



**CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
DECLARATION OF CRAB TRAP PROHIBITION
IN THE RECREATIONAL DUNGENESS CRAB FISHERY
DUE TO RISK OF MARINE LIFE ENTANGLEMENT**

Pursuant to California Code of Regulations, Title 14, Section 29.80, subsection (c)(7)
("Section 29.80(c)(7)"), I find and declare that:

I

On April 13, 2022, I evaluated entanglement risk for the recreational Dungeness crab fishery pursuant to Section 29.80(c). I provided the Whale Safe Fisheries email listserv with notice of the risk assessment and all non-confidential data under consideration on April 11, 2022. Prior to this risk assessment and management response, I considered all relevant information provided to my staff and consulted with the designee of the President of the Fish and Game Commission.

II

NOAA-standardized data from commercial whale-watching trips in Fishing Zone 4 show increasing presence of Humpback whales, with the most recent weekly running average of 22.1 Humpback whales in Monterey Bay. Pursuant to Section 29.80(c)(7)(A)(1), I must implement a protective management action in the recreational crab fishery.

III

Aerial surveys undertaken by NOAA researchers on April 6 and 7, 2022 observed 40 and 41 whales in Fishing Zones 3 and 4, respectively. Vessel surveys by Cascadia researchers on April 6, 2022, sighted approximately 39 whales in Fishing Zone 4. Pursuant to Section 29.80(c)(7)(A)(1), I must implement a protective management action in the recreational crab fishery.

IV

Section 29.80(c)(7) requires evaluation of the information outlined in California Code of Regulations, Title 14, Sections 132.8 ("Section 132.8"). Upon evaluation of the management considerations pursuant to Section 132.8(d), I have determined that the management action listed below protects Humpback whales based on the best available science. Additional information on the relevant management considerations is provided in the attachment to this declaration.

VI

THEREFORE, under the authority granted by Section 29.80(c) of Title 14 of the California Code of Regulations, I am implementing the following management action:

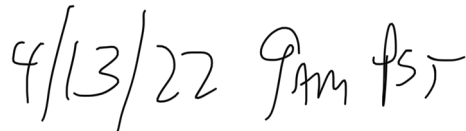
1. The deployment and use of crab traps is prohibited statewide beginning April 24, 2022, at 7 p.m.

This management action is in effect until the normal end of the Dungeness crab season as specified in California Code of Regulations, Title 14, Section 29.85(b)(2).

Updates and material regarding future entanglement risk evaluations in the commercial and recreational Dungeness crab fisheries will be made available on the [Department's Whale Safe Fisheries web page](#).



Charlton H. Bonham, Director



Date/Time

ATTACHMENT TO DIRECTOR April 13, 2022 DECLARATION OF CRAB TRAP
PROHIBITION IN THE RECREATIONAL DUNGENESS CRAB FISHERY DUE TO RISK OF
MARINE LIFE ENTANGLEMENT

Information referenced in this Attachment is further described in the Data Summary Compilation dated April 11, 2022, and located at the [Department's Whale Safe Fisheries website](#), which to the Department's knowledge represents the best available science informing the management considerations in Section 132.8(d).

Information Supporting Trigger for Management Action Under Section 132.8(c)

Marine Life Concentrations:

- **Fishing Zone 3:** 40 humpback whales observed by NOAA aerial survey.
- **Fishing Zone 4:** 41 humpback whales observed by NOAA aerial surveys and 39 humpback whales observed by Cascadia Research vessel surveys. Weekly average of 22.1 humpback whales in Monterey Bay based on data from Monterey Bay Whale Watch (MBWW).

Relevant Management Considerations Under Section 132.8(d)

1. Working Group Management Action Recommendation and Best Available Science Made Available to the Department

There was not a Working Group Management Recommendation made related to this action, and no other information was made available to the Department.

2. Information from NOAA

No additional information was provided for this risk assessment.

3. Effectiveness of Management Measures to Minimize Entanglement Risk

The only alternative management response in the recreational crab fishery is an advisory notice. Given increasing presence of whales, entanglements in the season to date, and known locations of humpback whales based on survey data, an advisory will not effectively protect humpback whales. Therefore, a recreational trap prohibition is the most effective management option.

4. Total Economic Impact to the Fleet and Fishing Communities

Total economic costs are considered when deciding between management measures that equivalently reduce entanglement risk. At this time, only a trap prohibition will effectively reduce entanglement risk. Economic impacts from a recreational trap prohibition are unknown at this time given the lack of data on the fishery, however

businesses dependent on recreational fishing activity may be impacted. Potential access to other recreational fisheries such as salmon and groundfish may provide alternative forms of income to certain businesses.

5. Data Availability Within and Across Fishing Zones

CDFW and NOAA aerial survey data are available for Fishing Zones 1 through 4, and Cascadia vessel survey data and Monterey Bay Whale Watch data are available for Fishing Zone 4. Point Blue Conservation Science observation data are available for Zones 3, 4, and 6.

