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

Last updated: March 12, 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 and 2: Continue 25% Gear Reduction
- Fishing Zones 3-6: Continue 50% Gear Reduction
- All Fishing Zones: Continue Fleet Advisory

Recreational Fishery:

- All Fishing Zones: Continue Fleet Advisory

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I. Management Recommendation Summary Rationale

The Marine Region's preliminary recommendation is for the Director to continue the 25% Gear Reduction in Fishing Zones 1 and 2 and the 50% Gear Reduction in Fishing Zones 3, 4, 5 and 6, along with the Fleet Advisory in all Fishing Zones.

The Marine Region also recommends a continuation of the Fleet Advisory for all Fishing Zones (1-6) for the recreational fishery.

These recommendations are supported by the high number of entanglements that occurred during the 2024 calendar year and 3-year running average Impact Score for the commercial fishery. Based on historical migration patterns Marine Life Concentrations are expected to increase in the coming weeks as whales begin to return from their winter breeding grounds. Therefore, precautionary Management Actions should remain in place to reduce entanglement risk, which includes the current 50% Gear Reduction in Fishing Zones 3-6 and 25% Gear Reduction in Fishing Zones 1 and 2. Maintaining the current Management Actions are also supported by oceanographic data which indicates medium to low habitat compression. This will likely provide a broad distribution of foraging opportunities as whales return. Additionally, bi-weekly reports show reduced fishing effort across all Fishing Zones in recent weeks with 46 of the 296 reporting vessels ending the season as of the March 1 reporting period. Those same bi-weekly reports show a reduction of deployed traps from a peak of 67,681 traps during the February 1 reporting period to 59,039 traps from the March 1 period. The next reporting period will reflect the end-of-season reports noted above, showing additional trap reductions. Therefore, a continuation of existing Management Actions will provide continued fishing opportunities while balancing the need to reduce risk of entanglement as whales begin their return to California waters. These measures will again be re-evaluated at the next risk assessment in late March.

Entanglements: No new entanglements have been reported since the last Risk Assessment and no entanglements have been reported in California for the current calendar year. The RAMP Entanglement History document describes confirmed Actionable Species entanglements that have been reported by the National Marine Fisheries Service (NMFS) as of March 12, 2025. Humpback whale entanglements in California commercial Dungeness crab fishing gear and Unknown Fishing Gear bring the three-year rolling average Impact Score to 3.9 (subject to revision), which exceeds the trigger as defined in RAMP of two entanglements, requiring Management Action to reduce entanglement risk in the commercial Dungeness crab fishery.

All Management Actions will be re-evaluated at the next Risk Assessment, which is expected to occur on or around March 28, 2025. 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	25% Gear Reduction	Fleet Advisory	Fleet Advisory
2	25% Gear Reduction	25% Gear Reduction	Fleet Advisory	Fleet Advisory
3	50% Gear Reduction	50% Gear Reduction	Fleet Advisory	Fleet Advisory
4	50% Gear Reduction	50% Gear Reduction	Fleet Advisory	Fleet Advisory
5	50% Gear Reduction	50% Gear Reduction	Fleet Advisory	Fleet Advisory
6	50% Gear Reduction	50% Gear Reduction	Fleet Advisory	Fleet Advisory

II. Alternative Management Actions for the Commercial Fishery

Alternatives Considered but Rejected

- Season Delay – Fishing Season has already started in all Fishing Zones, so not considered as a Management Action.
- Depth Restriction – due to the limited number of whale observations at this time, this Management Action is not recommended.
- Alternative Gear - can only be authorized after April 1st.

AVAILABLE DATA

III. Triggers Requiring Management Action

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

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

The table below outlines 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. 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 March 12, 2025, there have been zero Confirmed Entanglements of humpback whales, blue whales or leatherback sea turtles during the 2025 calendar year.

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

Data provided by: California Department of Fish and Wildlife, 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 turtle is greater than or equal to one within any Fishing Zone

Table 31. 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. * Denotes a partial coverage of a Fishing Zone.

