



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

Date: March 25, 2022

An initial assessment and preliminary recommendation were 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 22, 2022, and finalized at the conclusion of the Working Group meeting on March 23, 2022, based on discussions with the group.

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

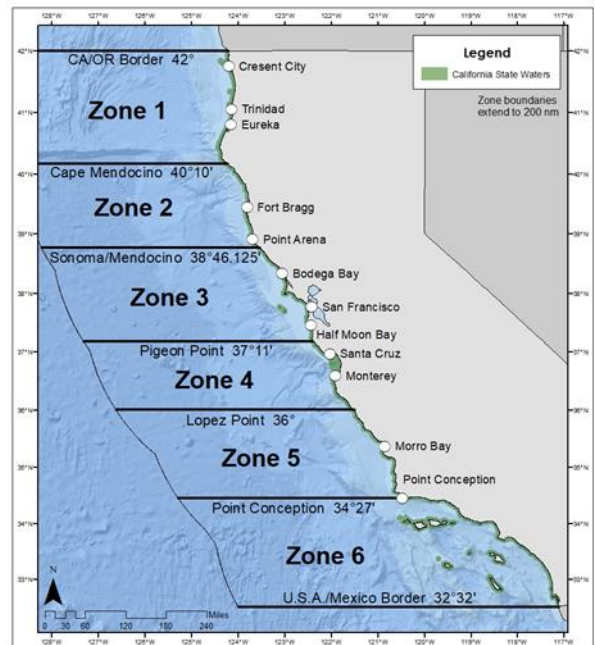
Commercial Fishery:

- **Fishery Closure: Fishing Zones 3, 4, 5 and 6 – effective April 8, 2022 12:00pm**
- **Fleet Advisory (continuation): Fishing Zones 1 and 2**

Recreational Fishery:

- **No Management Action**

CDFW Marine Region staff's final recommendation is to implement a Fishery Closure for Fishing Zones 3 and 4 triggered by two confirmed humpback entanglements in California commercial Dungeness crab fishing gear and lack of available survey data for Fishing Zones 5 and 6. To reduce risk of entanglement, staff's recommendation is to implement a Fishery Closure for Fishing Zones 3, 4, 5, and 6 beginning April 8, 2022 at 12:00pm (noon). In addition to the Fishery Closure, staff recommend the Director authorize the Lost or Abandoned Commercial Dungeness Crab Trap Gear Retrieval Program to begin on April 15, 2022 at 12:00pm (noon) for Fishing Zones 3, 4, 5 and 6. Authorization of this program will further reduce entanglement risk by removing lost or abandoned gear. Staff's final recommendation is to continue the Fleet Advisory for Fishing Zones 1 and 2 due to low abundance of Actionable Species in those Zones. The Fleet should, however, be prepared for a Fishery Closure within those Zones should another entanglement occur or if Marine Life Concentrations exceed management triggers.



Rationale: One humpback entanglement in Fishing Zone 3 was first reported on March 11, 2022, and confirmed in California commercial Dungeness crab gear on March 17, 2022, and a second entanglement confirmed in California commercial Dungeness crab gear was reported in Fishing Zone 4 on March 19, 2022. In addition, a management action is triggered by lack of recent RAMP approved survey data for Fishing Zones 5 and 6. A third humpback whale entanglement reported on March 21, 2022, is currently being reviewed by NMFS, but is currently considered an unconfirmed report, and therefore does not trigger action under RAMP. Due to RAMP entanglement triggers being reached and in anticipation of increasing risk due to migrating humpback and blue whales, a closure will help minimize additional entanglement risk in Fishing Zones 3, 4, 5 and 6.

