



California Department of Fish and Wildlife Final Assessment of Marine Life

Entanglement Risk and Management Recommendation

Date: December 11, 2020

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 December 8, 2020 and finalized on December 11, 2020 based on discussion during the Working Group meeting on December 10, 2020.

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: **1 Humpback whale**

Confirmed Entanglements in Unknown Fishing Gear reported from California:

- During the current Fishing Season: 0
- During the current calendar year: **3 Humpback whales**

Marine Life Concentrations Surveys and/or Satellite Telemetry Observations:

- **Fishing Zone 4: a weekly running average of 6.2 Humpback whale sightings and single day sightings of 11 and 5 Blue whales** based on Monterey Bay Whale Watch data; these survey data exceed the Marine Life Concentration trigger under RAMP (c)(2), 20 Humpback whales or 3 Blue whales during a survey or a running weekly average of 5 Humpback whales or 3 Blue whales

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

- RAMP regulations 132.8(c)(2)(A)(4)(a) and (b) specify a season delay in the event of a concentration trigger being reached, or other management action that the Director demonstrates protects Humpback whales and Blue whales based on the best available science. Based on available data on migration trends and whale location showing limited overlap within the Fishing Grounds, a Fleet Advisory will protect Humpback and Blue whales.

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

- Early season Management Action(s) have variable economic costs when seasons are delayed. Current economic considerations include loss of holiday markets, fishing effort shift, poor market conditions (price), crab availability, and numerous impacts due to the ongoing COVID pandemic. Current concerns regarding economic impacts include:
 - Further delay of the opener would result in loss of holiday markets.
 - Uncertain market conditions due to COVID should be considered and balanced against the risk of entanglement and economic impacts from entanglements in both current and future seasons.
 - Anticipated low crab abundance based on sampling and reports from the recreational fleet.

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

- Aerial surveys were conducted across Fishing Zones 1, 2, and 3. Monterey Bay Whale Watch data was available for Fishing Zone 4. Additional observation data were contributed for Fishing Zones 3, 4 and 6 and Blue whale habitat predictions are available for all Fishing Zones.

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

- Seasonal migration of Humpback whales out of California waters to Mexico and Central America typically occurs in November and early December. Humpback whales appear

to be migrating from central and northern areas (where high numbers of Humpback whales were previously sighted). When Humpback whales start their migration, they tend to move offshore and head directly south, avoiding traditional Fishing Grounds along the California coast.

- Trend data from Point Blue Conservation Science indicates more Blue whales are being sighted near the Channel Islands and fewer Humpback whales are being sighted in Fishing Zone 4.
- It should be noted that Humpback and Blue whale numbers in Fishing Zone 4 (Monterey Bay) remain above average when compared to historical weekly averages based on Monterey Bay Whale Watch data. However, they are trending downward and likely will soon fall below the Marine Life Concentrations trigger.

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

- No delay anticipated due to public health hazards.
- Tri-state quality testing protocols have been met and the quality delay will lift on Dec. 16, 2020.
- There is no fair start provision in the event of a season delay due to elevated entanglement risk.

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

- Blue whales were sighted around the edge of the Monterey Canyon foraging on krill based on Point Blue observation data.

Section 132.8(d)(9): Ocean conditions

- La Niña conditions are currently forecast for winter/spring 2021. Monthly Habitat Compression Index in November 2020 indicates a medium compression state with increased cool habitat area since October.

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

- Impact score calculation under RAMP begins January 1, 2021.

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

- Based on aerial survey data, whale watch data and marine sanctuary observations, migration appears to be underway to Mexico and Central America via offshore waters.
- Migration reports from Cascadia Research and collaborators have confirmed two Humpback whales sighted during November surveys in Monterey are now on the breeding grounds off mainland Mexico. An additional eight California Humpback whales have been confirmed to be on the breeding grounds off mainland Mexico. These reports are an indicator that the migration has begun and that more animals will continue to leave California waters.

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

Fishing Zones 1-6: CDFW Marine Region staff's final recommendation is to open statewide on December 23, 2020 under a Fleet Advisory as described in RAMP subsection (e)(1) for Fishing Zones 1-6. Marine Life Concentrations are trending downward based on surveys and observations in Fishing Zones 1, 2, 3 and 4. The remaining whales observed in Zone 4 were primarily sighted at or near the edge of the deep-water canyons. These areas are unlikely to see high levels of fishing effort because they are on the edge of the Fishing Grounds. A Fleet Advisory is further supported by additional information outlined above under the Management Considerations. Foraging activity appears to be shifting offshore in Fishing Zone 4 and fewer whales were observed across Fishing Zones 1, 2, 3 and 4 when compared to previous CDFW-approved surveys. Though some animals remain, these observations are consistent with published migration trends indicating whales leave California waters during late November and early December. It is also verified by recent reports of California Humpback whales arriving on the breeding grounds off mainland Mexico. Based on the whale distribution patterns observed in Fishing Zones 1-4, the tendency of whales to move south and offshore rather than along the coast during their migration out of California, and the small number of whales previously sighted in Fishing Zones 5 and 6, CDFW Marine Region's recommendation is to also open Fishing Zones 5 and 6 under a Fleet Advisory as noted above. Additionally, there is limited commercial take of Dungeness crab in Fishing Zone 5 and only intermittent take of Dungeness crab in Fishing Zone 6.

