California Dungeness Crab Fishing Gear Working Group (Working Group) Risk Assessment and Mitigation Program (RAMP) 2019-20 Management Recommendations Form

Discussion Date: June 9, 2020; Recommendation Finalized: June 12, 2020

The Working Group requests this recommendation and supporting information be considered by the California Department of Fish and Wildlife (CDFW) Director prior to any upcoming risk determination.

A. Identified risk(s) and severity

Based on the information available during the June 9, 2020 discussion, the Working Group's risk assessment associated with the four RAMP factors is as follows:

- **Ocean and Forage Conditions**
    - Risk is low in the Northern Management Area (NMA)
    - Risk is low in the Central Management Area (CMA; majority); risk is moderate in the CMA (minority)
- **Entanglement**
    - Risk is low in the NMA
    - Risk is low in the CMA (majority); risk is moderate in CMA fishing districts 10 and 17[1] and low in fishing districts 18 and 19 (minority)
- **Marine Life Concentrations**
    - Risk is low in the NMA for humpback whales, blue whales, and leatherback sea turtles
    - The Working Group was unable to make a determination of risk based on marine life concentrations for the CMA

[1] https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=147314&inline

- **Fishing Dynamics: Risk is low for both the NMA and CMA**

Rationale supporting this risk assessment is provided in Section B. The Working Group also provided an overall assessment of risk across all four RAMP factors as low for humpback whales, blue whales and leatherback sea turtles in both the NMA and CMA. Rationale for the overall risk assessment, and recommended management measures, is provided in Section C. Rationale for the minority risk assessment is provided in Section D.

B. Available information

The Working Group's discussion was informed by the Data Compilation[2] provided by CDFW, in partnership with Working Group advisors, on June 8, as well as additional real-time contributions during the June 9 discussion. Rationale and key information which informed the assessment are summarized below for each factor.

Ocean and Forage Conditions

- Habitat compression values indicate a moderate compression of available cool water habitat off California (below the long-term mean), particularly in central and southern California. Large amounts of warm water are present off the coast and moving inshore in certain areas, including Monterey Bay.

- Spring and summer midwater trawl surveys by the Southwest Fisheries Science Center, which were delayed due to COVID-19, initiated operations on June 8. Qualitative reports from the first night of data collection indicate high abundances of pyrosomes and anchovies in Monterey Bay.

- On-the-water reports indicate warmer-than-normal conditions in central California, and a recent transition from pyrosome to krill-dominated conditions north of Point Reyes.

- Given the persistence of cooler conditions and krill observations in nearshore areas of the NMA, the Working Group assessed risk as low.

[2] https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=180419&inline

- Given on-the-water reports and habitat compression maps indicating areas of warm water and concentrated forage are patchily distributed across the CMA, a majority of Working Group members assessed risk for the CMA as a whole as low.

Entanglement (Humpback Whales, Blue Whales, Leatherback Sea Turtles)

- No additional entanglements in California commercial Dungeness crab gear have occurred since the last risk assessment.

- The single confirmed humpback whale entanglement in California commercial Dungeness crab gear (reported on May 16, as discussed during the May 25 risk assessment[3]) involved gear from the CMA. There have been no confirmed entanglements in the NMA during the 2019-20 season, so risk is low in the NMA.

- The Working Group's Risk Assessment Framework (RAF) identifies elevated risk when 5 or more humpback whale entanglements with confirmed or suspected California commercial Dungeness crab gear have occurred during the current fishing season (including pre-season). Given that the cumulative number of humpback whale entanglements in California commercial Dungeness crab gear during the 2019-20 season is one (which is below the RAF threshold), and the individual was successfully disentangled, a majority of the Working Group assessed risk for this factor as low for the CMA.

Marine Life Concentrations (Humpback Whales, Blue Whales, Leatherback Sea Turtles)

- Counts of humpback whales during Monterey Bay Whale Watch research trips in Monterey Bay (Figure 11) have decreased since early May and are now at the lower end of the historical range.

