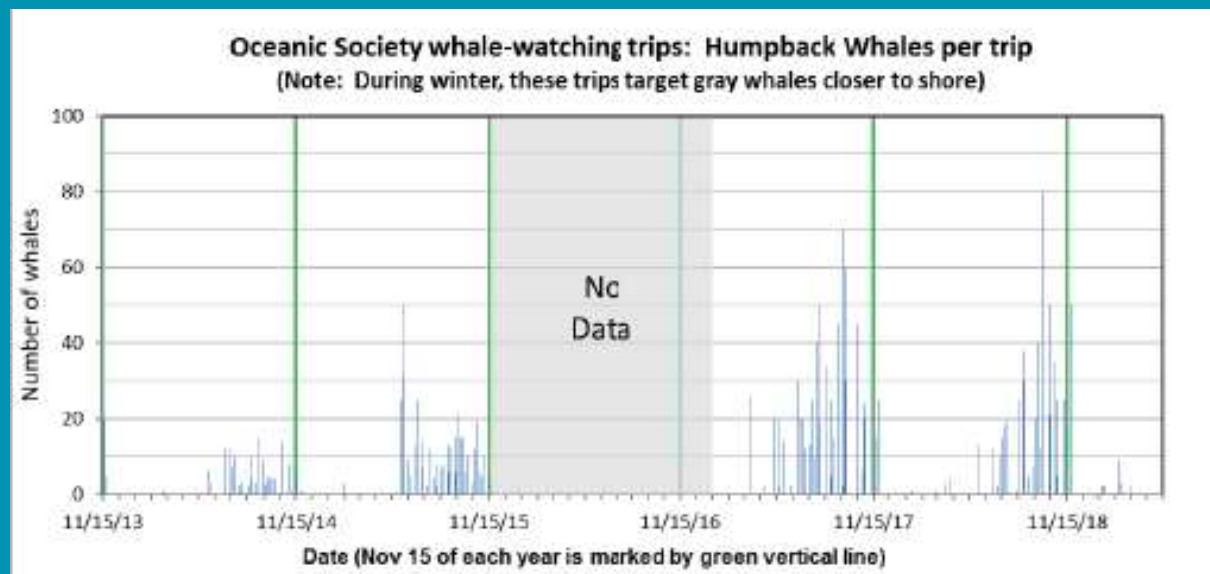
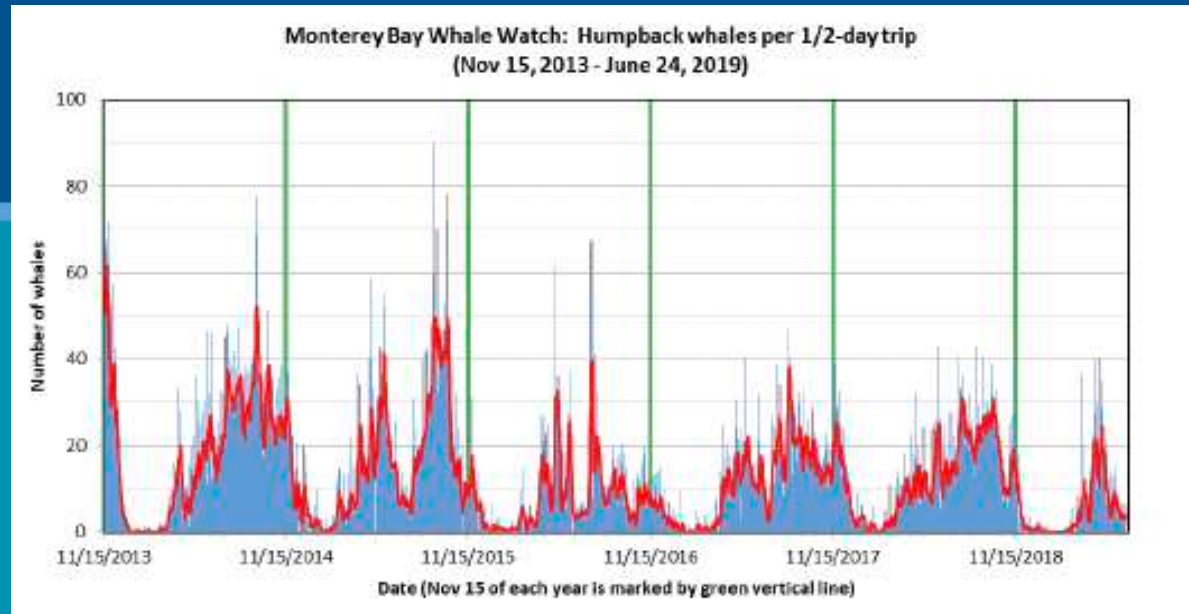


