



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

Date: March 17, 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 March 12, 2021 and finalized at the conclusion of the Working Group meeting on March 16, 2021 based on discussions with the group.

A. 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

Confirmed Entanglements in Unknown Fishing Gear reported from California:

- During the current Fishing Season: 0
- During the current calendar year: 0

Marine Life Concentrations Surveys and/or Satellite Telemetry Observations:

- **Fishing Zone 4:** Weekly running average of 5.7 animals and single day sighting of 30 Humpback whales based on Monterey Bay Whale Watch data, which exceeds the marine life concentration trigger under RAMP (c)(2)(B)(2).
- **Fishing Zone 1, 5 and 6:** No current data are available for these Zones, which

triggers management response under RAMP (c)(2)(B)(1).

B. 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

- Given the low relative running average sightings of Humpback whales, a Fleet Advisory will be an effective Management Action due to anticipated declining fishing effort in Fishing Zone 4, and will provide additional precaution for all 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

- Monterey Bay Whale Watch (MBWW) data was available for Fishing Zone 4. Additional CDFW aerial survey data were available for Zones 2, 3 and 4, Point Blue observation data for Zones 3, 4 and 6 and Blue whale habitat predictions are available for all Fishing Zones. 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 but one of the Fishing Zones is consistent with average historical late winter patterns that show few or no Humpback whale sightings when whales are mostly at their breeding areas off Mexico and central America.
- Recent surveys at these breeding areas (Central America and Mexico) resulted in lower numbers of Humpback whales than previously observed during mid-winter surveys indicating some departures.
- Continued absence of Blue whales from Zones 1-5 is consistent with their migration to breeding areas during the winter months.

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, 351 vessels have participated in the fishery as of March 2, 2021. Week 5 had the highest number of potential traps deployed across all Fishing Zones, with an estimated total of 94,350 traps. Fishing Zone 3 had the highest total, followed by Zone 1. Based on the most recent landings data from week 10, participation and landings volume has decreased significantly. The estimated maximum number of traps is currently 45,625.

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.

Section 132.8(d)(9): Ocean conditions

- La Niña conditions persisted in January with a 60% chance of a transition from this condition to ENSO-neutral in the northern hemisphere by the spring months of April, May and June.
- 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 impact of habitat compression that would otherwise result in increased concentrations and aggregations of whales and forage nearshore.
- See [Available Data](#) from March 16, 2021.

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

- Impact score calculation under RAMP began on January 1, 2021. Current impact score is 0 for all three Actionable Species.

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

- Based on Monterey Bay Whale Watch data, Cascadia Research, Point Blue

Conservation Science observation data and CDFW aerial survey data, significant migration into the Fishing Grounds has yet to occur.

- A single Humpback whale has been observed feeding inside San Francisco Bay. Humpbacks foraging for anchovies inside the bay are typically not observed until mid-April based on the previous 5-year sighting history.
- Additionally, two Humpback whales were observed outside and to the east of San Francisco Bay in Zone 3 on March 14, 2021.
- Three Humpback whales (Point Blue) and one Blue whale (Cascadia) were observed in Zone 6 but is considered outside of the Dungeness crab fishing grounds.

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

Fishing Zones 1-6: CDFW Marine Region staff's final recommendation is to issue a state-wide Fleet Advisory based on the weekly running average of Humpback whales observed in Zone 4 and the lack of recent survey data for Zones 1, 5 and 6. Based on the CDFW aerial survey data for the adjacent Zones 2, 3 and 4, very few Actionable Species were observed, which serves as a proxy for anticipated observations in Fishing Zones 1 and 5. 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 started at this time. In addition, based on oceanographic and forage condition data, cool conditions persist and compression of available forage is not expected to occur which could increase co-occurrence of trap gear and whales as they begin to arrive to the Fishing Grounds. Currently, there are no confirmed entanglements this season of Actionable Species, ocean and forage conditions do not warrant concern, and fleet participation is low and decreasing compared to activity levels from previous years. Given the above, paired with low or nonexistent presence of Humpback whales and Blues whales respectively, 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 Zone 4 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 with Working Group representatives and advisors on March 12, 2021. There was no opposition to the recommendation by Marine Region staff and no alternative recommendation was provided by the Working Group.