6. Known Historic Marine Life Migration Patterns

Aerial survey data and data from Monterey Bay Whale Watch (MBWW) indicate increasing Humpback whale presence in Fishing Zones 3 and 4. Based on MBWW data, the average number of whales is higher than average for this time of year, and has increased substantially in the past few weeks. Cascadia surveys observed a mix of age classes, indicating migration from winter breeding areas to summer foraging areas has begun. Furthermore, there has been an increase in sightings by trained naturalists in the Channel Islands. Based on historic migration patterns, CDFW expects a continued increase in Humpback presence statewide.

7. Fishing Season Dynamics

CDFW expects overall little recreational crab effort given the time of year and access to other fisheries, including salmon and groundfish.

8. Known Distribution and Abundance of Key Forage

Humpback whales were observed feeding on krill in deeper waters and anchovies in shallower waters. Bait balls were observed off the coast of Fishing Zone 2.

9. Ocean Conditions

Given typical spring upwelling patterns caused by high winds, CDFW anticipates the recreational fleet will need to closely monitor weather to successfully retrieve fishing gear.

10. Current Impact Score Calculations

- a. Fishing Season – 3.01 for Humpback whales; 0 for blue whales and leatherback sea turtles
- b. Calendar Year – 2022 Calendar Year – 3.01 for Humpback whales; 0 for blue whales and leatherback sea turtles.

- c. 2021 Calendar Year – 1.89 for Humpback whales; 0 for blue whales and leatherback sea turtles.

11. Marine Life Concentrations and Distribution During the Current Fishing Season

Substantial increases in the numbers of Humpback whales in Fishing Zones 3 and 4 indicate migration is well underway. Point Blue Conservation Science observation data also indicates an increase in humpback whale presence in the Channel Islands. Whales were sighted both inshore and offshore.

Chosen Management Action and Rationale

Based on the management considerations outlined above, the Director will implement a statewide crab trap prohibition in the recreational Dungeness crab fishery through the normal end of the Dungeness crab season as specified in California Code of Regulations, Title 14, Section 29.85(b)(2).

Aerial survey, vessel survey, and MBWW data, supported by observations from Point Blue Conservation Science, indicates significant increases in Humpback whale presence over the past two weeks, posing a risk of entanglement with recreational crab traps. This is consistent with known migration patterns for humpback whales. Humpback whales have been observed foraging on krill and anchovies, both offshore and inshore. Whale presence is anticipated to increase over the coming weeks, which will increase the risk of co-occurrence of whales and recreational crab traps.

Two of the five recent humpback whale entanglements have not been identified to a fishery of origin. Additionally, entanglements occurred during timeframes when data indicated seemingly low humpback presence, which raises concerns over the level of entanglement risk from any remaining crab traps as whale presence increases over the coming weeks.

Section 29.80(c) anticipates a statewide management response to entanglement risk if best available science demonstrates a statewide action is appropriate to protect humpback whales. Given the current rise in overall humpback whale presence in the state, the anticipated continued migration of humpback whales into California waters, and the presence of suitable forage statewide, it is reasonable to anticipate humpback presence will increase statewide over the coming weeks. Therefore, a statewide trap prohibition is appropriate to further minimize entanglement risk.

2021-22 Risk Assessment: Available Data

Last updated: April 11, 2022

Risk Assessments were conducted on March 25, 2022 and April 4, 2022, and this assessment's focus is on the recreational crab fishery. Therefore, CDFW has prepared an abbreviated version of the typical Available Data document which includes information related to current and anticipated marine life concentrations. For relevant context regarding other management considerations, please see the [March 22, 2022 Available Data document](#).

Pursuant to Section 29.80(c)(7)(A), Title 14, California Code of Regulations, management actions in the recreational crab fishery are triggered only by Marine Life Concentrations, and not by Confirmed Entanglements. For the most recent analysis of confirmed entanglements affecting the commercial Dungeness crab fishery, please see the [April 4, 2022 Available Data document](#).

TRIGGERS REQUIRING MANAGEMENT ACTION

Marine Life Concentrations: §132.8(c)(1)

Data provided by: CDFW, Karin Forney (NOAA), John Calambokidis (Cascadia Research), Monterey Bay Whale Watch (processed by Karin Forney, NOAA)

Table 11. Summary of available CDFW-approved survey data for marine life concentrations for each Fishing Zone, and whether the triggers established in Section 132.8(c)(2) have been met for any Fishing Zone.

Fishing Zone	CDFW-approved survey data	Triggers attained?
Zone 1	CDFW Aerial Survey	No
Zone 2	CDFW Aerial Survey	No
Zone 3	CDFW Aerial Survey, NOAA Aerial Survey	Yes
Zone 4	NOAA Aerial Survey, Cascadia Vessel Survey, MBWW	Yes
Zone 5	NA	NA
Zone 6	NA	NA

CDFW Aerial Survey (*Fishing Zones 1-3*)

CDFW flew a series of zig-zag transects between Bodega Bay and the CA/OR border on April 7, 2022 (Figures 1-2). No humpback or blue whales were observed during the flight. Dolphins were observed in Fishing Zones 1 and 2, and five gray whales were observed in Fishing Zone 2. A total of 85 traps were observed in Fishing Zone 1, 129 traps were observed in Fishing Zone 2, and 27 traps were observed in Fishing Zone 3.

