2024-2025 Risk Assessment
Preliminary Assessment and Available Data for Risk Assessment Mitigation Program

Last updated: April 15, 2025

PRELIMINARY ASSESSMENT

This Preliminary Assessment and Management Recommendation has been developed by the California Department of Fish and Wildlife (CDFW) Marine Region staff for consideration by the California Dungeness Crab Fishing Gear Working Group for the Risk Assessment Mitigation Program (RAMP; Section 132.8, Title 14, California Code of Regulations) regarding Management Actions to address marine life entanglement risk in the commercial and recreational Dungeness crab fishery. CDFW will prepare a Final Assessment and Management Recommendation after reviewing the Working Group Recommendation and other relevant data.

Recommended Management Actions

Commercial Fishery:

- Fishing Zones 1-2: Continue 25% Gear Reduction and 30-Fathom Depth Constraint
- Fishing Zone 3: Season Closure, effective May 1, 2025, at 6:00 p.m.
- Fishing Zones 4-6: Season Closed

Recreational Fishery:

- Fishing Zone 3: Crab Trap Prohibition, effective May 1, 2025, at 6:00 p.m.
- Fishing Zone 4: Continue Crab Trap Prohibition
- All Fishing Zones: Fleet Advisory

Contents

I. Management Recommendation Summary Rationale

The Marine Region's preliminary recommendation is for the Director to close the commercial fishery in Fishing Zone 3, effective May 1, 2025, at 6:00 p.m., and to continue the 25% Gear Reduction and 30-Fathom Depth Constraint in Fishing Zones 1 and 2. Note: Fishing Zones 4-6 will close April 15, 2025, at 6:00 p.m.

The Marine Region also recommends a Crab Trap Prohibition for Fishing Zone 3, effective May 1, 2025, at 6:00p.m. A Fleet Advisory remains for all Fishing Zones. Note: A Crab Trap Prohibition for Fishing Zone 4 will be implemented on April 15, 2025, at 6:00 p.m.

These preliminary recommendations are based on increasing Marine Life Concentrations, the Entanglement Impact Score for the entire commercial fishery, recent humpback whale entanglement reports, and historical migration patterns of humpback whales. The Marine Life Concentration trigger was exceeded in Fishing Zone 3 for humpback whales with aerial and vessel surveys observing large congregations of humpback whales in 65-200m water depths (35-110 fathoms). The current entanglement Impact Score is 3.9, which exceeds the rolling average in RAMP, requiring action by the CDFW Director. Entanglement risk will increase as more whales continue to arrive from their winter breeding grounds seeking foraging opportunities. Humpback whale observations have greatly increased since the last Risk Assessment, therefore a Depth Constraint and Gear Reduction are no longer sufficient to reduce entanglement risk. A season closure for the commercial fishery and a trap prohibition for the recreational fishery in Fishing Zone 3 is thereby recommended to reduce the co-occurrence of trap gear and humpback whales.

Fishing effort as reported in bi-weekly reports for Fishing Zones 1 and 2, is occurring largely in depths of 16-38 fathoms and no humpback or blue whales were observed during recent surveys. A 30-Fathom Depth Restriction and 25% Gear Reduction have already been implemented, therefore, no additional management measures are recommended at this time.

Management Actions for Fishing Zones 1 and 2 for the commercial fishery will be re-evaluated at the next risk assessment in early May and the fleet should be prepared for additional Management Actions to be applied. Recreational Management Actions will also be re-evaluated for Fishing Zones 1, 2, 5 and 6.

Entanglements: On April 14, 2025, one entanglement of a humpback whale in Monterey was reported, additional details will be provided when available by NOAA.

Marine Life Concentrations: Based on Monterey Bay Whale Watch data, NOAA aerial surveys and Cascadia vessel surveys, humpback and blue whale sightings have increased in Fishing Zones 3 and 4 as humpback whales continue their migration north from winter breeding areas. NOAA surveys observed 23 humpback whales in Fishing Zone 3 in depths of 100-200 m (54-110 fathoms), with limited sightings in the Monterey Bay area in depths of 50-100m (27-54 fathoms). Cascadia vessel surveys also sighted 53 humpback whales in Fishing Zone 3 in depths of 65-100m (35-55 fathoms) and appeared to be feeding on krill between Half-Moon Bay and Southeast Farallon Island.

For additional details, see the Entanglement and Marine Life Concentration sections of this Available Data document.

Table 1. Fishing Zones and current management status in the California commercial and recreational Dungeness crab fishery.

Fishing Zone	**Commercial Fishery:** Current Management Status	**Commercial Fishery:** Proposed Management Status	**Recreational Fishery:** Current Management Status	**Recreational Fishery:** Proposed Management Status
1	25% Gear Reduction and 30-Fathom Depth Constraint	25% Gear Reduction and 30-Fathom Depth Constraint	Fleet Advisory	Fleet Advisory
2	25% Gear Reduction and 30-Fathom Depth Constraint	25% Gear Reduction and 30-Fathom Depth Constraint	Fleet Advisory	Fleet Advisory
3	50% Gear Reduction and 30-Fathom Depth Constraint	Season Closure	Fleet Advisory	Crab Trap Prohibition
4	Season Closed	Season Closed	Crab Trap Prohibition	Crab Trap Prohibition
5	Season Closed	Season Closed	Fleet Advisory	Fleet Advisory
6	Season Closed	Season Closed	Fleet Advisory	Fleet Advisory

II. Alternative Management Actions for the Commercial Fishery

Alternatives Considered but Rejected

- A season closure was considered for Fishing Zones 1 and 2 but was not recommended based on available Marine Life Concentration data at this time.
- Alternative Gear- can be authorized after April 1st, but no gear currently is authorized for the commercial Dungeness crab fishery.

III. Triggers Requiring Management Action

I. Confirmed Entanglements: §132.8(c)(1)

Data provided by: Lauren Saez and Dan Lawson (National Marine Fisheries Service)

On April 14, 2025, one entanglement of a humpback whale in Monterey was reported, additional details will be provided when available by NOAA.

Tables 2 and 3 outline the confirmed entanglements under RAMP and their associated Impact Score for the years 2023-2025. See "FAQ: Impact Scoring for the Risk Assessment and Mitigation Program" for information about the RAMP Impact Score. More information and definitions, please see the RAMP Entanglement History document.

Table 2. Actionable Species Entanglements during 2025 pursuant to RAMP regulations.

Entanglement ID	Date	Species	Fishery	Impact Score
20250322Mn	03/22/25	Humpback whale	CA commercial Dungeness crab	0 (resight)
Pending	4/14/2025	Humpback whale	Pending	Pending

Table 3. Impact Score Calculations based on Confirmed Entanglements in California commercial Dungeness crab gear and Confirmed Entanglements in Unknown Fishing Gear reported off California.

Actionable Species	Current Fishing Season Impact Score (2024-25)	Current Calendar Year Impact Score (2025)	3-Year Rolling Average
Humpback whales	0	0	3.9
Leatherback sea turtle	0	0	0.33

As of April 15, 2025, there have been zero Confirmed Entanglements of blue whales or leatherback sea turtles during the 2025 calendar year.