Fishing Zone	CDFW-approved survey data	Triggers attained?
Zone 1	USCG Aerial Survey	No
Zone 2	CDFW Aerial Survey*	No
Zone 3	CDFW Aerial Survey	No
Zone 4	CDFW Aerial Survey*	No
Zone 5	None	No data
Zone 6	None	No data

A. CDFW Surveys (Fishing Zones 2-4)

On March 8, 2025, CDFW conducted an aerial survey from the coast to the 100-fathom contour line at an altitude of 1000ft covering Fishing Zones 2-4 (Figure 1). The survey began at Point Pinos (Fishing Zone 4) and ended at Ten Mile River Bluff (Fishing Zone 2). Fishing Zone 3 experiences intermittent observer coverage due to low-lying fog between San Francisco and just north of Bodega Bay as well as between Fort Ross and Point Arena. Conditions were calm with Beaufort scales of 1-2 during the survey, particularly nearshore and increasing to 3-4 near fog breaks. Only Gray whales were observed, and no Actionable Species were identified during the survey.

Table 42. Counts of Actionable Species seen by CDFW aerial survey conducted on March 8, 2025.

Fishing Zone	Humpback Whales	Unidentified Whales
Zone 2	0	0
Zone 3	0	2
Zone 4	0	0

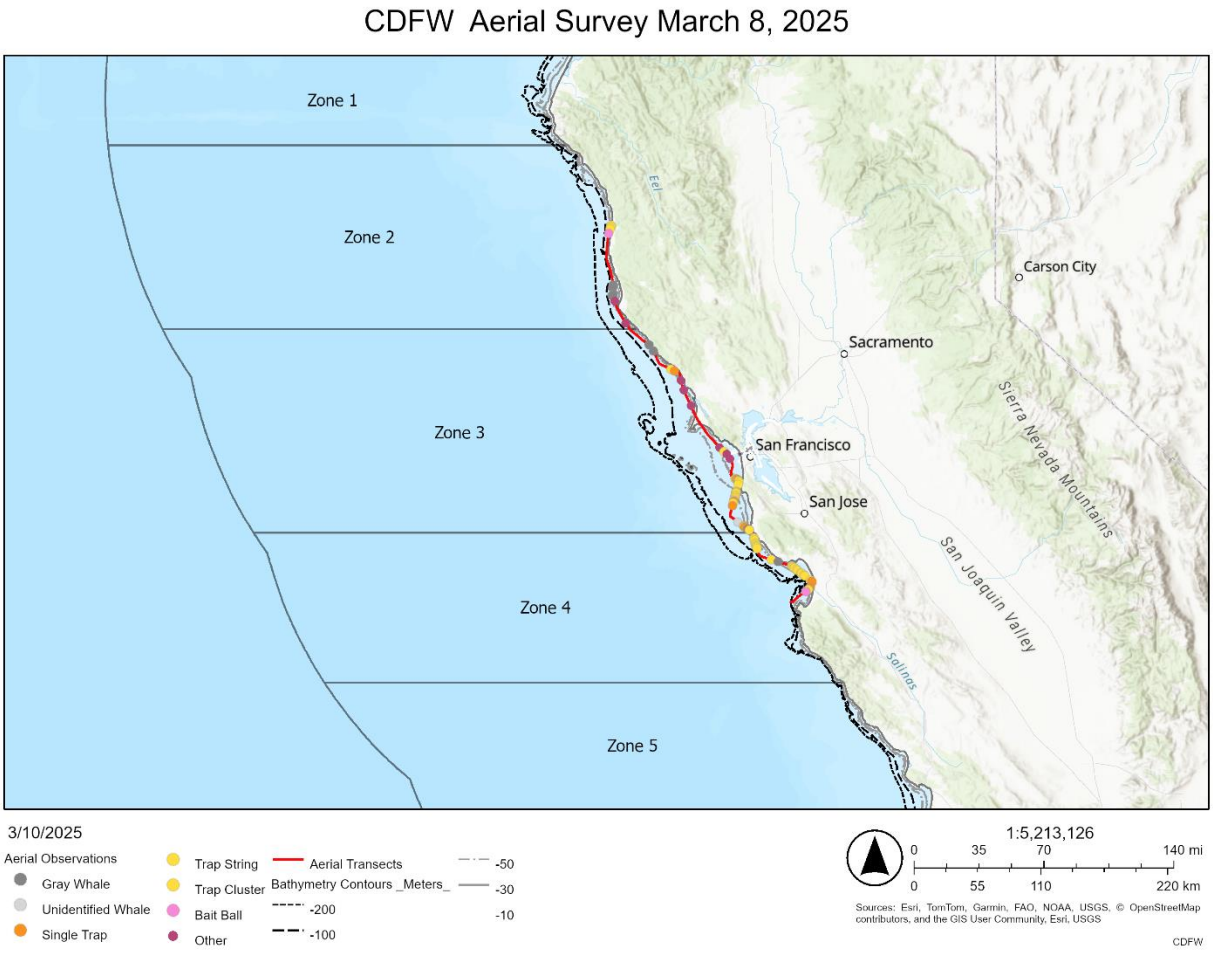

Figure 1. Map of CDFW aerial survey conducted on March 8, 2025.

