



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

Date: April 14, 2021

An initial assessment and preliminary recommendation was 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 April 12, 2021 and finalized at the conclusion of the Working Group meeting on April 13, 2021 based on discussions with the group.

A. 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: 0

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
- **Fishing Zone 6:** Each confirmed entanglement during a Fishing Seasons triggers management response under RAMP (c)(1)(B)(1).

Marine Life Concentrations Surveys and/or Satellite Telemetry Observations:

- **Fishing Zone 1, 2, 5 and 6:** No current CDFW approved survey data are available for these Zones, which triggers management response under RAMP (c)(2)(B)(1).

B. 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

- Given the low relative running average sightings of Humpback whales and no observations during CDFW aerial surveys, a Fleet Advisory remains an effective Management Action due to anticipated declining fishing effort in all Fishing Zones.

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

- A Fleet Advisory is not anticipated to have significant economic impact on the fleet or fishing communities as it allows for continued fishing opportunity.

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

- CDFW aerial survey data are available for Zones 3 and 4 and additional Monterey Bay Whale Watch (MBWW) data and Cascadia Research data are available for Fishing Zone 4. Point Blue observation data are available for Zones 3, 4 and 6. The Habitat Compression Index and Whale Watch 2.0 habitat predictions are available for all Zones.

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

- Low presence of Humpback whales across all Fishing Zones is consistent with average historical early spring patterns that show few Humpback whale sightings when whales are still migrating from breeding areas off Mexico and Central America. Surveys in late March at these breeding areas indicated lower numbers of Humpback whales than previously observed during mid-winter surveys, indicating some departures. Three sightings of Humpback whales made prior to the last risk assessment are of known animals from Mexico, indicating a few migration arrivals.
- Absence of Blue whales, with no recent sightings.

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

- Season price negotiations delayed actual start of fishing following the December 23, 2020 statewide opener. Most vessels began setting gear on Monday January 11, 2021.
- Based on CDFW landings data, 356 vessels have participated in the fishery as of April 6, 2021. Week 5 had the highest number of potential traps deployed across all Fishing Zones, with an estimated total of 94,675 traps. Fishing Zone 3 had the highest total, followed by Zone 1. Based on the most recent landings data from week 15, vessel participation and landings volume has decreased from the start of the season. The estimated maximum number of traps is currently 39,550 which is a slight decrease from the last risk assessment when 43,725 traps were estimated. Only Zone 3 has a higher-than-average number of traps deployed based on past seasons. Since 2014 (excluding 2016), the average estimated number of traps deployed in Bodega Bay, San Francisco and Half Moon Bay was 22,945, with a range of 11,075 to 28,900. For the current season, there is an estimated 29,525 pots deployed in Zone 3.
- CDFW required bi-weekly trap reporting estimated 34,444 traps fishing in average minimum depths of 11 – 29 fathoms and an average max depth of 24 – 53 fathoms

across all Fishing Zones. *Note: CDFW has not achieved 100% reporting by all active permits.*

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

- Krill abundance (higher offshore in the outer slope) is also anticipated to be closer to average yearly values while anchovy is still considered to be above average, given the historical record.
- Cool ocean temperatures and strong spring upwelling conditions continue from February to March and the Habitat Compression Index (HCI) indicates a current low compression state. It is anticipated that cool conditions with expanded upwelling habitat will continue with no impact of habitat compression that would otherwise result in increased concentrations and aggregations of whales and forage nearshore.

Section 132.8(d)(9): Ocean conditions

- The prediction of ENSO conditions was last updated on April 8, 2021. La Niña conditions persisted in March with an 80% chance of a transition from this condition to ENSO-neutral during May - July 2021.
- The latest outlook of late winter/spring ocean ecosystem conditions shows that ocean conditions have cooled significantly over this past winter and conditions in spring are trending toward cool and productive conditions. It is anticipated that cool conditions will continue, with expanded upwelling habitat and no signs of habitat compression that would otherwise result in increased concentrations and aggregations of whales and forage nearshore.

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

- Impact score calculation under RAMP began on January 1, 2021. The current impact score is 0.38 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

- Based on CDFW aerial survey data, Monterey Bay Whale Watch data, Cascadia Research data and Point Blue Conservation Science observation data, significant migration into the Fishing Grounds has yet to occur.