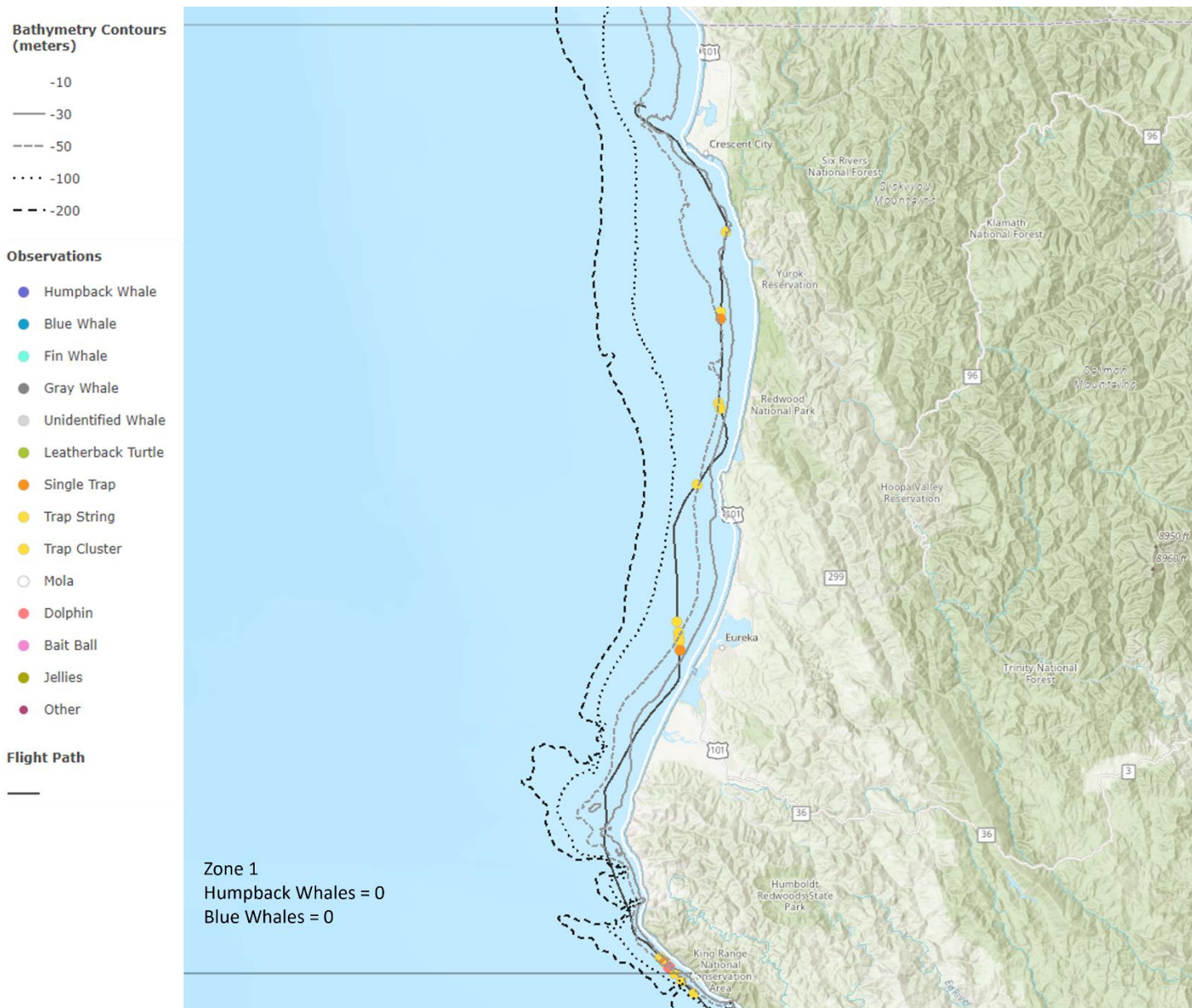


Figure 1. Map showing track lines and observations from CDFW aerial survey of Fishing Zone 1 on April 7, 2022. Survey information is overlaid onto contours showing the 10m, 30m, 50m, 100m, and 200m bathymetry lines.

