



California Department of Fish and Wildlife Final Assessment of Marine Life Entanglement Risk and Management Recommendation

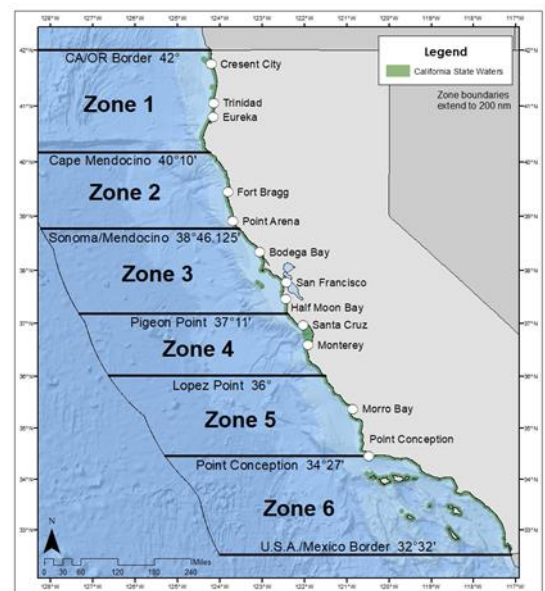
Date: March 14, 2022

An initial assessment and preliminary recommendation were developed by California Department of Fish and Wildlife (CDFW) Marine Region staff for consideration by the California Dungeness Crab Fishing Gear Working Group (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 Dungeness crab fishery. The initial assessment was shared with the Working Group on March 9, 2022 and finalized at the conclusion of the Working Group meeting on March 11, 2022 based on discussions with the group.

A. Recommended Management Action from options identified in subsection (e)

Commercial Fishery: Fleet Advisory for Fishing Zones 1, 2, 3, 4, 5 and 6

CDFW Marine Region staff's final recommendation is that the Director continue the state-wide commercial Dungeness crab fishery Fleet Advisory for Fishing Zones 1-6 due to a confirmed entanglement of a humpback whale in unknown fishing gear off Cypress Point in Monterey on January 27, 2022 (Zone 4). Previous information was shared in the [CDFW Final Assessment and Management Recommendation](#) dated February 15, 2022. Additionally, lack of data in Zones 5 and 6 support the continuation of Fleet Advisory as a precautionary measure. CDFW anticipates that humpback migrations to California waters will increase over the coming weeks and reminds fisherman to use [best fishing practices](#) to minimize risk of entanglement as whales begin to arrive.



Rationale: Based on available information on the entanglement event (reporting location and unidentified gear), a continuation of the state-wide Fleet Advisory will increase opportunities for locating the entangled humpback. In addition, due to lack of available data for Zones 5 and 6 and based on historic migration patterns, humpback whales will soon begin returning to California waters from their winter breeding grounds. Aerial surveys and Monterey Bay Whale Watch data indicate most whales remain outside the Fishing Grounds and no Marine Life Concentration triggers have been reached in Zones where data are available. However, in anticipation of migration arrivals, it is appropriate to alert the commercial fleet and to remind all vessels to continue to implement best fishing practices. It is anticipated that fishing effort

will continue to decline into the spring months, however arrivals of humpback and blue whales will increase, and the Fleet should be prepared to modify fishing operations to minimize risk of entanglement.

CDFW Marine Region shared the Initial Assessment with Working Group representatives and advisors on March 11, 2022. There was no opposition to the recommendation by Marine Region staff and no alternative recommendation was provided by the Working Group. The Working Group did request that CDFW prioritize developing a milestone framework prior to the start of the 2022-23 season to provide certainty around opening dates when evaluating entanglement risk.

CDFW will continue to monitor all available data to inform the next risk assessment (expected to occur on or around April 1, 2022).

B. Marine life entanglement risk, relative to the triggers in subsection (c)

Confirmed Entanglements in California Commercial Dungeness Crab Gear

- During the current Fishing Season: 0
- During the current calendar year: 0
- During the 2021 calendar year: 1 humpback whale

Confirmed Entanglements in Unknown Fishing Gear reported from California:

- During the current Fishing Season: 1 humpback whale
- During the current calendar year: 1 humpback whale
- During the 2021 calendar year: 3 humpback whales

Marine Life Concentrations Surveys and/or Satellite Telemetry Observations:

- **Fishing Zone 1, 2, 3 and 4:** No Management Action triggers reached
- **Fishing Zone 5 and 6:** No current data are available for these Zones, which triggers management response under RAMP (c)(2)(B)(1).