B. U.S. Coast Guard Survey (Fishing Zone 1)

On March 6, 2025, the U.S. Coast Guard conducted an aerial survey from the coast to the 50-fathom contour line at an altitude of 300-600ft covering Fishing Zone 1 from the CA-OR border to Cape Mendocino. Conditions were windy with a Beaufort state ranging from 5-7. Wind waves were present throughout the survey area which increased sampling noise and limited detectability. Light to heavy fog was present along part of the coastline in northern Humboldt County inside 30

fathoms. No Actionable Species were observed during the survey.

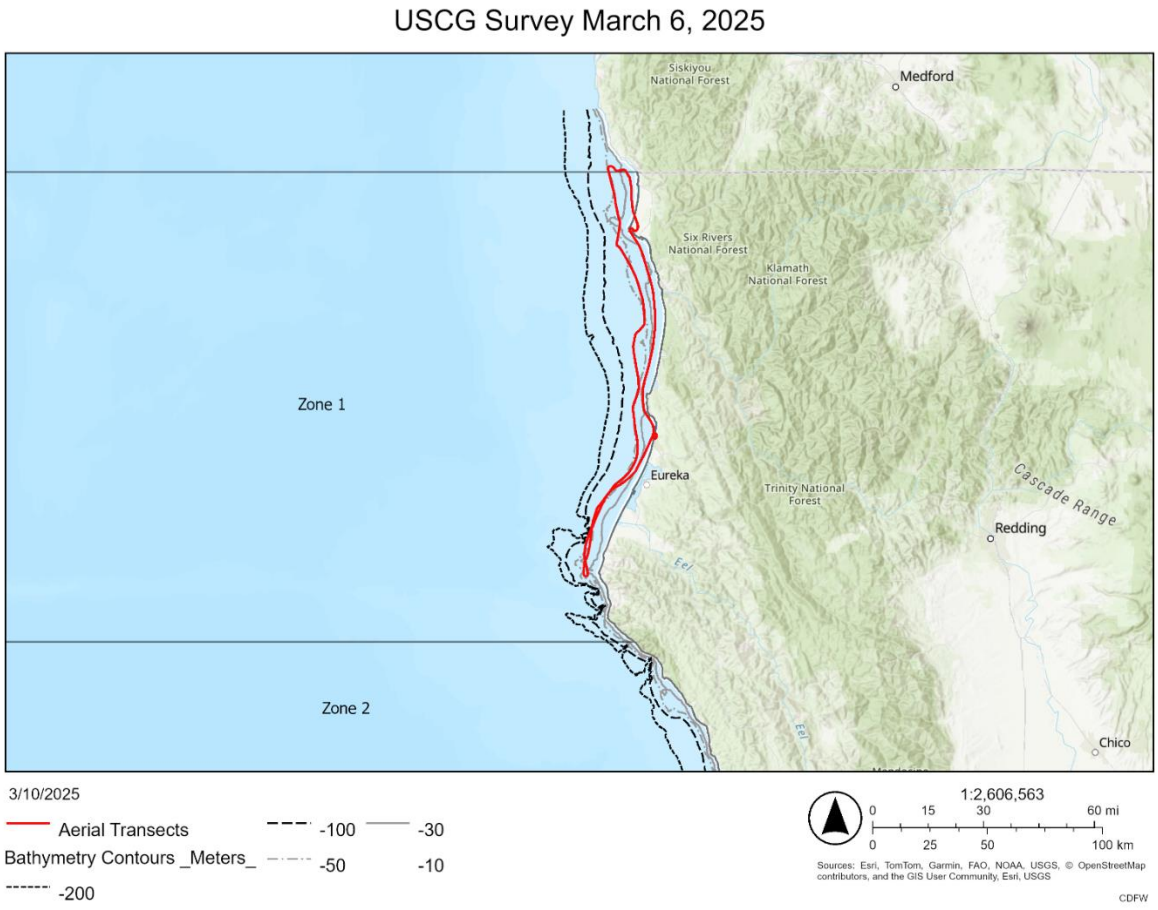

Figure 2. Map of USCG aerial survey conducted on March 6, 2025.

