



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

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Date: December 8, 2021

An initial assessment and preliminary recommendation were developed by California Department of Fish and Wildlife (CDFW) Marine Region 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 recreational and commercial Dungeness crab fishery. The initial assessment and preliminary Management Action recommendation were shared with the Working Group on December 6, 2021, and finalized on December 8, 2021, based on discussions with the Working Group and after consideration of all available data.

### A. Recommended Management Actions

#### Recreational Fishery:

- **Fleet Advisory: Fishing Zones 1, 2, 4, 5 and 6**
- **Temporary Crab Trap Restriction: Fishing Zone 3**

#### Commercial Fishery:

- **Fleet Advisory: Fishing Zone 1, 2, 4, 5 and 6**
- **Season Delay: Fishing Zone 3**
- **Depth Restriction: Fishing Zone 4**

#### Fleet Advisories

Recreational Fishery: The recreational Dungeness crab fishery is currently open statewide in all Fishing Zones (see CCR Title 14, section 29.80(e)). CDFW Marine Region's final recommendation is for the Director to maintain the current Fleet Advisory for Fishing Zones 1, 2, 5 and 6 for the recreational fishery. Staff also recommend lifting the trap restriction in Zone 4 and including this Zone in a Fleet Advisory, with specific information on recent humpback sighting's locations.

Commercial Fishery: The commercial Dungeness crab fishery is currently open in Fishing Zones 1, 2, 5 and 6. CDFW Marine Region's final recommendation is for the Director to maintain the current Fleet Advisory for Fishing Zones 1, 2, 5 and 6 and open Zone 4 with a Depth Restriction and Fleet Advisory such that fishing will only be allowed in ocean waters shallower than the 40-fathom depth contour as defined in the Code of Federal Regulations.

Rationale: Survey data for Zones 1, 2, 5, and 6 were available prior to this risk assessment. Therefore, the no data scenarios under RAMP are no longer applicable, and Zones can be evaluated based on the totality of the management considerations and previous survey data. Based on available data, no RAMP triggers have been reached in Fishing Zones 1, 2, 5, or 6

that would require Management Action. Several concentrations of humpback whales remain in Zones 3 and 4, indicating humpback whales remain in California waters and the migration to winter breeding grounds is still ongoing. However, the concentration and distribution of whales in Zone 4 could permit fishing to begin if a Depth Restriction is implemented for the commercial fishery to be protective of humpback whales as they continue their migration out of California. Therefore, the recreational and commercial crab fleets should use additional precaution when setting gear in Zones 1, 2, 4, 5 and 6 because humpback whales may still be present. Both the commercial and recreational fishing fleet should remain vigilant and move or avoid setting gear in areas where whales are transiting or foraging to further minimize risk of entanglement. The recommendation is for these Management Actions to remain in place until they can be reevaluated at the next risk assessment (expected to occur on or around December 15, 2021) to inform this next risk assessment by the Director.

### **Crab Trap Restriction/ Season Delay/ Depth Constraint**

Recreational Fishery: A temporary recreational crab trap restriction is currently in place for Fishing Zones 3 and 4. CDFW Marine Region's final recommendation is for the Director to continue this temporary trap restriction for the recreational fishery in Zone 3 and lift the restriction for Zone 4.

Commercial Fishery: A season delay is currently in place for Fishing Zones 3 and 4 for the commercial Dungeness crab fishery. CDFW Marine Regions final recommendation is for the Director to continue a season delay for the commercial fishery in Zone 3 and implement a Depth Restriction for Zone 4 with a Depth Restriction such that fishing will only be allowed in ocean waters shallower than the 40-fathom depth contour as defined in the Code of Federal Regulations.

Rationale: Based on exceedance of Marine Life Concentration triggers for humpback whales in Zones 3 and 4, continued Management Action is necessary.

