

California Dungeness Crab Fishing Gear Working Group (Working Group)
Risk Assessment and Mitigation Program (RAMP) 2019-20 Management Recommendations Form
Discussion Date: October 15, 2019; Recommendation Finalized: October 18, 2019

The Working Group requests this recommendation, and information relied upon, be considered by the California Department of Fish and Wildlife (CDFW) Director prior to the November 1, 2019, risk determination. The Working Group plans to review additional updated information, if available, prior to the November 1 determination and may submit an updated Recommendation Form to the Director.

A. Identified risk(s) and severity

Based on the information available during the October 15, 2019, discussion, the Working Group's risk assessment associated with the four RAMP factors is as follows:

- **Entanglement: not applicable**
- **Marine life concentrations: risk is moderate and decreasing**
- **Ocean conditions and forage: risk is moderate/low and decreasing**
- **Fishing dynamics: risk is low**

Rationale supporting this risk assessment is provided in Section B. The Working Group's discussion primarily focused on risk assessment for Humpback whales and included risk assessment for Blue whales and Leatherback sea turtles based on the best available information.

B. Available information

The Working Group's discussion was informed by the pre-season data compilation ([Data Compilation](#)¹) provided by CDFW, in partnership with Working Group advisors and partner agencies, on October 14, 2019. Working Group advisors provided additional input during the meeting. Rationale and key information which informed the above risk assessment are summarized below for each factor.

Entanglement - Rationale

- The season has not yet opened; therefore, this risk factor is not applicable.

Marine Life Concentrations - Rationale

- Humpback whales have been observed between the Gulf of the Farallones and Monterey Bay, and foraging on fish in both nearshore and offshore waters. Presence is decreasing in Monterey Bay, and was the highest it had been in the last couple of months in the Gulf of the Farallones.
- Humpback whale concentrations are typical for this time of year; their distributions normally shift prior to commencing their southbound migration in mid-November.
- Blue whales have been observed in very low numbers during spring and early fall surveys.
- Six Leatherback sea turtles were tagged during fall surveys; 4 have since left the California coast (possibly in response to capture/handling). Departure of the two remaining Leatherbacks will indicate when the foraging season begins to wind down, likely within the next 2-4 weeks.
- Please see pages 2-3 of the [Data Compilation](#) for additional available information.

Ocean Conditions and Forage - Rationale

- A large marine heatwave has emerged and is developing off the U.S. West Coast. This large marine heatwave is causing compression of upwelling habitat and restriction of cold water closer to the coast, which will likely persist over the next month. Monitoring the heatwave (area, extent) over the next few months is recommended.

¹http://www.opc.ca.gov/webmaster/_media_library/2019/10/RAMP-Data_Pre-Season_2019-20_10142019.pdf

- In 2019, spring/summer ecosystem surveys indicated krill abundance was at the lowest level seen since 1998 and lower compared to the 2014-2016 heatwave. Aerial surveys conducted in early October 2019 documented surface swarms of krill which may indicate spawning.
- Anchovy abundance is at unprecedentedly high levels, over 2.5 orders of magnitude higher than previous years (see Figures 3a and 3b in the [Data Compilation](#)). Because young-of-the-year anchovy abundance is also increasing, the anchovy population will likely continue to expand and anchovies are expected to be both nearshore and offshore. This provides broadly dispersed anchovy foraging opportunities for Humpback whales (rather than concentrating Humpback whale feeding on anchovy bait balls nearshore).
- Generally, better anchovy feeding conditions are likely to result in Humpback whales meeting their nutritional needs and then beginning their southward migration.
- Brown sea nettle biomass has been very high and broadly distributed, although vessel surveys documented a few individuals displaying signs of seasonal senescence. Foraging is expected to continue off central California for a few more weeks.

Fishing dynamics - Rationale

- Risk was considered in terms of potential delay in season openers due to domoic acid.
- Widespread delays are not currently expected due to domoic acid levels; thus far, only one area (Bodega Bay) had samples which exceeded the domoic acid action level (see page 3 of the [Data Compilation](#)). Additional results from other areas, and re-testing for Bodega Bay, are anticipated within the next week.
- Results from quality testing in Northern Management Area ports will not be available until after the November 1 risk determination date.

C. Management recommendation(s)

The Working Group reviews and considers the [RAMP Guiding Principles](#) in the development of any management recommendation(s).

Based on the above risk assessment, the Working Group does not recommend the Director impose any mandatory management measures on the fleet at this time. The Working Group recommends that the Central and Northern Management Area open as scheduled (November 15 and December 1, respectively), presuming that delays are not warranted due to human health risks or low quality.

The Working Group recommends voluntary actions, including implementation of the Best Fishing Practices Guide, which includes best practices for surface-gear set-up, as well as slackline reduction, and using neutral buoyancy line. The Best Practices Guide is available on the Working Group's [website](#).

The Working Group requests that CDFW, in coordination with the RAMP factor leads, continue to collect and review available information regarding entanglement risk, particularly with respect to marine life concentrations. If additional information from aerial surveys or other data streams suggest that the southbound migration of Humpback and Blue whales does not occur as expected in mid-November, the Working Group may submit a supplemental recommendation to the CDFW Director.

D. Alternatives

The Working Group arrived at the above recommendations by consensus. No minority recommendations were expressed.