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

Monterey Bay Whale Watch conducted whale watching trips in southern Monterey Bay on five of seven days during the week of February 22-28, 2025. The seven-day average number of humpback whales per half day trip during February 22-28, 2025, was 1.3, with a peak of five humpback whales observed on a half day trip on February 27, 2025 (Figure 3). No blue whales have been observed since October 2024.

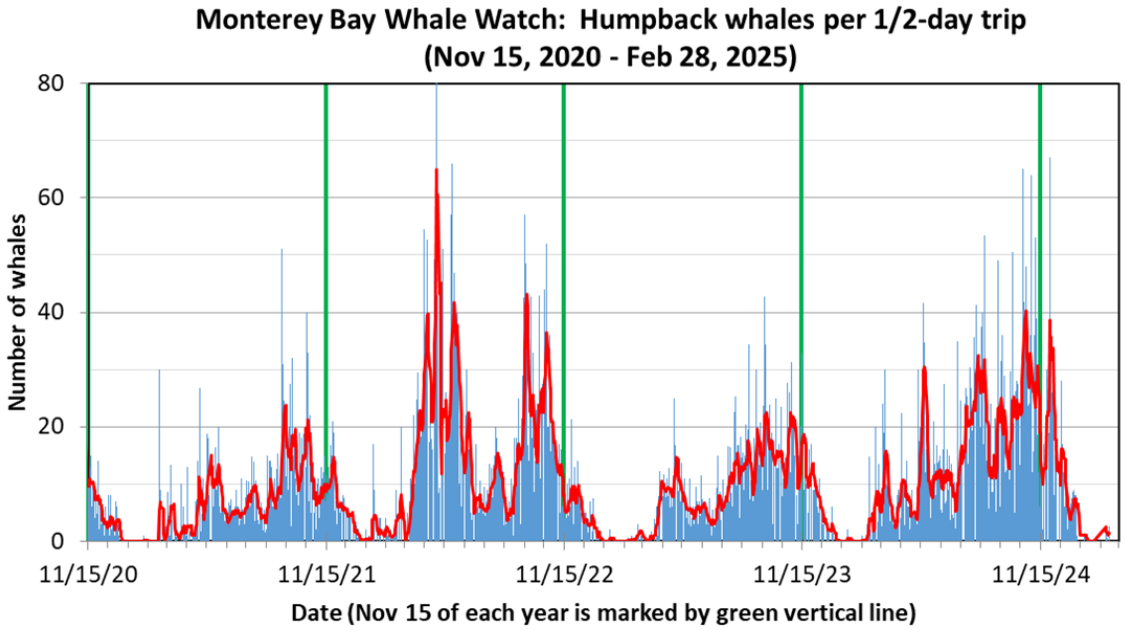

Figure 3. Standardized number of humpback whale sightings for Monterey Bay Whale Watch from 15 November 2020 – 28 February 2025. The y-axis is the number of whales per half-day trip; the thin blue bars are the average daily whale numbers, and the red line is a 7-day running average to make the patterns 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.

No additional information was provided for this Risk Assessment. 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 5. 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 March 10, 2025

Fishing Zone	Number of humpback whales sighted	Number of blue whales sighted
Zone 3	4	0
Zone 4	0	0
Zone 6	4	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 slightly above the historical average for this time of year (Figure 4).