II. Marine Life Concentrations: §132.8(c)(2)

Data provided by: John Calambokidis (Cascadia Research Collective, in collaboration with the Marine Mammal Center), Scott Benson and Karin Forney (NOAA SWFSC and Upwell), US Coast Guard, Monterey Bay Whale Watch (processed by Karin Forney, NOAA SWFSC)

According to the RAMP regulations for the period of March 1 until the Fishing Season closes statewide a trigger has been met when:

- The number of humpback whales is greater than or equal to 10, or there is a running average of five or more animals over a one-week period within a single Fishing Zone.
- The number of blue whales is greater than or equal to three, or there is a running average of three or more animals over a one-week period within a single Fishing Zone
- The number of Pacific leatherback sea turtles is greater than or equal to one within any Fishing Zone

Table 41. 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	NOAA Aerial Survey, US Coast Guard	No
Zone 2	NOAA Aerial Survey	No
Zone 3	NOAA Aerial Survey, Cascadia Research Vessel Survey	Yes
Zone 4*	NOAA Aerial Survey, Cascadia Research Vessel Survey, MBWW	Season Closed
Zone 5*	None	Season Closed
Zone 6*	None	Season Closed

**Fishing Zone is closed for the commercial fishery for the remainder of the statutory season*

A. Cascadia Research Survey (Fishing Zones 3-4)

Cascadia Research conducted a vessel survey on April 5, 2025, in the Monterey Bay area (Fishing Zone 4) in support of an entanglement response and successful disentanglement effort. There were 12 sightings of 28 humpback whales (Figure 1). Additionally, the movements of the entangled whale (from a tracking buoy) provided some insight into humpback whale use of the Monterey Bay area (Figure 2).

On April 8, 2025, Cascadia Research conducted a vessel survey out of Half Moon Bay. There were 24 sightings of 53 humpback whales in just over 100nmi of coverage (Table 5, Figure 3). There were also three sightings of seven fin whales. The humpback and fin whales were concentrated in 65-100m (35-55 fathoms) of water and appeared to be feeding on krill between Half Moon Bay and Southeast Farallon Island.

Table 5. Summary of Cascadia Research and The Marine Mammal Center vessel surveys in Fishing Zones 3 and 4 on April 4-8, 2025.

Date	Fishing Zone	Port	Humpback whale sightings	# of humpback whales sighted
4/4/25	4	Monterey Bay	4	5
4/5/25	4	Monterey Bay	12	28
4/8/25	3	Half Moon Bay	24	53

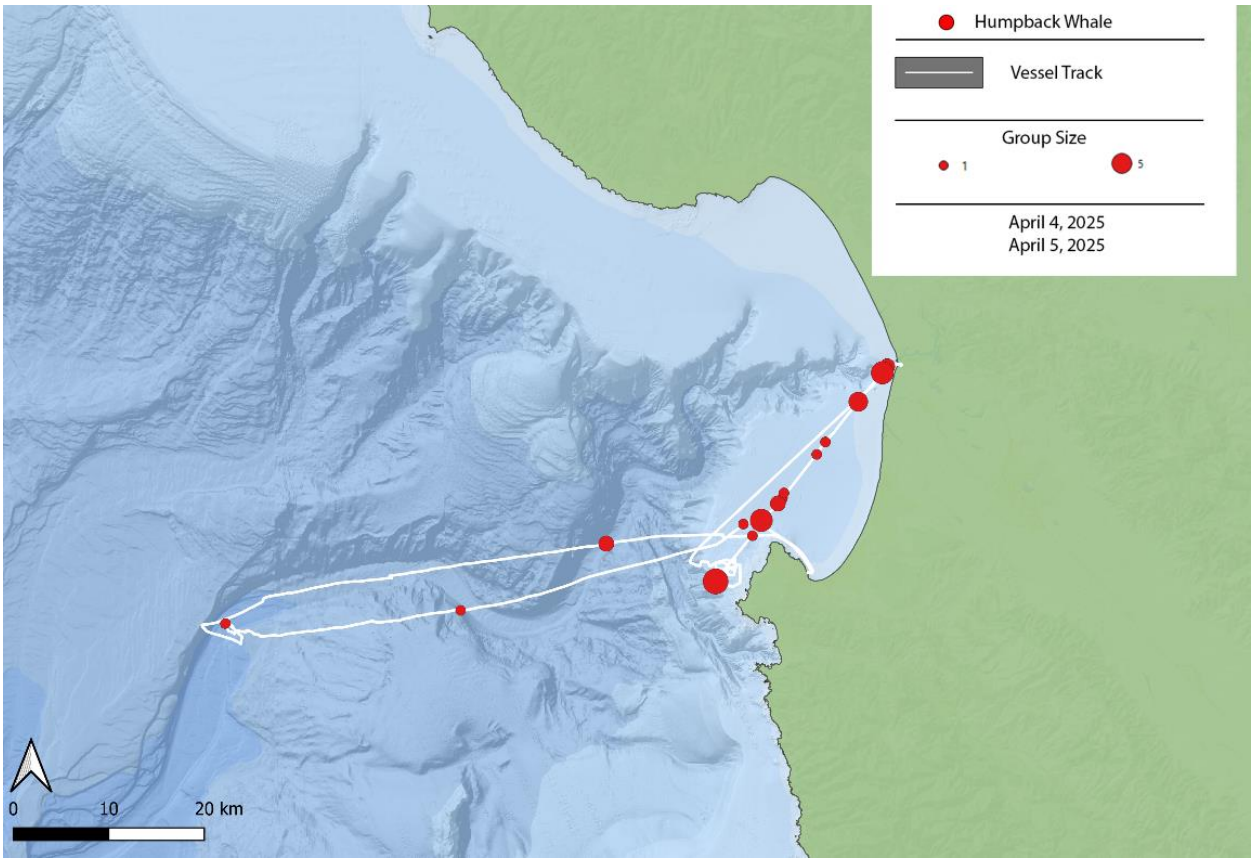


Figure 1. Survey effort and whale sightings during small boat surveys by The Marine Mammal Center/Cascadia Research Collective in Fishing Zone 4 on April 5, 2025, searching for reported entangled whales in Monterey Bay.