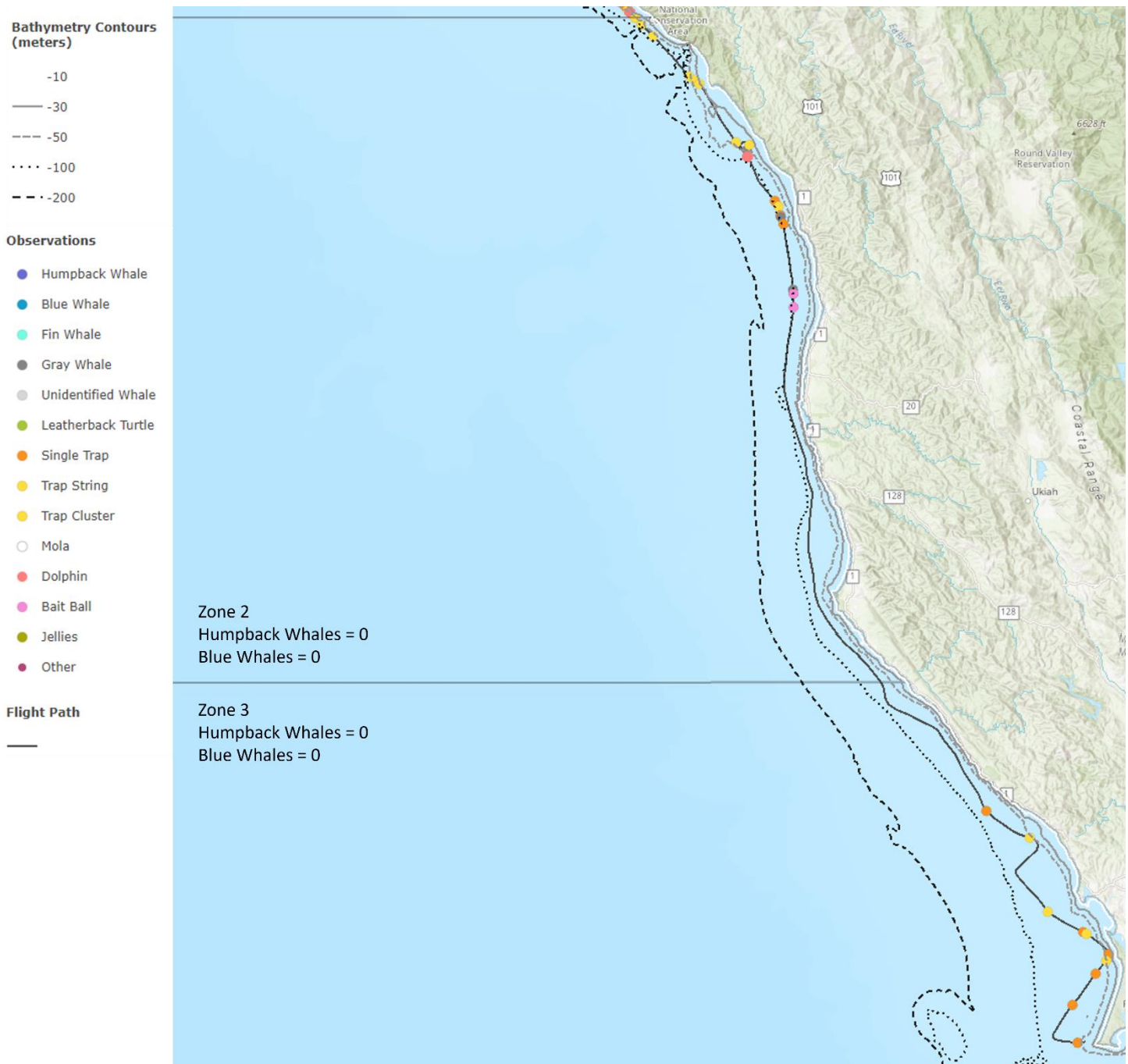


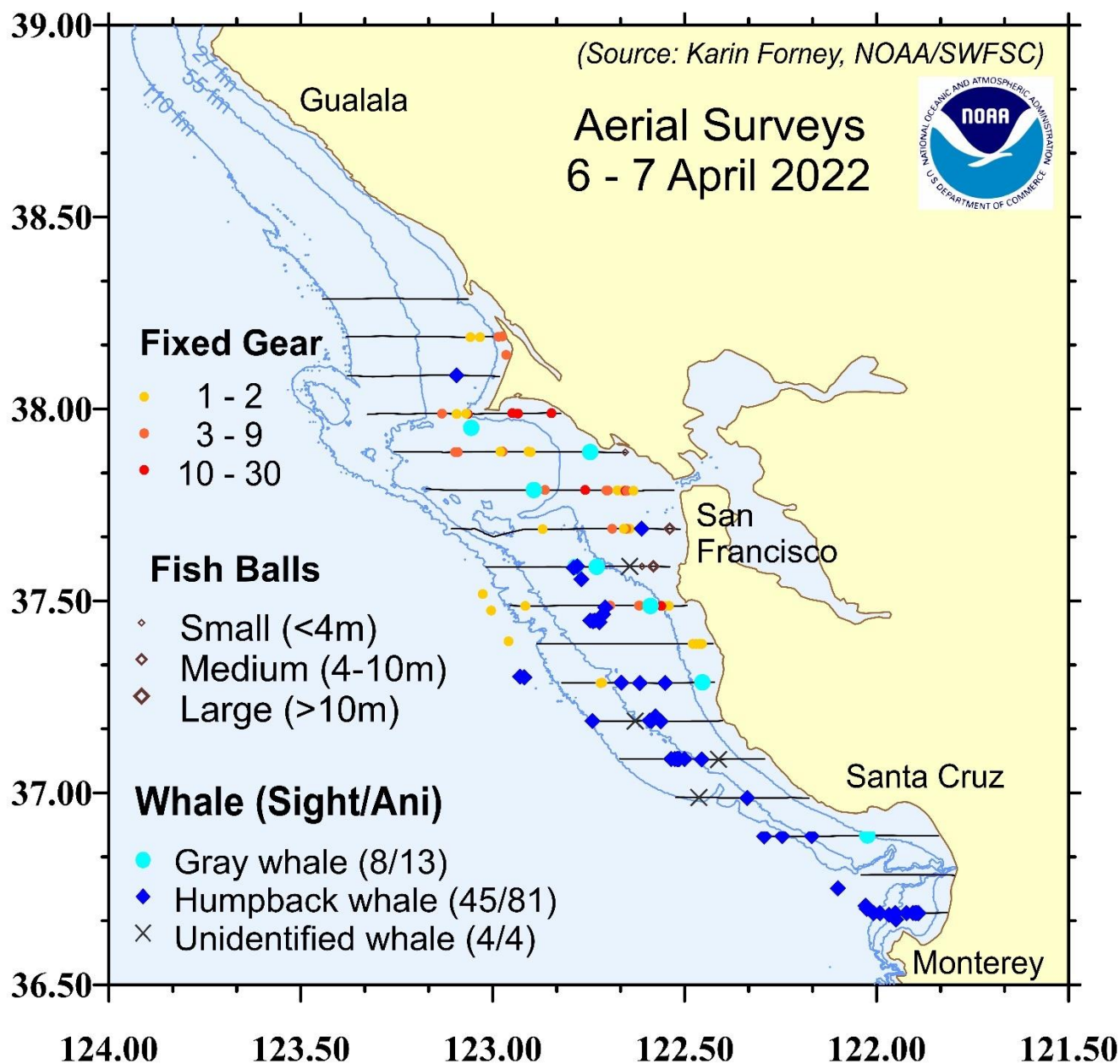
Figure 2. Map showing track lines and observations from CDFW aerial survey of Fishing Zones 2 and 3 on April 7, 2022. Survey information is overlaid onto contours showing the 10m, 30m, 50m, 100m, and 200m bathymetry lines.

