



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

Date: November 3, 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 November 2, 2020 and finalized at the conclusion of the Working Group meeting on November 3, 2020 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: 1

Confirmed Entanglements in Unknown Fishing Gear reported from California:

- During the current Fishing Season: 0
- During the current calendar year: 3

Marine Life Concentrations Surveys and/or Satellite Telemetry Observations:

- **Fishing Zone 3:** 48 Humpback whales were observed during CDFW aerial surveys, 118 sightings of an estimated 345 Humpback whales observed during Cascadia Research vessel based surveys, both surveys exceed the Marine Life Concentration trigger under RAMP (c)(2), 20 Humpback whales during a survey
- **Fishing Zone 4:** weekly running average of 11.2 based on Monterey Bay Whale Watch data, which exceeds the running weekly average of 5

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) specify a season delay in the event of a concentration trigger being reached or other management action that the Director demonstrates protects Humpback whales based on the best available science. Based on available data, a season delay is likely to be the most effective management action because on the distribution of whales across Fishing Zones 3 and 4.

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. CDFW will continue to work with the fleet to inform this management consideration. Current economic considerations include loss of Thanksgiving markets, fishing effort shift and impacts due to the ongoing COVID pandemic.

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

- Aerial and vessel-based surveys were conducted across Fishing Zones 1, 2, 3, 4 and 5. Additional observation data were contributed for Fishing Zones 3, 4, and 6.

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

- Seasonal migration for Humpback whales out of California waters typically occurs in November and early December to Mexico and Central America. Humpback whales are anticipated to migrate from central and northern areas (where high numbers of Humpback whales were observed) south through Fishing Zones 5 and 6.
- Observed Humpback whale numbers in Fishing Zone 4 are above average when compared to historical averages based on Monterey Bay Whale Watch data.

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

- No delay anticipated to due public health hazards.
- Quality testing is still ongoing and only applies to Fishing Zones 1 and 2.
- Fishing season openers should be done in a coordinated effort across Fishing Zones when possible to address issues of fair start and/or effort shift.

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

- Distribution of anchovy, a key forage item for Humpback whales was evident during aerial surveys and vessel-based surveys. Humpbacks were observed lunge feeding near the surface off Half Moon Bay, Point Reyes and Eureka, which includes Fishing Zones 4, 3 and 1, respectively.

Section 132.8(d)(9): Ocean conditions

- La Nina conditions are currently forecast.

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 vessel based and aerial surveys, large numbers of Humpback whales were distributed across several Fishing Zones, an indication that migration out of Fishing Grounds has yet to occur.

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

- **Fishing Zones 3 and 4:** CDFW Marine Region staff's final recommendation is a season delay based on exceedance of Marine Life Concentration triggers for Humpback whales in Fishing Zones 3 and 4, and based on additional information outlined above under management considerations and further informed by Working Group discussions. The large aggregations of foraging Humpback whales and surface feeding activity pose a risk of entanglement with surface gear if the season is allowed to begin on November 15, 2020. A season delay is the recommended Management Action based on the wide distribution of Humpback whales across Fishing Zones depths. A depth restriction or gear reduction would not minimize entanglement risk due to whale distribution and expected high gear concentrations during the season opener. As a result, CDFW Marine staff recommend a delay of the Fishing Season for Fishing Zones 3 and 4 until the next risk assessment (expected to occur before December 1, 2020).
- **Fishing Zone 5:** CDFW Marine Region staff recommend a season delay for Fishing Zone 5 based on management considerations outlined above and following discussions with the Working Group. The potential for fishing effort shift into this Fishing Zone, coupled with observed whales from CDFW aerial surveys and Cascadia Research vessel surveys in the area could increase the risk of entanglement. As a result, CDFW Marine Region staff recommend a delay of the Fishing Season for Fishing Zone 5 until the next risk assessment (expected to occur before December 1, 2020).
- **Fishing Zone 6:** Per 132.8(c)(2)(A)(1), lack of available data in Fishing Zone 6 automatically delays the opening of the Fishing Season in that Fishing Zone until December 1.

CDFW Marine staff recommend the Director notify the fleet and processors as early as possible to allow them to delay season preparation and plan for a delay of the season. CDFW will continue to monitor all available data and work to collect Marine Life Concentration data to inform the next risk assessment (expected to occur before December 1, 2020).