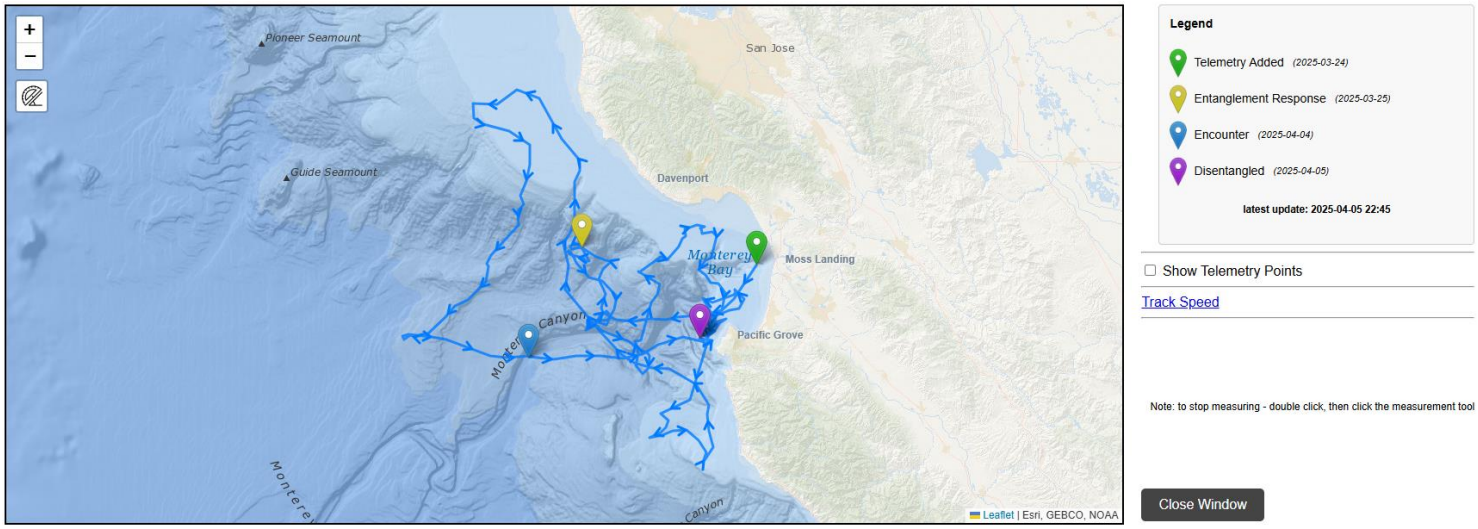


Figure 2. Movements of entangled humpback whale between March 24, 2025, when a tracking buoy was attached and April 5, 2025, when it was disentangled.

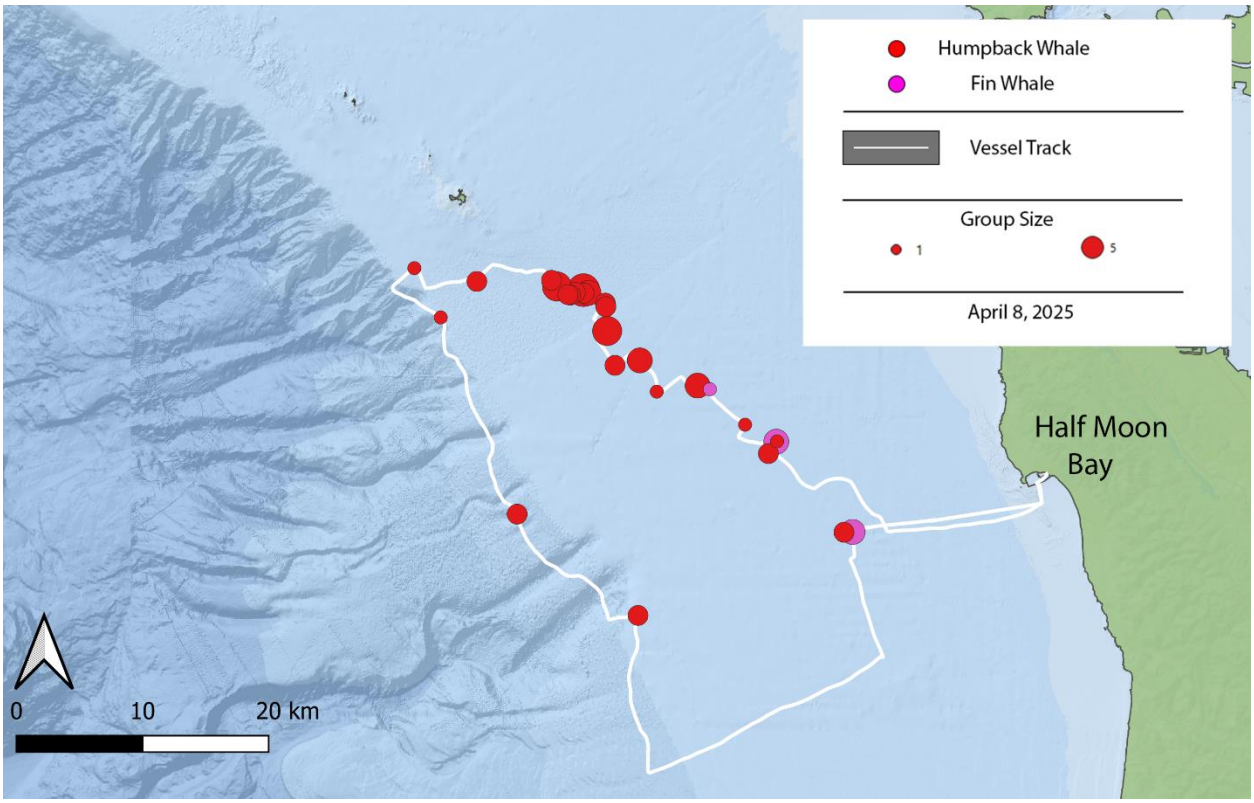


Figure 3. Results of vessel-based survey out of Half Moon Bay on April 8, 2025, by Cascadia.

B. NMFS Aerial Surveys (Fishing Zones 1 – 4)

NMFS conducted aerial surveys in Fishing Zones 1-2 on April 5, 2025, covering a zig-zag pattern from the coast to the 50-fathom contour line (Figure 4). No humpback whales were documented in Fishing Zones 1-2.

Aerial surveys were conducted within Fishing Zones 3-4 on April 6, 2025, covering east-west transects spaced every six nautical miles from shore to about the 110-fathom contour line (Figure 5). In Fishing Zone 3, there were 13 sightings of 23 individual

humpback whales. In Fishing Zone 4, the team documented 6 sightings of 6 humpback whales. Two blue whales were observed southeast of the Farallon Islands in Fishing Zone 3. Additionally, at least 12 fin whales were documented in 30-70 fathoms of water depth off of the coast of San Mateo County and northern Santa Cruz County.

Table 6. Counts of whales seen on NOAA aerial survey conducted from April 5-6, 2025.

Date	Fishing Zone	# of sightings	# of humpback whales	# of sightings	# of blue whales
4/5/2025	1	0	0	0	0
4/5/2025	2	0	0	0	0
4/6/2025	3	13	23	1	2
4/6/2025	4	6	6	0	0