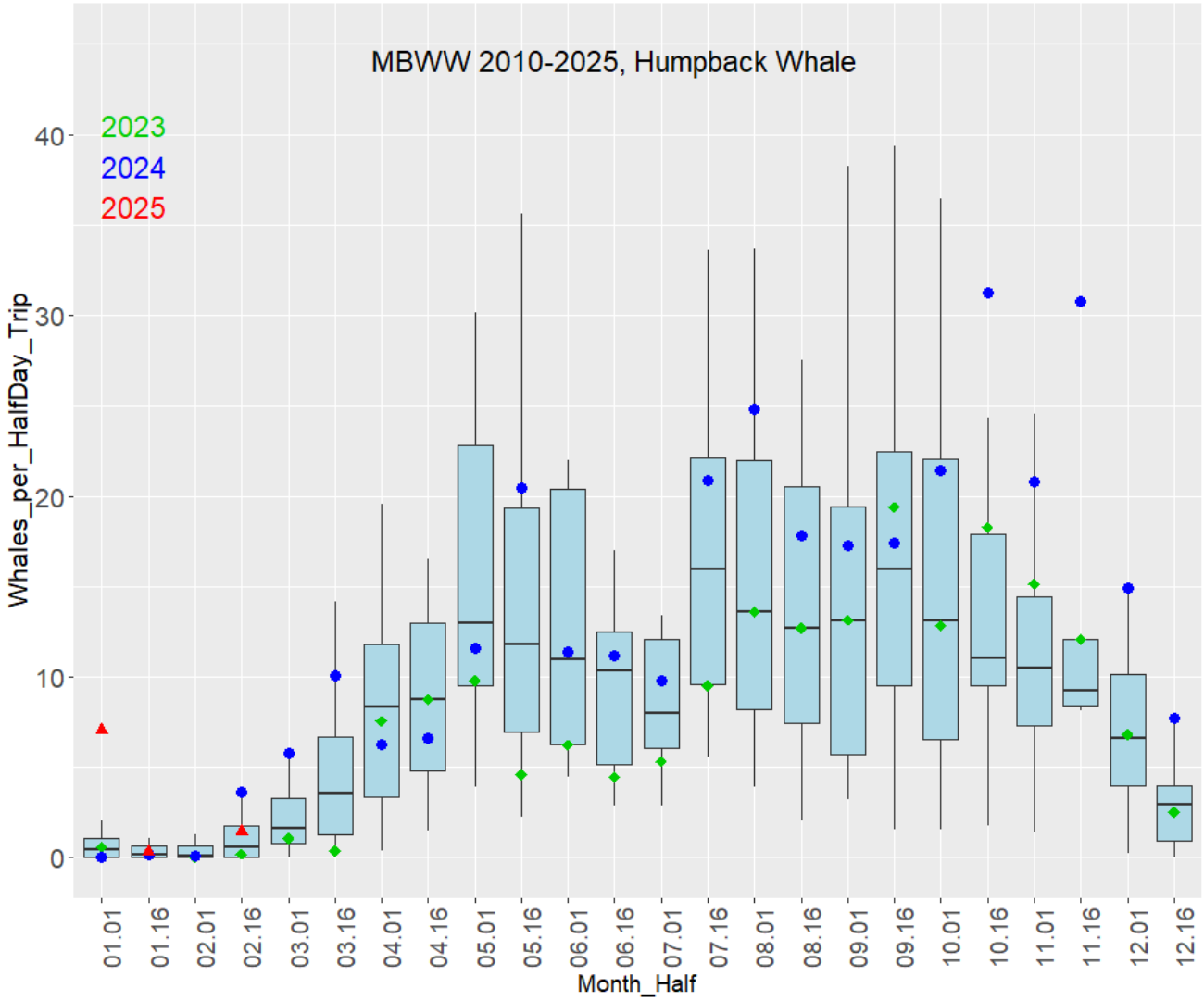

Figure 4. Historical Monterey Bay Whale Watch data for 2010-2025, summarizing the average and variation in the number of humpback whales per half-day trip on a semi-monthly basis (1st- 15th, 16th- end of month). This boxplot follows standard statistical practice in that the black horizontal line is the 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. numbers in a historical context.

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

Blue whale habitat predictions for March 8, 2025, show low habitat suitability in Fishing Zones 1-6. 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 February 6, 2025, is provided below (Table 6).

Table 6. Summary of fishing season dynamics information for the commercial fishery, as of March 10, 2025.

Metric	**Value**	**Additional Info**
Season status	NA	Open in Fishing Zones 1-2 under a 25% Gear Reduction and Fishing Zones 3-6 under a 50% Gear Reduction
Number of daily landings	4,104	NA
Total volume (pounds)	7,484,977	NA
Total Ex-Vessel Value	48,428,090	NA
Average unit price	$6.42	NA
Total number of active vessels	349	NA
Maximum potential traps (based on active permits)	71,169	Estimates reflect gear reductions and 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 5). Fishing Zone 1 shows the highest landings over the course of the season at 4.9 million pounds, followed by Fishing Zone 3 at nearly 1.3 million pounds.