NOAA Aerial Survey (*Fishing Zones 3-4*)

NOAA flew east-west transect lines between Monterey and Año Nuevo on April 6, 2022, and between Año Nuevo and Bodega Bay on April 7, 2022 (Figure 3). A total of 40 humpback whales were observed in Fishing Zone 3, and a total of 41 humpback whales were observed in Fishing Zone 4.

The total of 45 sightings of 81 humpback whales were made during the two-day survey effort. It is possible some resights occurred over the course of the survey. However, actual whale numbers in each Fishing Zone are expected to be greater than the number observed, because whales can only be documented within about one mile of the transect line and whales that are diving when the plane passes overhead will not be detected.

Based on the number and configuration of observed buoys, fixed gear sightings appeared to be primarily recreational gear in the southern portion of the survey area and commercial Dungeness crab gear in the northern portion of the survey area, with occasional sightings of deeper-water gear.



Zone 3: 20 sightings of 40 humpback whales

Zone 4: 25 sightings of 41 humpback whales

Figure 3. Aerial survey track lines and observations of large whales, fish balls, and trap gear between Monterey and Bodega Bay on April 6-7, 2022. Fish balls are scored as small/medium/large based on estimated size. The number of sightings and individual whales observed are indicated in parentheses.

Cascadia Vessel Survey (*Fishing Zone 4*)

During a partial-day survey on April 6, 2022 in Monterey Bay, Cascadia researchers sighted approximately 39 humpback whales. The humpback whales were largely observed in waters shallower than 100m. A mix of age classes were observed, indicating the migration from winter to summer areas has begun.

Available Data, April 11, 2022

Monterey Bay Whale Watch (*Fishing Zone 4*)

- MBWW conducted whale-watching trips in southern Monterey Bay on six of seven days during the week of March 31 – April 6, 2022.
- The average number of humpback whales-per-trip during the last seven days (March 31 – April 6) was 22.1, with a peak of 39 whales observed on a single half-day trip on April 3, 2022. This represents a substantial increase from two weeks ago, indicating whales are returning from the breeding grounds to forage off central California.
- No blue whales have been observed by MBWW since November 13, 2021, when one whale was documented.

MANAGEMENT CONSIDERATIONS

Information from NOAA: §132.8(d)(2)

No information was provided for this risk assessment.

Historic patterns and current Actionable Species migration: §132.8(d)(6) and (11)

Data provided by: Monterey Bay Whale Watch (processed by Karin Forney, NOAA)

Monterey Bay Whale Watch (*Fishing Zone 4*)

- The semi-monthly average number of whales-per-half-day-trip is high compared to historical patterns for this time of the year (Figure 4).
- The absence of blue whales is consistent with their historical seasonal migration patterns to lower latitudes during winter.