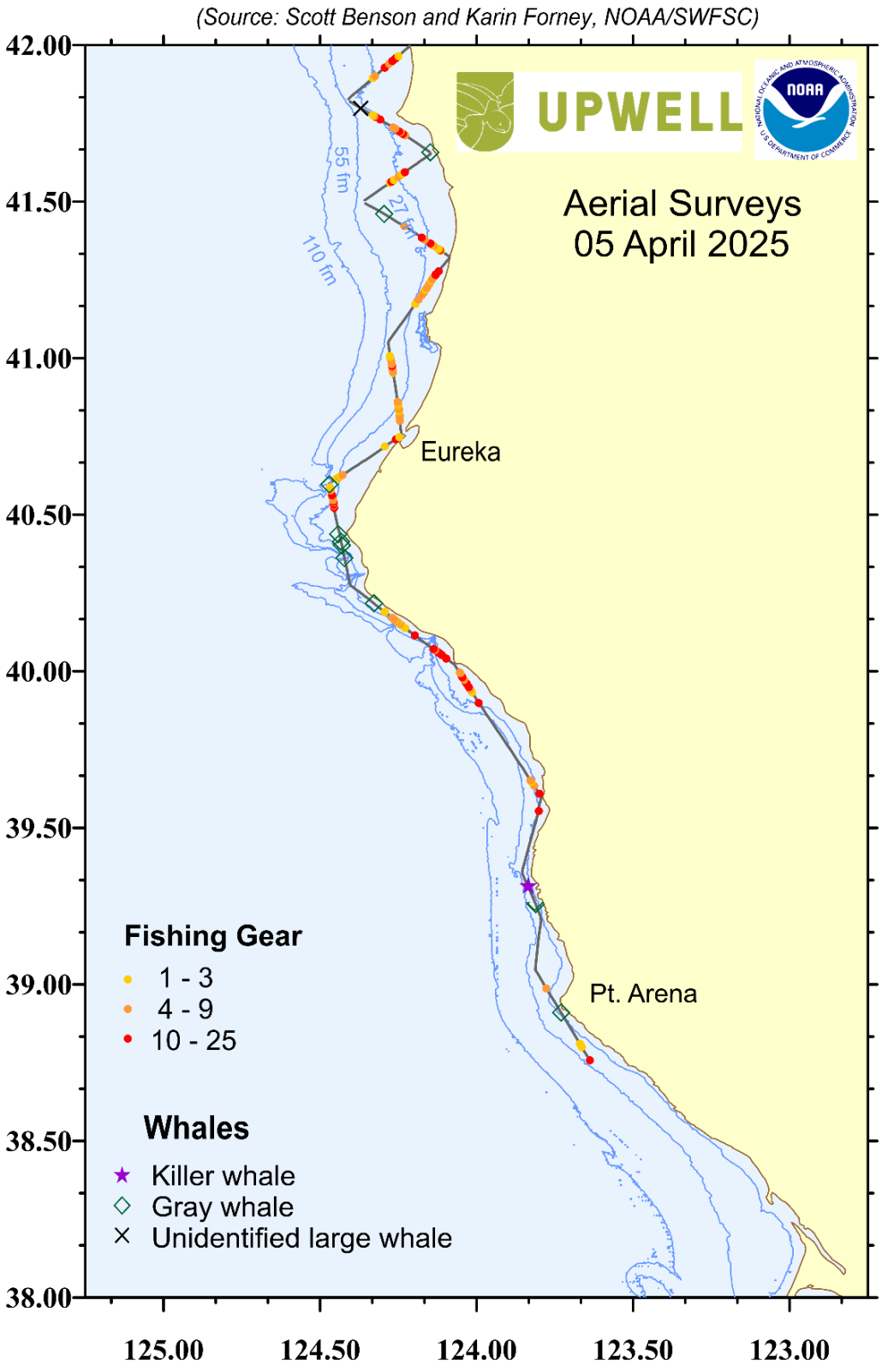
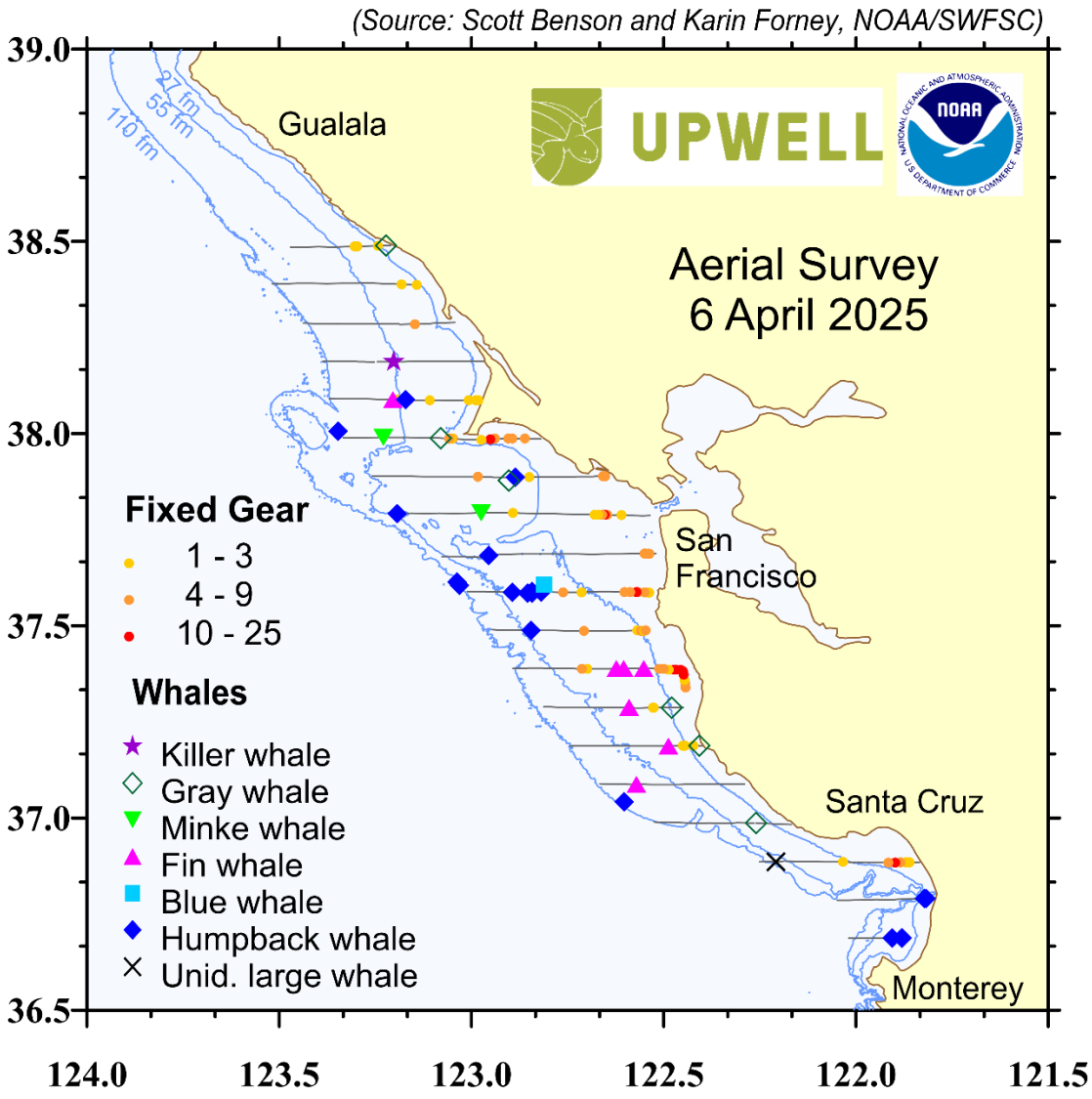


Figure 4. Map of aerial survey conducted by NMFS and Upwell on April 5, 2025, within RAMP Fishing Zones 1-2.



Zone 3: 13 sightings of 23 humpback whales
6 sightings of 10 fin whales
1 sighting of 2 blue whales
1 sighting of 2 unidentified whales

Zone 4: 6 sightings of 6 humpback whales
1 sighting of 2 fin whales
1 sighting of 1 unidentified whale

Figure 5. Map of aerial survey conducted by NMFS and Upwell on April 6, 2025, within RAMP Fishing Zones 3-4.

C. US Coast Guard Aerial Surveys (Fishing Zone 1)

On April 3, 2025, the U.S Coast Guard conducted an aerial survey from the coast to the 50-fathom contour line at an altitude between 500 – 1000 feet covering Fishing Zone 1 from Cape Mendocino to the CA-OR border (Figure 6). Wind conditions were light, less than 10 kts along the Humboldt County Coastline and up to 15 kts in Del Norte County. Visibility in the water was low making species

identification difficult. A pod of gray whales was observed, along with four unidentified whales along the survey line.