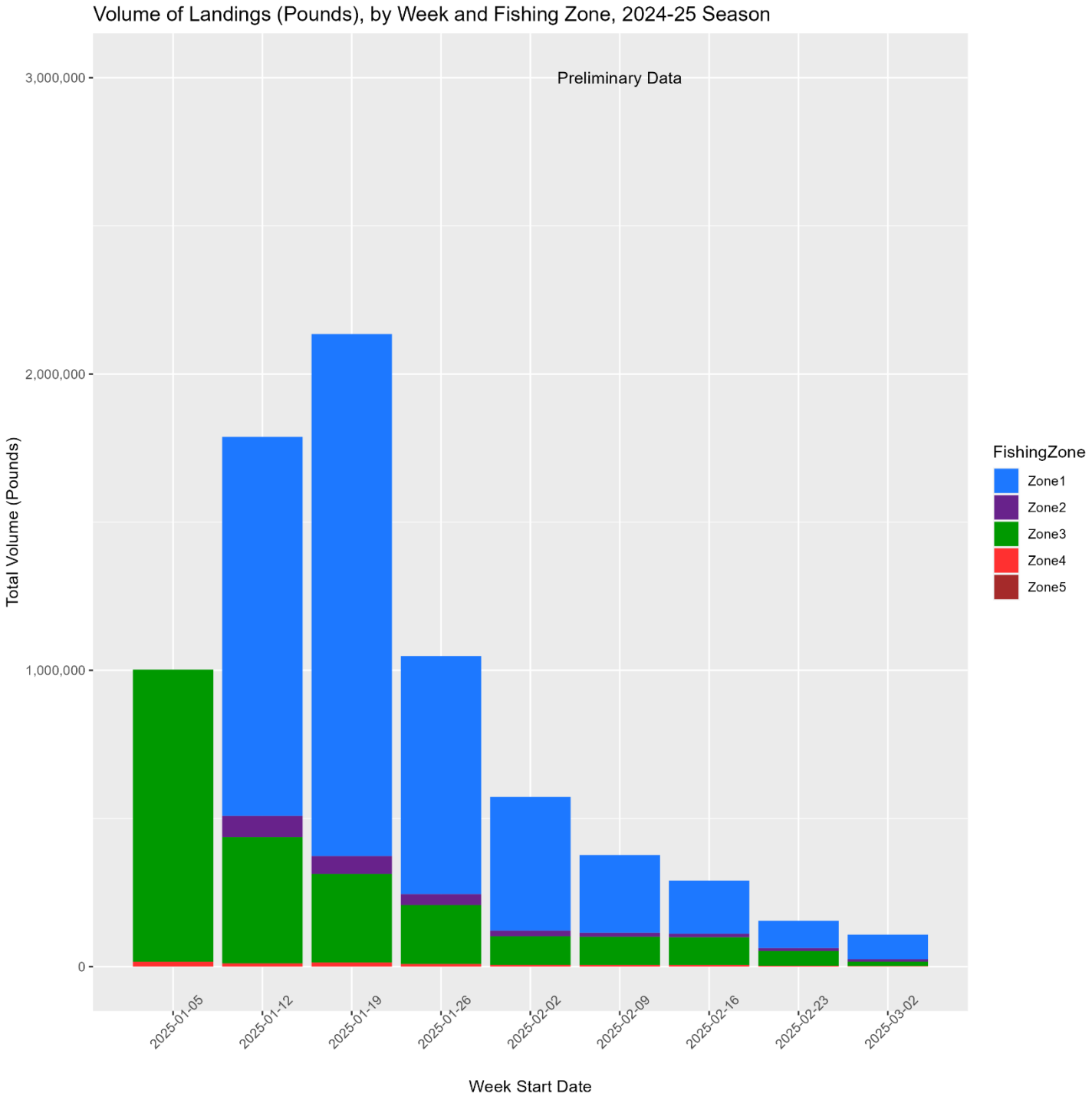

Figure 5. Cumulative volume (pounds) landed by week and Fishing Zone. Week 1 starts with the first day the commercial Dungeness crab fishery was open in any area, January 5, 2024. All data are preliminary and subject to change. Certain week-Fishing Zone combinations are withheld due to confidentiality constraints.

Fishing Zones 1 and 3 show the highest number of active vessels throughout the fishing season to date (Figure 6). 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.