## Aerial Surveys by NOAA NWFS



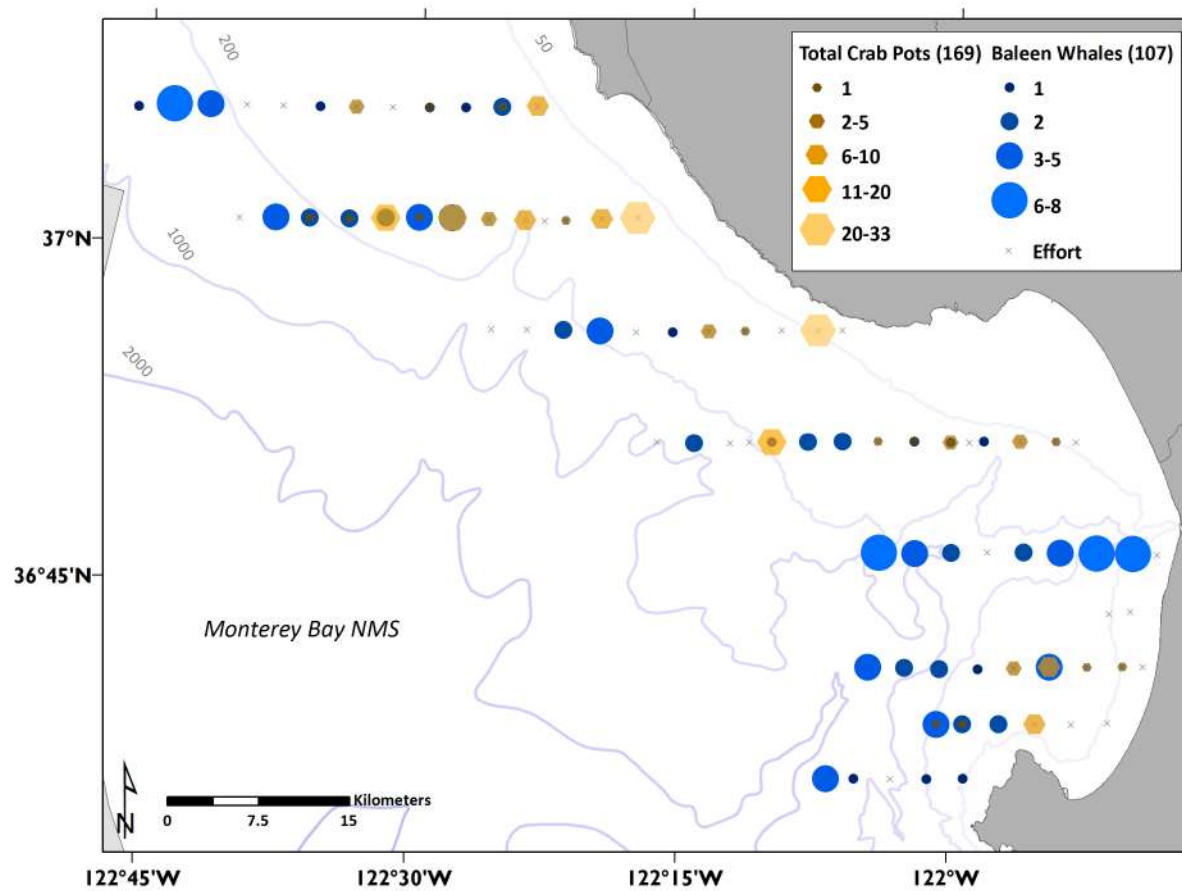
# Data Sources

Whale Watch Operator data



Analysis  
by  
NOAA  
NWFSC

# Whale Entanglements: Data Sources



Baleen Whales and Crab Pots, May 2017

Vessel Surveys

Large Whales

Included:

BLWH (2)

FIWH (1)

HUWH (79)

UNWH (25)

Not included

KIWH (3)

# Gear Innovation & Testing – 2018/2019

## Objectives:

- Deploy ropeless gear on crab traps
- Retrieve gear within minutes to test acoustic release and retrieval
- Fishermen's feedback on what works well, or not, and what needs to be improved
- Develop dialogue between fishermen and gear innovators
- **September 6, 2019 Gear Innovation Testing**



Fiomarine Fiobuoy AC100  
Designed in Australia



Desert Star ARC-1XD  
Designed in California

# Gear Testing Results –

## May 2018

- Fiomarine:
  - 4 successful retrievals (60-240 ft)
- Desert Star:
  - 1 successful retrieval at 60 feet; did not pop up on 2<sup>nd</sup> attempt at 60 feet. Unit currently lost
- Initial observations
  - Technologies are simple to use and learn
  - Gear may move from initial set location
  - Recoiling/repacking line causes delays
  - Acoustic release may need multiple attempts
  - Concerns with visibility, retrieval
  - Located deployed gear with echosounder



# Whale Entanglements: Response Teams

❖ Interagency Cooperation coordinated by NMFS