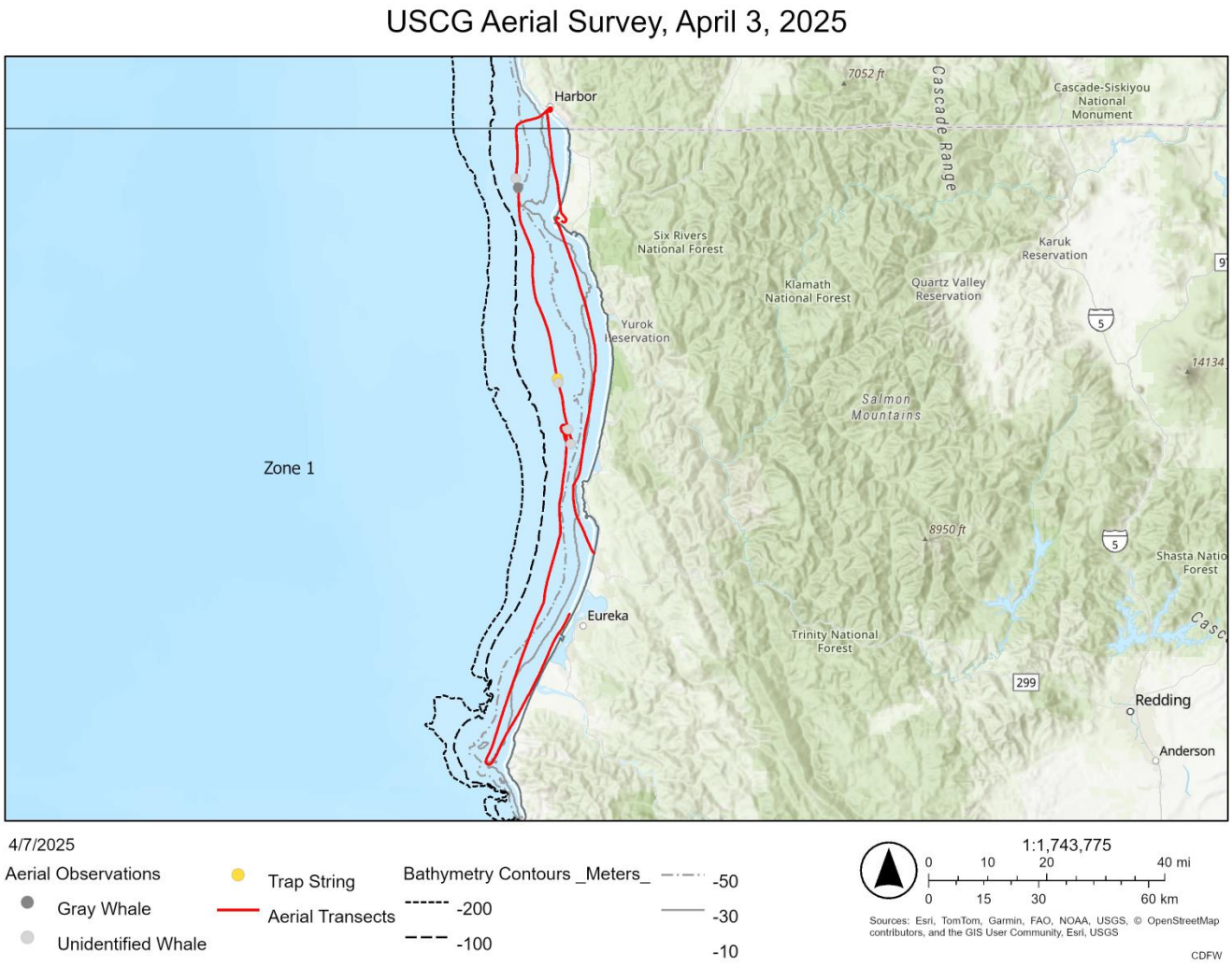


Figure 6. Map of aerial survey conducted by the US Coast Guard on April 3, 2025.

D. Monterey Bay Whale Watch Surveys (Fishing Zone 4)

Monterey Bay Whale Watch conducted whale watching trips in southern Monterey Bay on six of seven days the week of April 2-8, 2025. The seven-day average number of humpback whales per half day trip during April 2-8, 2025, was 19.3, with a peak of 35 humpback whales observed on half day trips on April 3 and April 6 2025 (Figure 7).

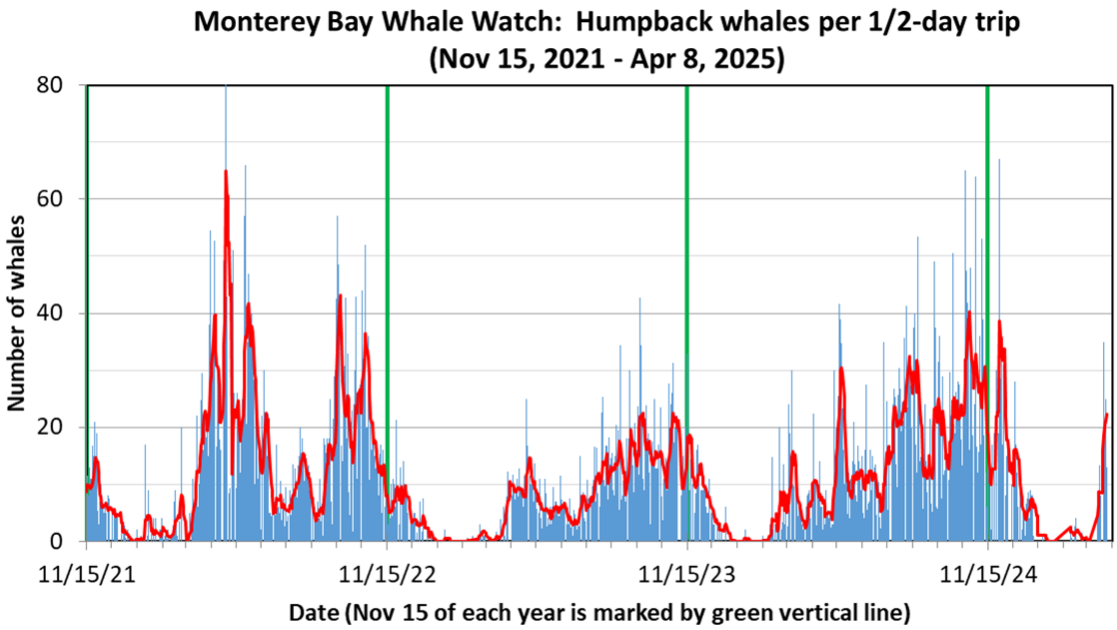


Figure 7. Standardized number of humpback whale sightings for Monterey Bay Whale Watch from November 15, 2021 – February 28, 2025. The y-axis is the number of whales per half-day trip; the thin blue bars are the average daily whale numbers, and the red line is a seven-day running average to make the patterns a bit easier to see. A vertical green line has been added at November 15 of each year for reference. Each tick mark is one month.

IV. Management Considerations

I. Information from NOAA: §132.8(d)(2)

Data provided by: Lauren Saez and Dan Lawson, National Marine Fisheries Service (NMFS), California Department of Fish and Wildlife.