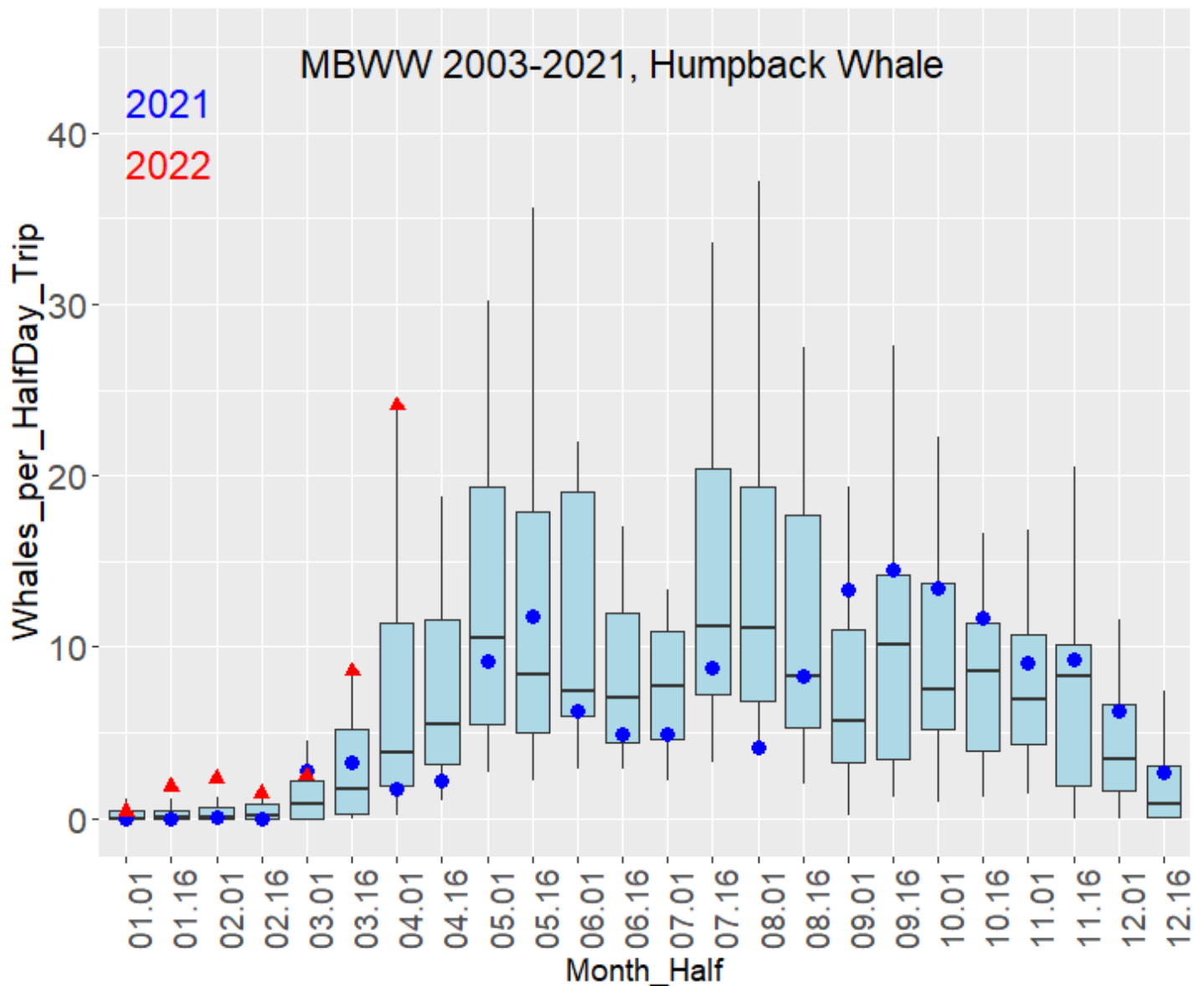


Figure 4. Historical Monterey Bay Whale Watch data for 2003-2022, summarizing the average and variation in the number of humpback whales per half-day trip on a semi-monthly basis (1st- 15th, 16th- end of month). This boxplot follows standard statistical practice in that the black horizontal line is the average number of whales; the blue box shows the 25th-75th percentiles (i.e., half of all past whale numbers are within the blue box); the vertical lines show the range of whale numbers excluding outliers, and outliers are shown as small black dots. Values for 2021 (large blue dots) and 2022 (red triangles) are provided for reference, placing recent whale numbers in a historical context.

Point Blue Conservation Science Data Portal (*Fishing Zones 3, 4, and 6*)

During the seven-day period ending April 8, 2022 trained observers at the Farallon Islands reported a single humpback whale within Fishing Zone 3 (Figure 5), and trained naturalists aboard Monterey Bay Whale Watch and Marine Life Studies reported 51 humpback whales within Fishing Zone 4 (Figure 6). 111 humpback whales were reported within Fishing Zone 6 by trained naturalists from the Channel Islands National Marine Sanctuary and National Park Service (Figure 7). No blue whale sightings were reported from any Fishing Zone.