- In the absence of systematic vessel or aerial surveys, it is challenging to assess how many whales are present in specific areas. Based on seasonal migration patterns, the entire population of humpback whales which forage off California and Oregon is now expected to be present within key foraging grounds (see Figure 3 from the Data Compilation for the April 9 risk assessment[4]). Given the ocean and forage conditions

[3] https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=179237&inline
[4] https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=178216&inline

discussed above, and low counts of humpback whales within Monterey Bay, Working Group advisors anticipate humpback whales are utilizing other known foraging grounds, particularly waters from 40-100 fathoms between Año Nuevo and Point Reyes/Bodega Bay, which would be consistent with observations during the May CDFW aerial surveys. Humpback whales may also aggregate wherever sufficiently dense patches of anchovies are present, regardless of depth.

- No blue whales have been observed in Monterey Bay or the Gulf of the Farallones during the last 7 days.

- On-the-water reports from areas where fishing is occurring (i.e. NMA) indicate an absence of both blue and humpback whales. In the absence of other information (e.g. aerial surveys), the Working Group assessed risk to blue and humpback whales in the NMA as low.

- Satellite tagging information indicates leatherback sea turtles are not yet approaching the NMA; therefore, risk to leatherback sea turtles in the NMA is low.

- The Working Group was unable to make a risk determination for marine life concentrations in the CMA.

Fishing Dynamics

- Estimates for vessels and actively fished traps in NMA ports (see Table 2) are expected to remain constant until the end of the fishing season since those fishermen who were going to transition from Dungeness crab to the salmon or albacore fisheries have already done so.

- Risk is low in the CMA because there is no fishing activity due to the May 15 closure, and risk is low in the NMA due to less than 15% of the fleet left fishing.

C. Management recommendation(s)

The Working Group's overall assessment of risk across all four RAMP factors was low for both management areas. In the CMA, the 2019-20 commercial season is closed and will not reopen, mitigating risk from the other three factors; therefore, overall risk was deemed low in the CMA. In the NMA, the Working Group assessed risk as low for each factor,

prompting an overall assessment of low risk because of minimal remaining fishing activity. Given the overall assessment of risk as low for both management areas, the Working Group does not recommend any mandatory management measures at this time.

The Working Group recommends the fleet use best practices, as outlined in their current Best Practices Guide[5], for the remainder of the season in the NMA. This includes avoiding areas with bait balls, krill swarms, or other signs of potential co-occurrence. Fishery participants should pull gear promptly once done fishing for the season, and the Working Group strongly recommends fishery participants conduct in-season retrieval of lost or abandoned gear as allowed under Section 132.2, Title 14, CCR.

In the CMA, the Working Group encourages industry participation in the CDFW Trap Gear Retrieval Program to reduce entanglement risk from lost or abandoned commercial Dungeness crab fishing gear. The Working Group requests commercial and recreational ocean users report locations of lost or abandoned commercial Dungeness crab gear to CDFW to further facilitate retrieval.

The Working Group noted that recreational Dungeness crab fishing effort typically declines in the spring, reducing risk of marine life entanglement as gear is removed. In contrast to their discussion on May 26, Working Group members reported that harbor launch ramps are reopening in many areas, which will allow recreational fishermen to tend and remove their gear.

D. Alternatives

A minority, four members, of the Working Group assessed risk for the ocean/forage factor in the CMA as moderate rather than low. The minority highlighted the changes in ocean and forage conditions since the May 26 assessment, including increased habitat compression in specific areas within the CMA, warm water in some nearshore areas, dynamic areas with high anchovy abundance, and abundant pyrosomes in Monterey Bay. While these conditions are concentrated in patches rather than uniformly distributed across the CMA, the minority assessed risk for the entire CMA as moderate for the ocean/forage factor.

[5] http://www.opc.ca.gov/webmaster/_media_library/2019/11/2019-20_BPG_Final.pdf

A minority, five members, assessed the entanglement risk factor as moderate in CMA fishing districts 10 and 17 and low in CMA fishing districts 18 and 19. This is consistent with the Working Group's consensus assessment on May 26, 2020, which resulted from a confirmed humpback whale entanglement on May 16 in California commercial Dungeness crab gear. The minority asserted that entanglements should be considered cumulatively across the season and that a successful disentanglement does not detract from the fact that an entanglement occurred in the first place. Risk should not decrease as a result of no additional entanglements being reported since the last assessment. Therefore, the minority determined risk for the entanglement factor in the CMA remains moderate.