On April 14, 2025, one entanglement of a humpback whale in Monterey was reported, additional details will be provided when available by NOAA. For recent entanglement information please see the RAMP Entanglement History document.

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

Data provided by: Point Blue Conservation Science and Monterey Bay Whale Watch (processed by Karin Forney NOAA SWFSC)

A. Point Blue Conservation Science (Fishing Zones 3, 4, and 6)

For current observation data please see the Point Blue Whale Alert map.

Table 7. Summary of available humpback and blue whale recorded reported via Point Blue Conservation Science in Fishing Zones 3, 4, and 6 during the seven-day period ending April 14, 2025.

Fishing Zone	Number of humpback whales sighted	Number of blue whales sighted
Zone 3	7	0
Zone 4	0	0
Zone 6	62	0

B. Monterey Bay Whale Watch (Fishing Zone 4)

The semi-monthly average number of humpback whales per half day trip in southern Monterey Bay is above the historical average for this time of year (Figure 8).

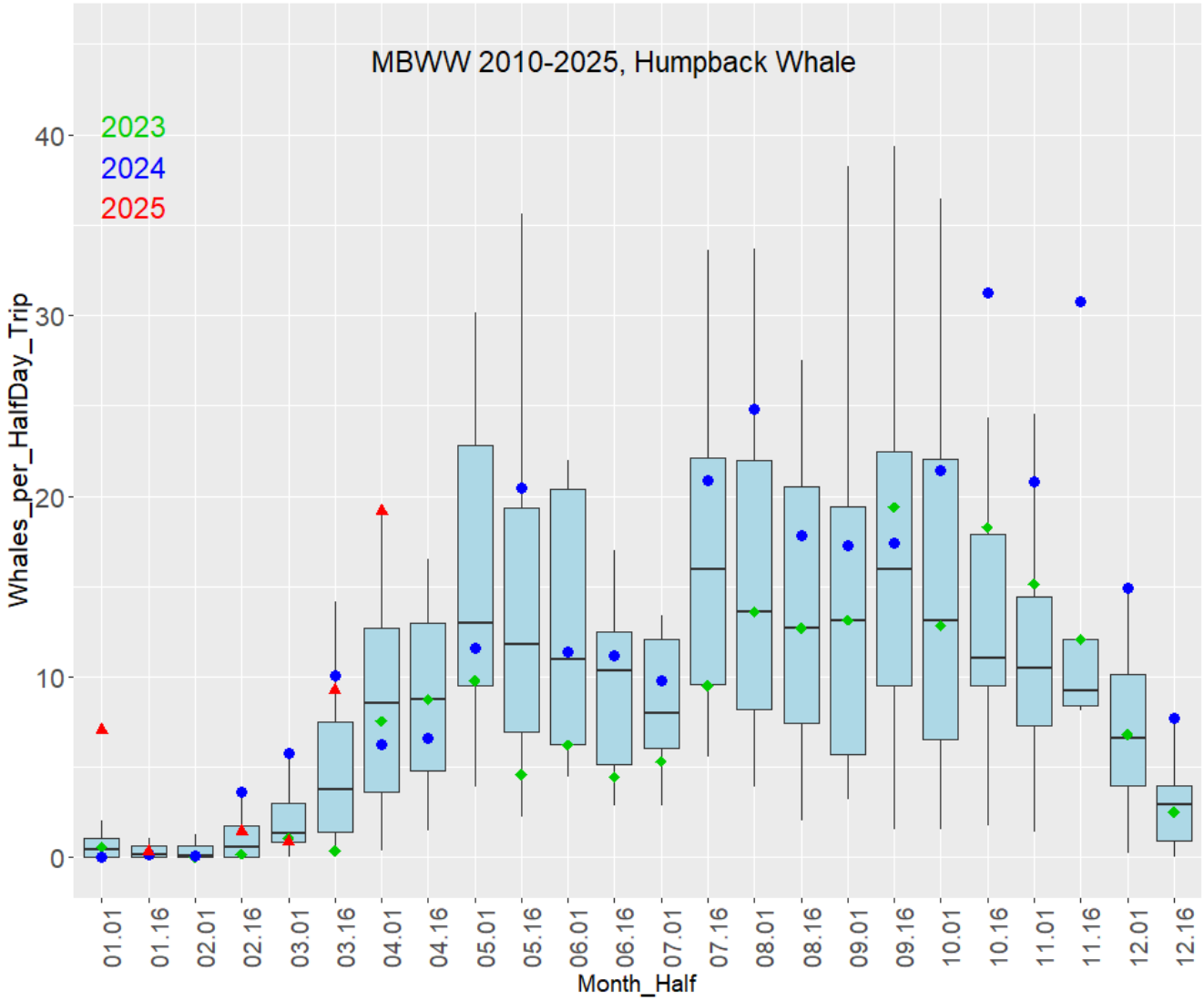


Figure 8. Historical Monterey Bay Whale Watch data for 2010-2025, summarizing the average and variation in the number of humpback whales per half-day trip on a semi-monthly basis (1st- 15th, 16th- end of month). This boxplot follows standard statistical practice in that the black horizontal line is the 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 2023 (green diamonds), 2024 (blue dots) and 2025 (red triangles) and are provided for reference, placing recent whale numbers in a historical context.

C. Whale Watch 2.0 (*All Fishing Zones*)

As of April 9, 2025, blue whale habitat predictions show low habitat suitability in Fishing Zones 1-5 and moderate habitat suitability in Fishing Zone 6, particularly near the US-Mexico border. Current habitat suitability can be accessed at NOAA Coastwatch Habitat Suitability Map.

III. Fishing Season dynamics: §132.8(d)(7)

A. Marine Landings Data System *(All Fishing Zones)*

*Data provided by: California Department of Fish and Wildlife. *CDFW data presented in this section is preliminary and subject to revision.*

Fishing Zones 3-6 opened on January 5, 2025, under a 50% Gear Reduction. Fishing Zones 1-2 opened on January 15, 2025, under a 25% Gear Reduction. A summary of landings information as of April 14, 2025, is provided below (Table 8)

Table 8. Summary of fishing season dynamics information for the commercial fishery, as of April 14. 2025.

Metric	Value	Additional Info
Season status	NA	Open in Fishing Zones 1-2 under a 25% Gear Reduction. Open in Fishing Zones 3-6 under a 50% Gear Reduction.
Number of landings	4,917	NA
Total volume (pounds)	7,933,275	NA
Total Ex-Vessel Value	51,667,766	NA
Average unit price	$6.52	NA
Total number of active vessels	342	NA
Maximum potential traps (based on active permits)	71,819	Estimates are also provided in the Bi-Weekly Fishing Activity Reports

Total volume (pounds) peaked during the week of January 19, 2025, at just over 2 million pounds and has since been decreasing (Figure 9). Fishing Zone 1 shows the highest landings over the course of the season at 5.2 million pounds, followed by Fishing Zone 3 at nearly 2.3 million pounds.