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

Fishing Zones 1-6: CDFW Marine Region staff's recommendation is to maintain a state-wide Fleet Advisory based on the lack of recent RAMP approved survey data for Zones 1, 2, 5 and 6 and due to a confirmed entanglement in unknown gear off Ventura, Zone 6. However, the entanglement was reported from an area that is outside the traditional commercial fishing area for Dungeness crab. Based on CDFW landings data and bi-weekly reporting no vessels are

active in the entanglement reporting location, which was last sighted in an area off Ventura, and fewer than three vessels are active in the entirety of Zone 6. Monterey Bay Whale Watch Data and Cascadia Research vessel surveys for Zone 4 and CDFW aerial survey data for Zones 3 and 4 observed few Actionable Species, which serves as a proxy for anticipated observations in Fishing Zones 1, 2, 5 and 6. Although migration is expected to increase into Zone 4 and adjacent Zones based on known historic migration patterns, available data indicate the bulk of the migration has not begun to arrive at this time. In addition, based on favorable (low risk) oceanographic and forage condition data, cool conditions exist, resulting in low compression of available forage, decreasing the likelihood of co-occurrence of trap gear and whales as they begin to arrive to the Fishing Grounds. This is supported by late March sightings of a few Humpback whales foraging in deep water on krill patches. Ocean and forage conditions do not warrant concern, and fleet participation is low across most port complexes when compared to activity levels from previous years (except ports in Zone 3 (Bodega Bay, San Francisco, and Half Moon Bay)), and continuing to decrease from participation levels in the weeks prior to this risk assessment. Given the above, paired with continued low presence of Humpback whales and Blues whales, risk is low across all management considerations at this time.

The RAMP regulations indicate a Fleet Advisory is warranted if the level of risk is elevated and/or anticipated to increase but more restrictive management actions are not necessary at this time. The Director may issue an advisory notice to the Fleet to employ voluntary efforts and/or measures to reduce the risk of entanglements (i.e., fishing best practices) and to avoid triggering additional management actions. As a result, CDFW encourages the fleet to implement fishing best practices (e.g. minimizing knots, line scope) and to immediately remove all gear when an operator no longer intends to fish. Vessels fishing in Zones 4 and 6 should pay particular attention to the location of set gear and foraging whales and minimize entanglement risk by adhering to the [Best Practices Guide](#).

CDFW Marine Region shared the initial assessment and preliminary management recommendation with Working Group representatives and advisors on April 13, 2021. The Fleet Advisory was broadly supported by the Working Group and no opposition to the preliminary recommendation was voiced during the meeting.

CDFW will continue to monitor all available data to inform the next risk assessment (expected to occur on or around May 3, 2021).

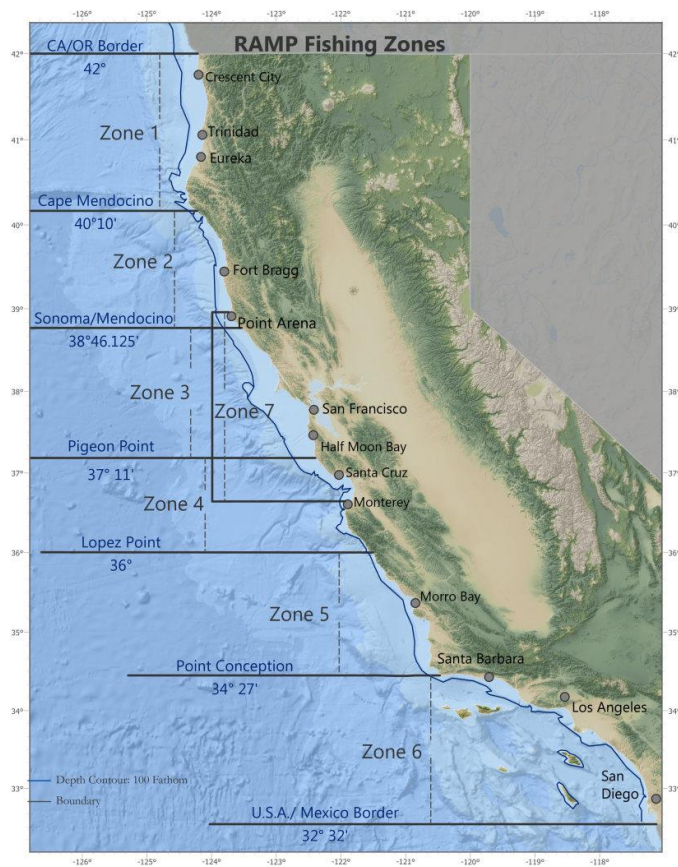


Figure 1. RAMP Fishing Zone boundaries.