C. Scope of elevated risk based on Management Considerations in subsection (d)

Section 132.8(d)(2): Information from NOAA

- No additional information was made available for this risk assessment

Section 132.8(d)(3): Effectiveness of management measures to reduce entanglement risk

- **Fleet Advisory:** given the unknown gear type involved in the entanglement, the reporting location and relatively low fishing effort by the commercial fishery within Fishing Zone 4 (where the entanglement was reported), a Fleet Advisory will sufficiently protect the few Actionable Species within the Fishing Grounds.

- Fishing Depth Constraint: given the low abundance of humpback whales in the Fishing Grounds, it is not possible to identify an appropriate depth-based closure which would reduce co-occurrence. Therefore, implementing a depth constraint would not be an effective management measure.
- Fishery Closures or Vertical Line Reductions: given the low abundance of humpback whales, would be overly restrictive given the low risk of entanglement. Historic migration patterns suggest most humpback whales have departed the fishing grounds and remain in their winter breeding areas. Combined with declining fishing effort, this indicates low co-occurrence, and therefore low entanglement risk.
- Alternative Gear: cannot be authorized prior to April 1 and no gear is currently authorized for use.

Section 132.8(d)(4): Total economic impact to the fleet and fishing communities

- A Zone closure or Depth Restriction would have higher economic costs to the commercial fishery and given the overall entanglement risk, it is not warranted at this time.

Section 132.8(d)(5): Data availability within and across Fishing Zones

- CDFW aerial survey data are available for Fishing Zones 3 and 4. MBWW data are available for Fishing Zone 4. USCG aerial survey data are available for Fishing Zones 1, 2, 3 and 4. Whale Alert data are available for Fishing Zones 3, 4 and 6.

Section 132.8(d)(6): Known historic marine life migration patterns

- Aerial surveys, Whale Alert and MBWW indicate few humpback whales, which aligns with known historic migration patterns. Predictive models indicate low blue whale habitat suitability within the Fishing Ground

Section 132.8(d)(7): Fishing Season dynamics

- Weekly total landing volume has continued to decrease since late December. In recent weeks, a majority of volume has been harvested from Fishing Zone 3. Overall, 65% of the total volume harvested this season has been from Fishing Zone 1, 30% from Fishing Zone 3, and less than 5% from each of the other Fishing Zones. To date, 41% of harvested volume has been landed into Crescent City, 19% into Eureka, 11% each into San Francisco and Half Moon Bay, and less than 10% each from the other port complexes.
- Vessel activity by port has been highest in Crescent City (84 vessels) and Eureka (69 vessels), followed by San Francisco (56 vessels), Half Moon Bay (55 vessels), and Bodega Bay (54 vessels). Vessels have also made landings into Fort Bragg (31), Monterey (24), Trinidad (14), and Morro Bay (3).

- 38,220 traps are estimated to be deployed statewide for the March 1, 2022 reporting period, which covers fishery participation from February 16-28, 2022. The majority of these (51%) are located within Fishing Zone 3 while 34% of these located within Fishing Zone 1.
- The total traps reported during the March 1 report period has declined by about 60% from the season high that occurred during the January 16 reporting period. Of the 57,020 traps that have been removed between the January 16 and March 1 reporting periods, 63% were removed from Fishing Zone 1 followed by 27% from Fishing Zone 3.
- The number of landings has continued to decline, with the highest activity during recent weeks in the Central Management Area.

Section 132.8(d)(8): Known distribution and abundance of key forage

- Numerous bait balls (presumed to be schooling fish) were observed during the aerial survey across Fishing Zones 3 and 4. A single mola was observed in Fishing Zone 4.

Section 132.8(d)(9): Ocean conditions

- As of February 10, 2022, La Niña conditions are expected to continue into the Northern Hemisphere spring (77% change during March-May) and then transition to ENSO-neutral (56% change during May-July).
- The most recent Habitat Compression Index values are for February 2022, during which there was moderate compression between 35.5 and 40°N.

Section 132.8(d)(10): Current Impact Score Calculation

- Impact score calculation under RAMP began on January 1, 2021. The 2021 calendar year impact score is 1.89 for humpback whales and 0 for blue whales and leatherback sea turtles. The current impact scores for 2022 are 0.38 for humpback whales and 0 for blue whales and leatherback sea turtles.

Section 132.8(d)(11): Actionable Species migration into or out of Fishing Grounds and across Fishing Zones

- Based on aerial survey data and MBWW data, few humpback whales were observed within the Fishing Grounds indicating spring migration has yet to occur.