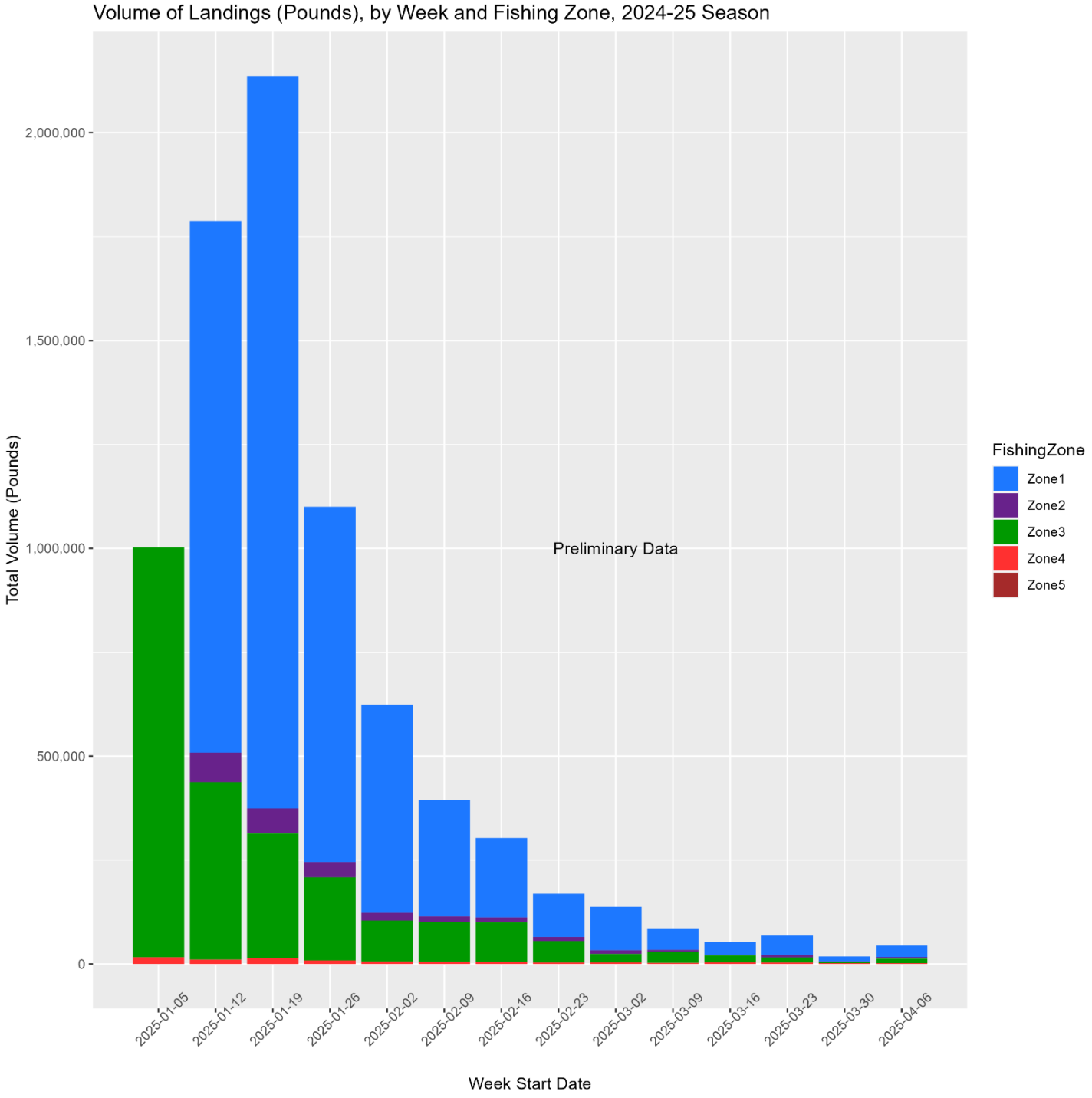


Figure 9. Volume (pounds) landed by week and Fishing Zone. Week 1 starts with the first day the commercial Dungeness crab fishery was open in any area, January 5, 2025. All data are preliminary and subject to change. Certain week-Fishing Zone combinations are withheld due to confidentiality constraints.

Fishing Zones 1 and 3 show the highest number of active vessels throughout the fishing season to date (Figure 10). The number of active vessels peaked the week of January 12, 2025, in Fishing Zone 3 with 144 vessels. Since week 2, the number of active vessels has decreased sharply.

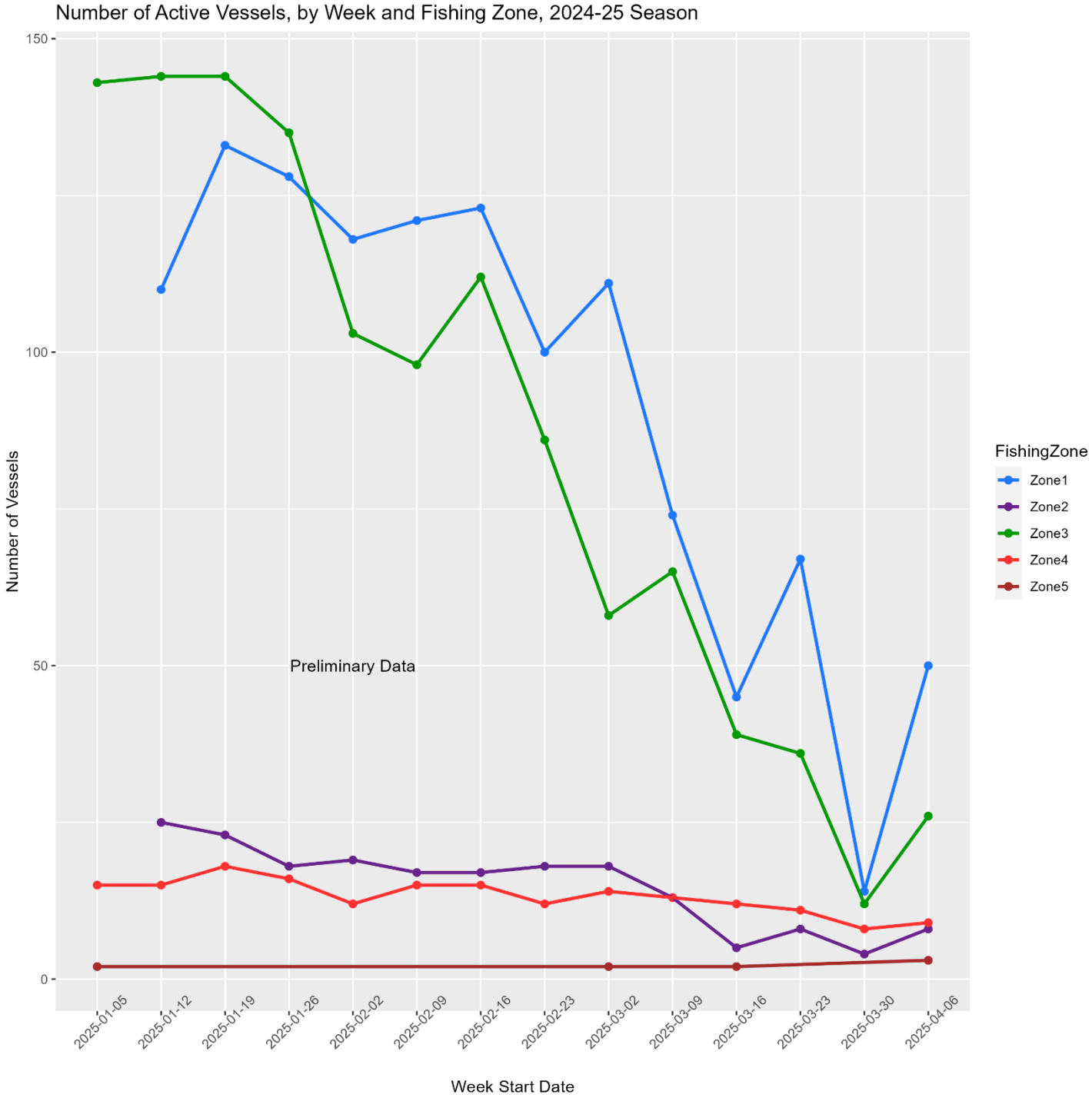


Figure 10. Number of active vessels by week and Fishing Zone. Week 1 starts with the first day the commercial Dungeness crab fishery was open in any area, January 5, 2025. All data are preliminary and subject to change. Some week-Fishing Zone combinations are withheld due to confidentiality constraints.