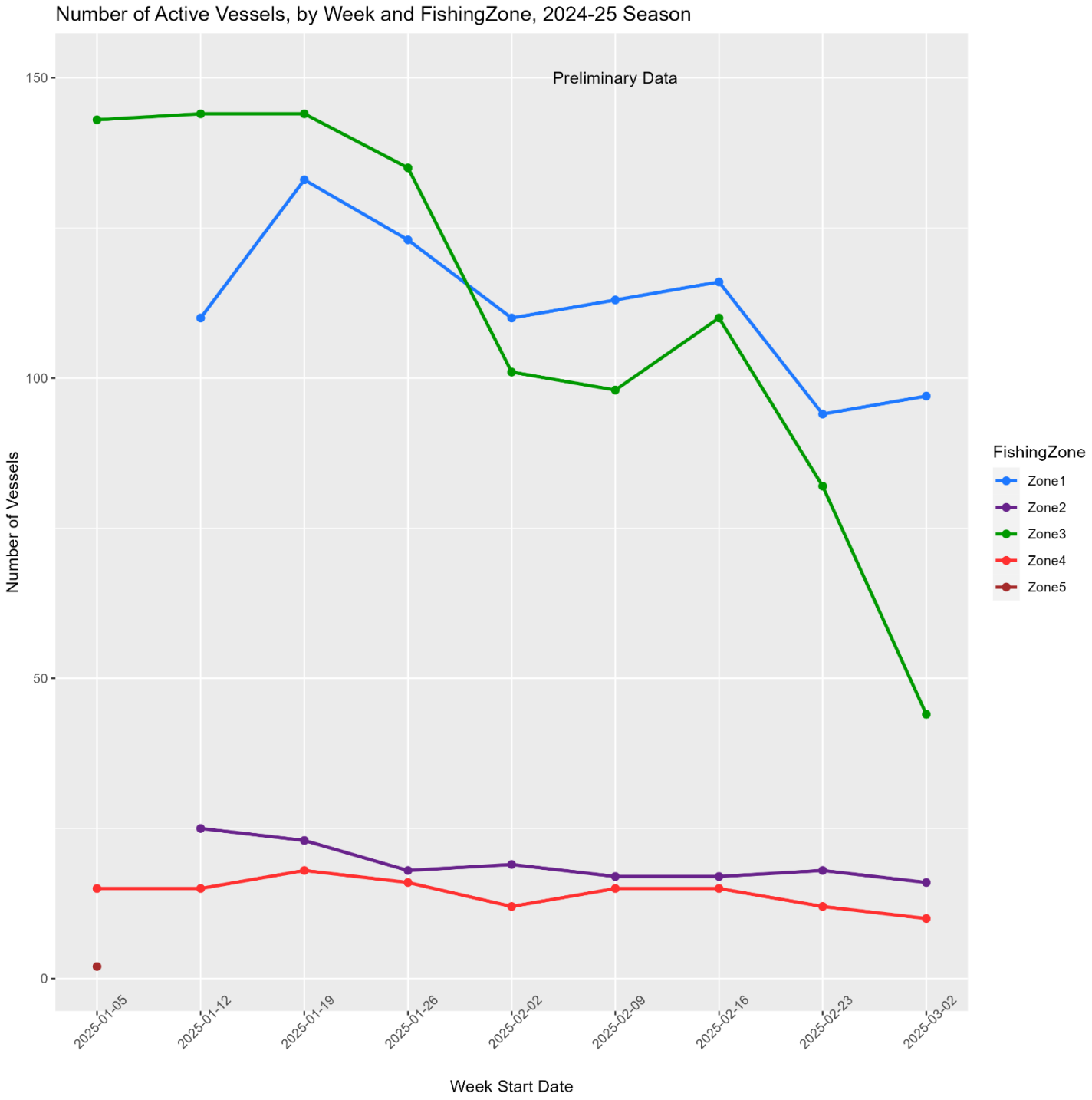

Figure 6. Number of active vessels by week and Fishing Zone. Week 1 starts with the first day the commercial Dungeness crab fishery was open in any area, January 5, 2024. All data are preliminary and subject to change. Some week-Fishing Zone combinations are withheld due to confidentiality constraints.

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 March 1, 2025. A summary of reports received for February 16, 2025, provided in Table 7 and those received for March 1, 2025, are provided in Table 8; note this summary may not reflect all permitted vessels participating in the fishery due to compliance issues.

Table 7. Summary of information provided for the February 16, 2025, bi-weekly reporting period by Fishing Zone (1-6). Accessed from CDFW's Bi-Weekly Reporting database on March 10, 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	139	275	38,235	14	34	70	0	0
Zone 2	24	195	4,680	15	38	90	0	0
Zone 3	131	149	19,588	24	42	80	7	9
Zone 4	15	121	1,825	23	44	98	0	0
Zone 5	0	0	0	0	0	0	0	0
Zone 6	0	0	0	0	0	0	0	0
Totals	309	NA	64,328	NA	NA	NA	7	9