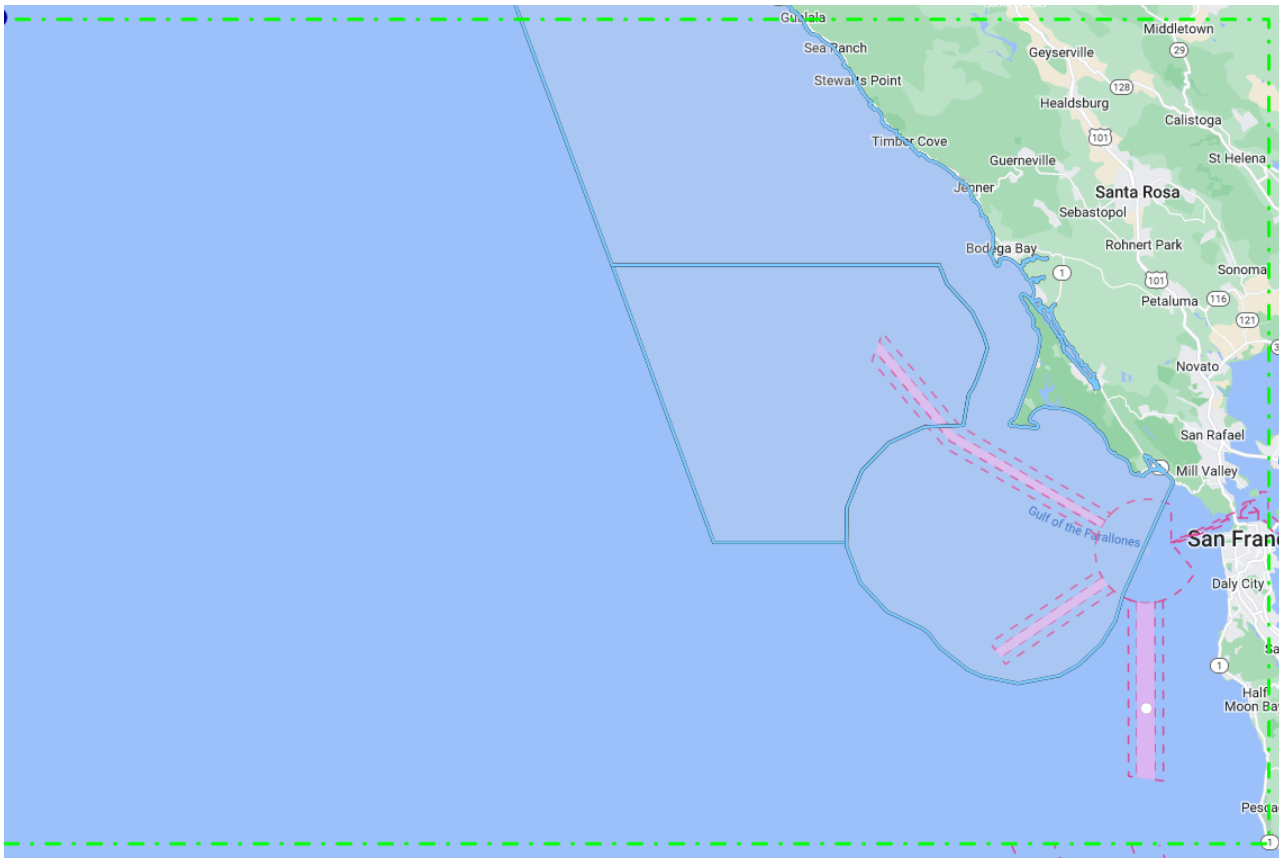


Figure 5. Locations of humpback whale sightings within Fishing Zone 3. Reporting locations are represented by white circles. A given report may or may not represent multiple individuals. Fishing Zone boundaries are represented by the dashed green line.