CDFW Marine Region staff acknowledge the broad (though not unanimous) support voiced by industry and Working Group representatives for a further statewide delay of the commercial season due to potential for entanglement risk versus uncertain market conditions due to the COVID pandemic. Marine Region staff consider currently available data as indicating a low and declining risk of entanglement which would allow the season to begin on December 16, 2020. However, staff also note that a further delay until December 23, 2020 would provide additional opportunity for Humpback and Blue whales to migrate out of California Fishing Grounds and further decrease entanglement risk prior to the season opener.

In the event of a December 23, 2020 statewide season opener, CDFW Marine Region staff recommend the Director notify the fleet as early as possible to allow them to begin gear preparation and for processors/buyers to anticipate commercial landings shortly after the opening. For the northern management area, Fishing Zones 1 and 2, the pre-soak period will begin December 20th at 8:01 am and for the central management area, Fishing Zones 3, 4, 5 and 6, the pre-soak period will begin December 22nd at 6:01 am. While operating under a Fleet Advisory, the fleet should review and implement fishing best practices by minimize knots and line scope and should review the [Best Practices Guide](#) prior to setting gear.

CDFW will continue to monitor all available data to inform the next risk assessment (expected to occur on or around January 15, 2021).

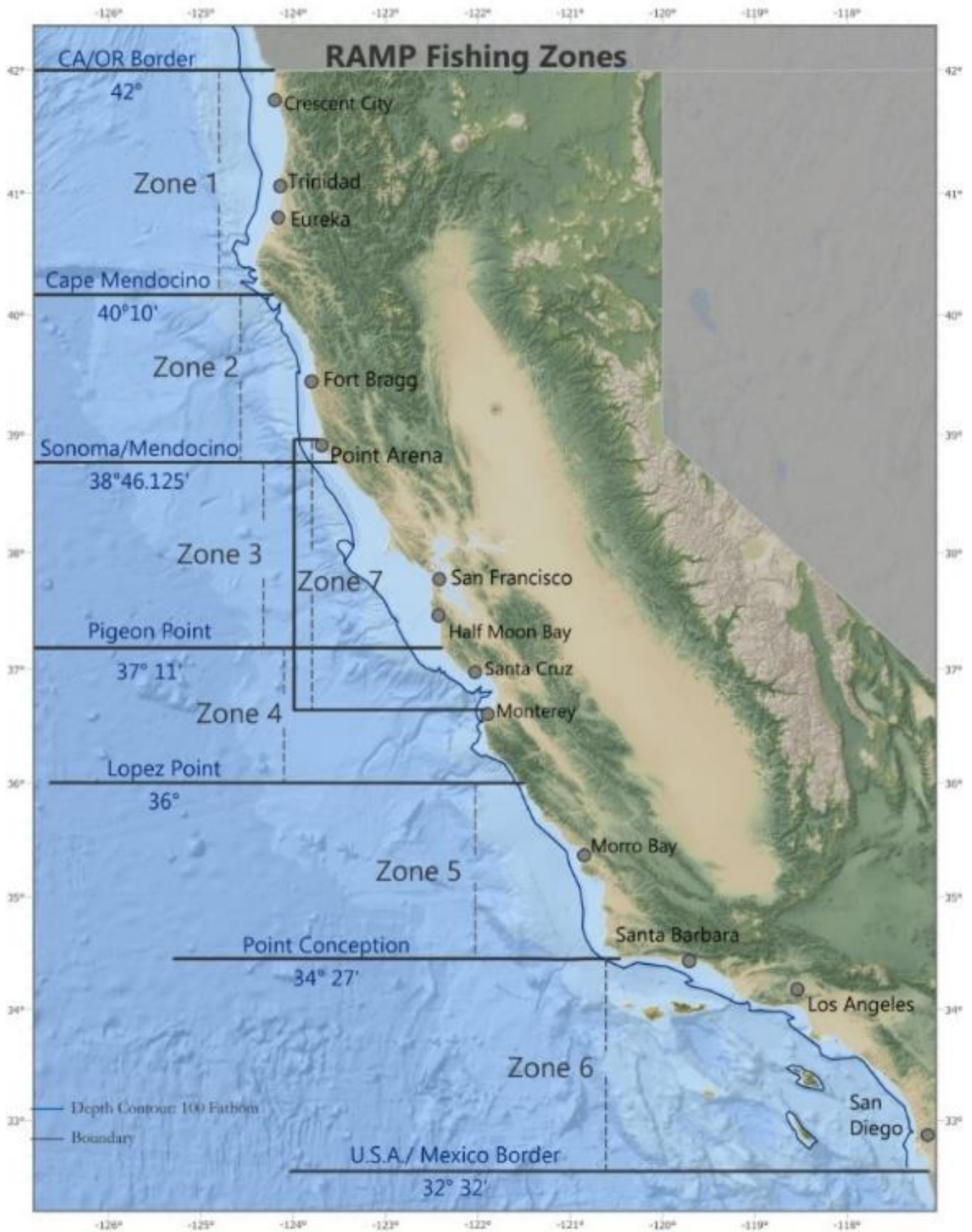


Figure 1. RAMP Fishing Zone boundaries.