- Zone 3: Cascadia Research vessel surveys and CDFW aerial surveys indicated numerous aggregations of humpback whales across Zone 3. Based on both datasets, humpback whales were distributed widely both inshore and offshore. Given the significant number of humpback whales observed, there remains an increased risk of entanglement with vertical lines and surface gear in Zone 3. A continuation of the commercial season delay and temporary recreational trap restriction in Zone 3 is the recommended Management Action based on the wide distribution of humpback whales across all depths within this Zone. A Depth Restriction or Gear Reduction for the commercial fishery would not minimize entanglement risk due to whale distribution and expected high gear concentrations during the season opener for both fisheries in Zone 3. As a result, CDFW Marine Region's final recommendation is a continued delay of the Fishing Season for the commercial fishery and the continued temporary restriction on the use of crab traps for the recreational fishery in Zone 3. The recommendation is for these Management Actions to remain in place until they can be reevaluated at the next risk assessment (expected to occur on or around December 15, 2021). The next Working Group meeting date is likely to occur on or around December 14, 2021, to inform this next risk assessment by the Director.

- Zone 4: Monterey Bay Whale Watch (MBWW) data indicate above average daily sightings within Zone 4. Based on Cascadia vessel survey data, most sightings occurring on canyon edges over deep water (>50 fathoms). A Depth Constraint may therefore be effective at reducing co-occurrence between humpback whales and trap gear within Fishing Zone 4. The recommended Management Action for Zone 4 is to lift the temporary recreational trap restriction and to open the commercial fishery with a Depth Restriction seaward of the 40-fathom contour such that fishing will only be allowed in ocean waters shallower than the 40-fathom depth contour (as defined by approximating the 40-fathom depth contour by connecting the appropriate set of waypoints adopted in Federal Regulations and published in Title 50, Code of Federal Regulations Part 660). Humpback sightings continue to decline within this Zone and recent survey data indicate the remaining whales to be on the edge of the Fishing Grounds in predominately deeper water. CDFW Marine Region's final recommendation for the commercial fleet in Zone 4 is based on the continuing decline in whale abundance, their distribution, and the new "whale fair start provision" that is anticipated to discourage participants from fishing in Zone 4 if they plan on fishing Zone 3 without a 30-day delay penalty. In addition, vessels home ported in Half Moon Bay and San Francisco will not be able to transit back from Zone 4 with Dungeness crab on board. Although this may limit fishing activity in Zone 4 upon opening, the above historic average sightings of whales in Zone 4, along with their distribution over deep water make a Depth Restriction for the commercial fishery warranted. This is supported by the presence of numerous aggregations of humpback whales in Zone 3, in particular a grouping at the southern end of Zone 3 just north of the border with Zone 4, indicating a precautionary approach in adjacent Zone 4 is appropriate. The recommendation is for these Management Actions to remain in place until they can be reevaluated at the next risk assessment (expected to occur on or around December 15, 2021). to inform this next risk assessment by the Director.

**Summary of RAMP triggers and Management Considerations analyzed during preparation of this Final Assessment and Final Recommendation.**

**B. Marine life entanglement risk, based on triggers in subsection (c)**

**Confirmed Entanglements in California Commercial Dungeness Crab Gear:**

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

**Confirmed Entanglements in Unknown Fishing Gear reported from California:**

- During the current Fishing Season: 0
- During the current calendar year: 1 Humpback whale
  - Note: Three additional confirmed entanglements in unidentified fishing gear are under review, one of which is known not to be commercial Dungeness crab gear.

**Marine Life Concentration Surveys and/or Satellite Telemetry Observations:**

- **Fishing Zone 3 and 4:** Cascadia Research Vessel surveys observed 60 humpback

whales in Zone 3, exceeding the trigger pursuant to Title 14, CCR, section 132.8(c)(2)(A)(4)(a) of 20 humpbacks in a single Fishing Zone. In addition, based on MBWW data, the most recent running weekly average for Zone 4 is 6.3 humpback whales, which exceeds 5 humpback whales in a single Fishing Zone and triggers management response under RAMP (c)(2)(A)(4).

### **C. Scope of 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

- In Zone 3, the aerial survey and vessel-based observations show continued aggregations of foraging humpback whales. As a result of Marine Life Concentration triggers for humpback whales being met, a continuation of the Fishing Zone delay/temporary trap prohibition is the most effective Management Action for Zone 3 to minimize co-occurrence with Dungeness crab trap fishing gear and Actionable Species.
- In Zone 4, the aerial survey, vessel-based observations and MBWW data show continued aggregations of humpback whales and foraging occurring along the canyon edges. As a result of Marine Life Concentration triggers for humpback whales being met, a Depth Constraint for the commercial fishery is the most effective Management Action for Zone 4 to minimize co-occurrence with Dungeness crab trap fishing gear and Actionable Species.
- In Zones 1, 2, 4, 5 and 6, a Fleet Advisory is the most effective Management Action based on the whales observed and known migration patterns in these areas.