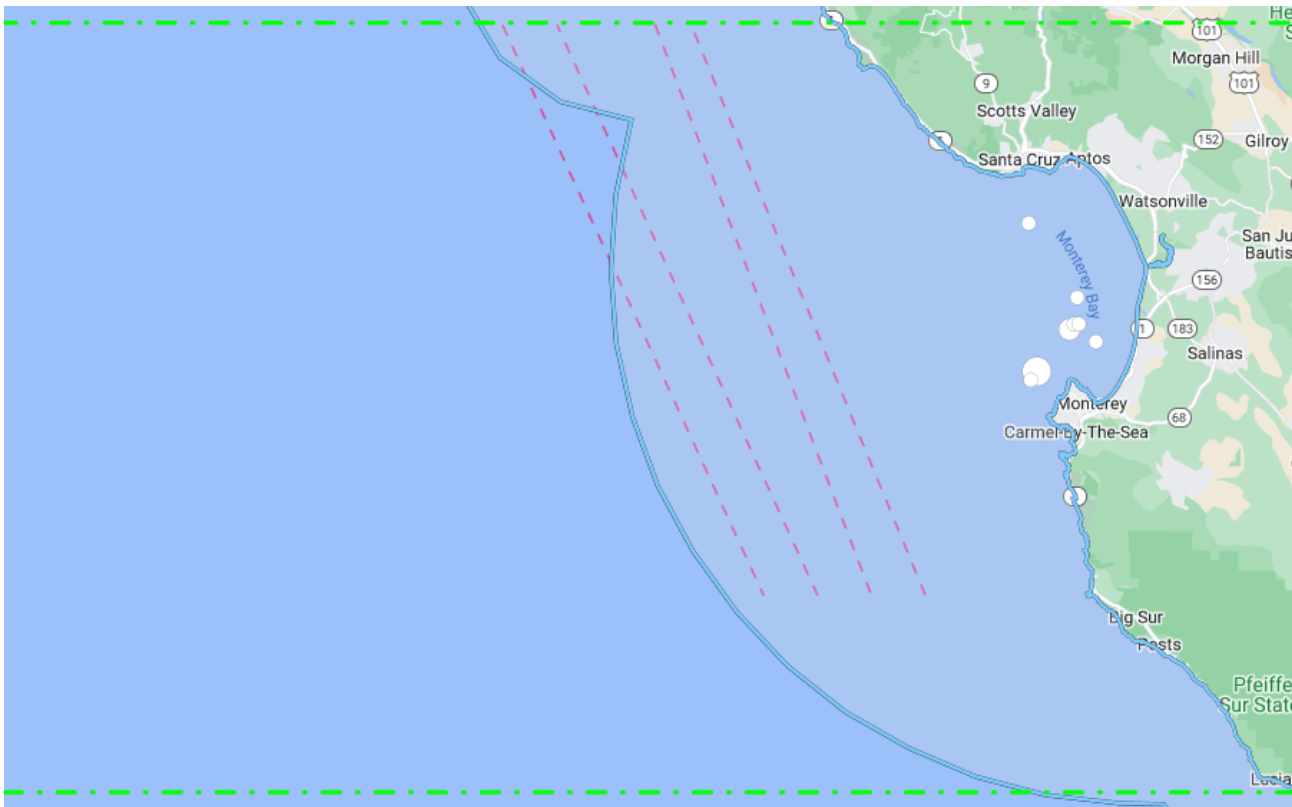


Figure 6. Locations of humpback whale sightings within Fishing Zone 4. Reporting locations are represented by white circles. A given report may or may not represent multiple individuals. Fishing Zone boundaries are represented by the dashed green line.

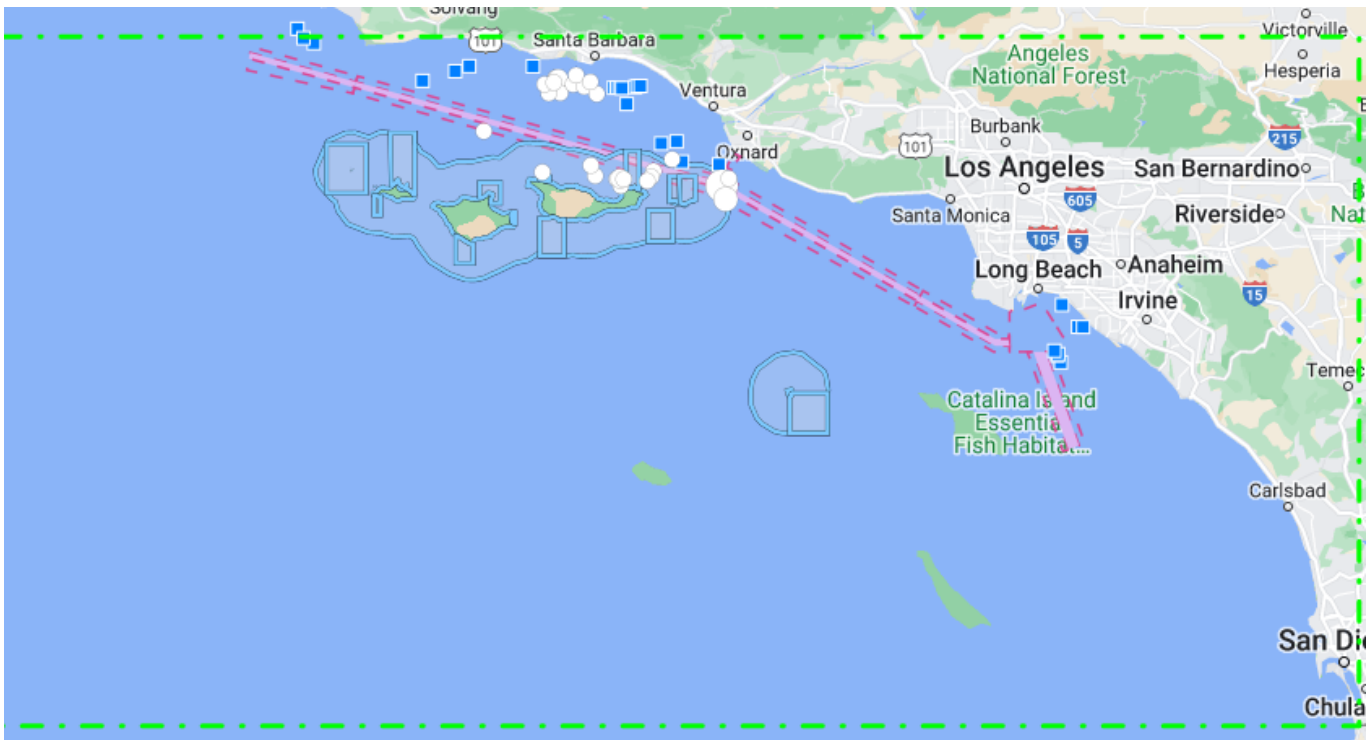


Figure 7. Locations of humpback whale sightings within Fishing Zone 6. Reporting locations are represented by white circles. A given report may or may not represent multiple individuals. Fishing Zone boundaries are represented by the dashed green line.

Distribution and abundance of key forage: §132.8(d)(8)

CDFW Aerial Survey (*Fishing Zones 1-3*)

Two bait balls were observed in 100m water off Ten Mile River (Fishing Zone 2).

NOAA Aerial Survey (*Fishing Zones 3-4*)

Humpback whales were observed across a range of depths within the survey area, and appeared to be feeding on krill in deeper waters and anchovies in shallower waters.

Cascadia Vessel Survey (*Fishing Zone 4*)

The humpback whales observed in Monterey Bay were feeding on fish.