B. Bi-Weekly Fishing Activity Reports *(All Fishing Zones)*

CDFW has received bi-weekly reports since the first reporting period on January 16, 2025, through the most recent reporting period of April 1, 2025. A summary of reports received for April 1, 2025, is provided in Table 9; note this summary may not reflect all permitted vessels participating in the fishery due to compliance issues.

Table 9. Summary of information provided for the April 1, 2025, bi-weekly reporting period by Fishing Zone (1-6). Accessed from CDFW's Bi-Weekly Reporting database on April 14, 2025. NR-C refers to data withheld due to confidentiality and all data are preliminary and subject to change.

Fishing Zone	Permits Reporting	Avg. Trap Number	Total Traps	Avg. Min. Depth (fa.)	Avg. Max. Depth (fa.)	Max. Depth (fa.)	Final Report	Number of Lost Traps
Zone 1	81	231	18,753	16	31	80	15	61
Zone 2	17	129	2,201	18	38	100	1	2
Zone 3	67	121	8,026	21	38	75	15	48
Zone 4	12	88	1,056	19	33	50	2	16
Zone 5	NR-C	NR-C	NR-C	NR-C	NR-C	NR-C	NR-C	NR-C
Zone 6	0	0	0	0	0	0	0	0
Totals	177	NA	30,036	NA	NA	NA	33	127

Table 10. Total reported traps deployed in each Fishing Zone for the most recent six bi-weekly reporting periods. All data is preliminary and subject to change.

Fishing Zone	Jan 16 - Total Traps	Feb 1 - Total Traps	Feb 16 - Total Traps	Mar 1 - Total Traps	Mar 16 - Total Traps	Apr 1 -Total Traps
Zone 1	33,647	37,792	38,235	40,496	33,144	18,753
Zone 2	3,115	5,007	5,130	4,361	4,108	2,201
Zone 3	22,751	22,552	20,233	17,493	10,920	8,026
Zone 4	2,337	2,455	2,050	2,380	1,705	1,056
Zone 5	NR-C	0	0	NR-C	NR-C	NR-C
Zone 6	0	0	0	0	0	0
Totals	61,850	67,806	65,648	64,730	49,877	30,036

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

A. MBARI Krill Model

Modeled zooplankton conditions for March 2025 indicate normal or expected concentrations throughout California waters. Current data can be accessed from the MBARI website.

V. Ocean conditions: §132.8(d)(9)

A. El Niño/Southern Oscillation (ENSO) Diagnostic

As of April 10, 2025, ENSO neutral is favored during the Northern Hemisphere summer, with a greater than 50% chance through August-October 2025. Please visit the NOAA ENSO Diagnostic webpage for more information.

B. Large Marine Heatwave Tracker

As of April 7, 2025, the current heatwave may continue for the next several months but remains far offshore. Please visit the NOAA Marine Heatweave Tracker webpage for more information.

C. Habitat Compression Index

As of March 2025, Region 2, which includes the north coast of California, shows moderate habitat compression. Region 3, which includes the central coast of California, shows moderate habitat compression (Figure 11). Please visit the NOAA Habitat Compression Index webpage for more information.

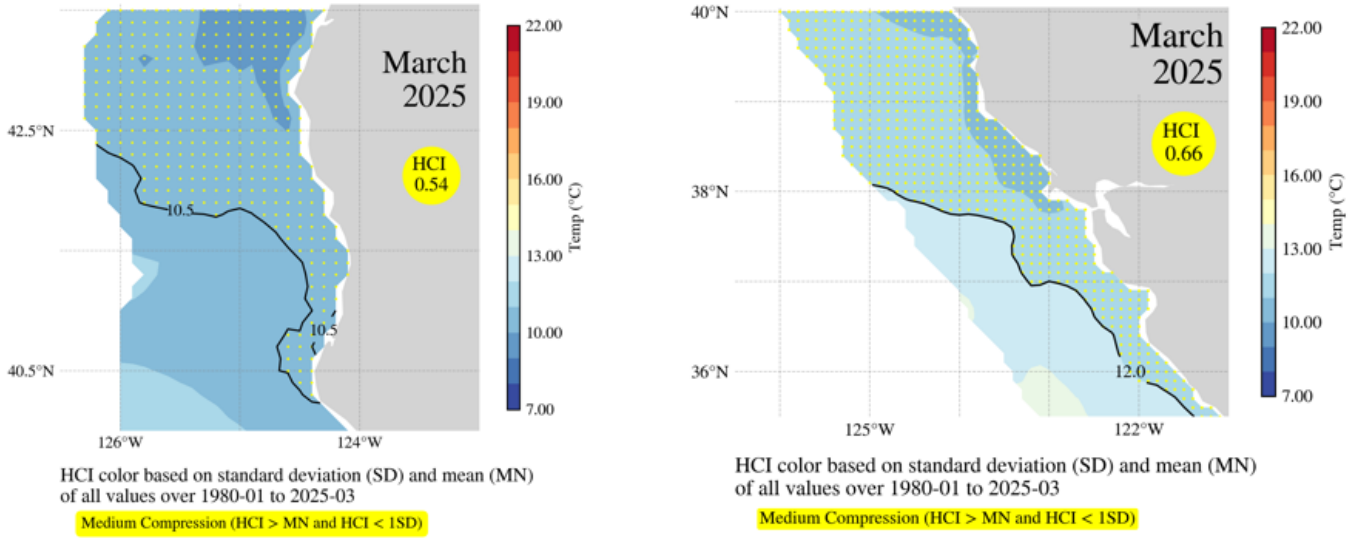


Figure 11. Spatial stricture of the Habitat Compression Index (HCI) for Region 2 (40 to 43.5° N: left side) and Region 3 (35 to 40° N: right side).

VI. Effectiveness of management measures: §132.8(d)(3)

Data provided by: California Department of Fish and Wildlife

CDFW's effectiveness evaluation for the Management Actions specified in §132.8(e) are provided above in the Preliminary Assessment.

VII. Total economic impact to the fleet: §132.8(d)(4)

Data provided by: California Department of Fish and Wildlife

The RAMP regulations specify that, when deciding amongst multiple management measures which would equivalently reduce entanglement risk, CDFW shall consider total economic impact to the fleet and fishing communities.

VIII. Current Impact Score Calculation: §132.8(d)(10)

Data provided by: California Department of Fish and Wildlife

See Table 3 for the current fishing season and calendar year Impact Score. For more information about Impact scoring, please review the Impact Score FAQ.