CDFW will continue to monitor all available data to inform the next risk assessment (expected to occur on or around April 1, 2021).

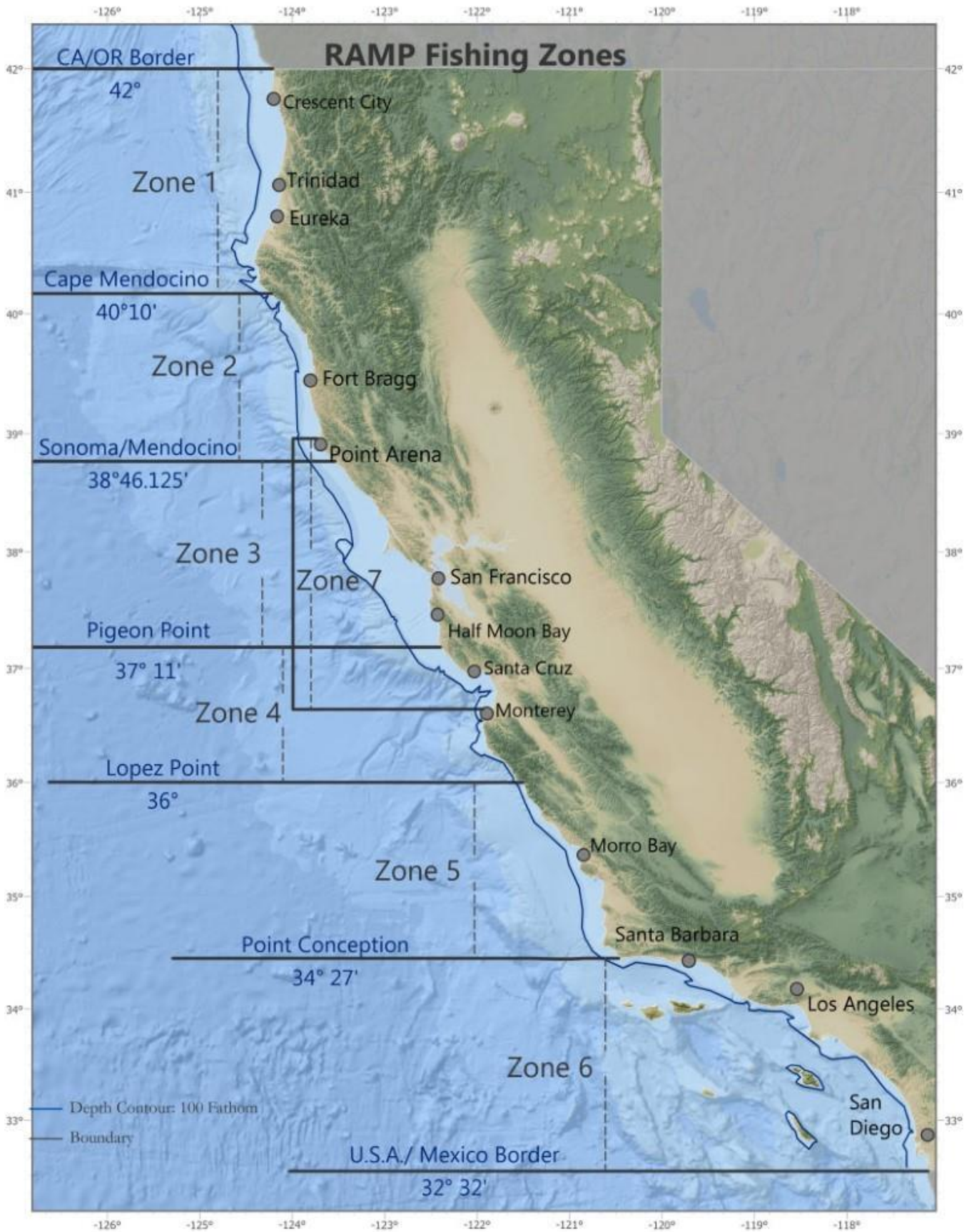


Figure 1. RAMP Fishing Zone boundaries.