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

- A continuation of the Fishing Zone 3 delay will impact operators and businesses. In particular, there will be economic costs to individual operators, however given the risk of entanglement (which is expected to decrease), the short-term economic costs must also be weighed against the longer-term viability of the commercial fishery across California. A Depth Constraint in Fishing Zone 4 will allow fishing opportunity for operators and businesses during the coming holidays.

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

- CDFW aerial survey data are available for Zones 3 and 4. Cascadia Research vessel survey data are available for Zones 3 and 4. MBWW data are available for Zone 4. Point Blue Conservation Science observation data are available for Zones 3, 4, and 6.

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

- Aerial and vessel-based surveys indicate continued aggregations of humpback

whale broadly distributed across Zone 3 and smaller aggregations on the canyon/shelf edges in Zone 4.

- Presence of humpback whales is slightly above average based on MBWW data, an indication that migration out of California waters is still ongoing.

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

- Landing's data and bi-weekly reporting are currently being compiled and will be included in the next risk assessment.

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

- Humpbacks were distributed widely both inshore and offshore feeding primarily on schooling fish within Zone 3.

#### Section 132.8(d)(9): Ocean conditions

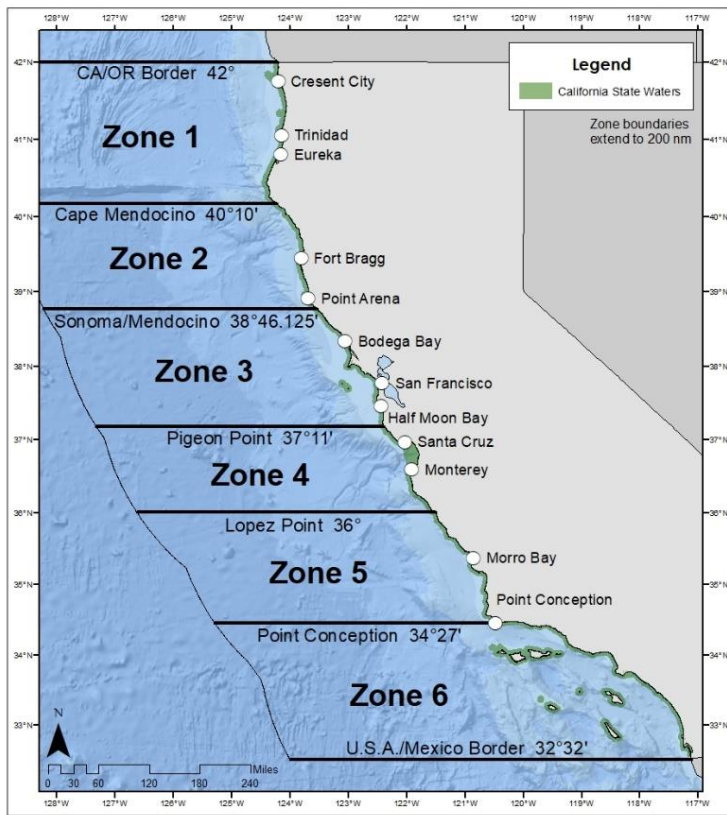
- The prediction of ENSO conditions was last updated on November 11, 2021. La Niña is likely to continue through the Northern Hemisphere winter 2021-22 (~90% chance) and into spring 2022 (~50% chance during March-May).

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

- Impact score calculation under RAMP began on January 1, 2021. The current impact score is 1.13 for humpback whales and 0 for blue whales and Pacific leatherback sea turtles.

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

- As of December 3, Cascadia Research reported at least 18 humpback arrivals to mainland Mexico and Baja breeding grounds, which are known to be from California waters. This is a twofold increase over the data that was reported during the last risk assessment.
- Based on aerial surveys conducted by CDFW and vessel surveys conducted by Cascadia Research, humpback whales are still present within the Gulf of the Farallones and Monterey Bay.



**RAMP Fishing Zone Boundaries**