Table 8. Summary of information provided for the March 1, 2025, bi-weekly reporting period by Fishing Zone (1-6). Accessed from CDFW's Bi-Weekly Reporting database on March 10, 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	137	266	36,541	15	35	115	13	74
Zone 2	25	168	3,705	15	35	65	5	3
Zone 3	114	146	16,606	24	43	90	25	112
Zone 4	20	109	2,187	21	39	75	3	13
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	296	NA	59,039	NA	NA	NA	46	202

Table 9. Total reported traps deployed in each Fishing Zone for the four most recent bi-weekly reporting periods. NR-C refers to data withheld due to confidentiality and 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
Zone 1	33,347	37,792	38,235	36,541
Zone 2	3,115	5,007	4,680	3,705
Zone 3	22,751	22,552	19,588	16,606
Zone 4	2,337	2,330	1,825	2,187
Zone 5	NR-C	0	0	NR-C
Zone 6	0	0	0	0
Totals	61,550	67,681	64,328	59,039

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

A. MBARI Krill Model

Modeled zooplankton conditions for January 2025 indicate lower than expected concentrations throughout state 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 February 13, 2025, La Niña conditions are expected to persist in the near term, with a transition to ENSO neutral likely during March-May 2025 (66% chance). Please visit the NOAA ENSO Diagnostic webpage for more information

B. Large Marine Heatwave Tracker

As of January 22, 2025, the current heatwave has regained size and a new heatwave has developed near the Gulf of Alaska. The forecast suggests that the existing heatwave may continue for the next several months, while the heatwave to the north is more likely to dissipate. Please visit the NOAA Marine Heatwave Tracker webpage for more information.

C. Habitat Compression Index

As of February 2025, Region 2, which includes the north coast of California, shows low habitat compression. Region 3, which includes the central coast of California, shows moderate habitat compression (Figure 7). Please visit the NOAA Habitat Compression Index webpage for more information.

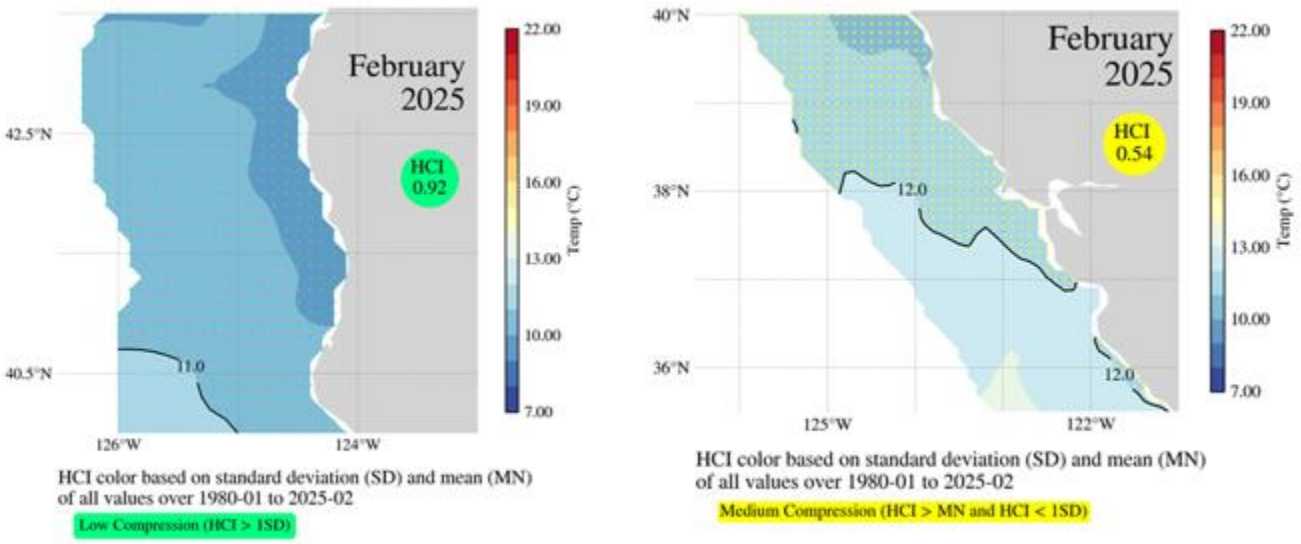

Figure 7. Spatial stricture of the Habitat Compression Index (HCI) for Region 2 (40 to 43.5° N: left side) and Region 3 (35 to 40° N: right side).

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 Initial 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 2 for the current fishing season and calendar year Impact Score. For more information about Impact scoring, please review the Impact Score FAQ.