By recommending a closure date of 12:00pm on April 8, 2022, CDFW is providing additional notice to the fleet (72 hours is the minimum required under the RAMP regulations). The two-week period between the Director's anticipated determination and the closure date is intended to accommodate spring weather conditions which may constrain the ability of some vessels to remove trap gear. While the Working Group declined to provide a formal management action recommendation for the Director's consideration, during their March 23, 2022 meeting, some members supported and one member opposed CDFW's Initial Recommendation. Working Group members expressed differing opinions regarding the appropriate amount of time between the Director's determination and the closure date, with some members wanting the closure to include a provision for weather delays and some wanting an earlier closure to minimize risk as quickly as feasible.

It is anticipated that fishing effort will continue to decline into the spring months, however arrivals of humpback and blue whales will increase, and the Fleet should be prepared to modify fishing operations to minimize risk of entanglement in Fishing Zones 1 and 2. CDFW anticipates that humpback whale migrations to California waters will increase over the coming weeks and reminds fisherman to use [best fishing practices](#) to minimize risk of entanglement as whales begin to arrive in Zones that remain open to fishing. The recreational crab fishery is not subject to a restriction at this time because Marine Life Concentration triggers have not been reached. The recreational fleet should however implement best practices and remove all gear promptly once they no longer intend to fish for crab to further minimize risk of entanglement. If Marine Life Concentration triggers are reached during a future risk assessment, the Director may implement a trap restriction for the recreational fishery either by Zone or statewide.

CDFW will continue to monitor all available data to inform the next risk assessment (expected to occur on or around April 15, 2022).

B. Marine life entanglement risk, relative to the triggers in subsection (c)

Confirmed Entanglements in California Commercial Dungeness Crab Gear

- During the current Fishing Season: 2 humpback whales
- During the current calendar year: 2 humpback whales
- During the 2021 calendar year: 1 humpback whale

Confirmed Entanglements in Unknown Fishing Gear reported from California:

- During the current Fishing Season: 1 humpback whale

- During the current calendar year: 1 humpback whale
- During the 2021 calendar year: 3 humpback whales

Marine Life Concentrations Surveys and/or Satellite Telemetry Observations:

- **Fishing Zone 1, 2, 3 and 4:** No Management Action triggers reached
- **Fishing Zone 5 and 6:** No current data are available for these Zones, which triggers management response under RAMP (c)(2)(B)(1).

C. 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

- **Fleet Advisory:** given the confirmed gear types (CA commercial Dungeness crab) involved in the entanglements, a Fleet Advisory will not sufficiently protect the Actionable Species within the Fishing Grounds.
- **Fishing Depth Constraint:** given the low abundance of humpback whales in the Fishing Grounds, it is not possible to identify an appropriate depth-based closure which would reduce co-occurrence between humpback whales and commercial Dungeness crab fishing gear. Therefore, implementing a depth constraint would not be an effective management measure.
- **Fishery Closures or Vertical Line Reductions:** given the recent entanglements in CA commercial Dungeness crab fishing gear, a Fishery closure is likely to provide the most protection for Actionable Species within the Fishing Grounds.
- **Alternative Gear:** No gear is currently authorized for use and one request is currently under evaluation.

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

- A fishery closure will have economic costs to the commercial fishery but given the elevated entanglement risk, a closure is warranted to prevent longer term loss of fishing opportunity.

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

- CDFW aerial survey data are available for Fishing Zones 1, 2, 3 and 4. MBWW data are available for Fishing Zone 4.

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

- Aerial surveys and MBWW indicate relatively few humpback whales, which

aligns with known historic migration patterns.

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

- Weekly total landing volume has continued to decrease since late December. In recent weeks, landed volume has primarily been harvested from Fishing Zones 1 and 3. Overall, 66% of the total volume harvested this season has been from Fishing Zone 1, 31% from Fishing Zone 3, and less than 5% each from the other Fishing Zones. To date, 42% of harvested volume has been landed into Crescent City, 20% into Eureka, 11% each into San Francisco and Half Moon Bay, and less than 10% each from the other port complexes.
- Looking at landings by Zone, 69 active permits made landings in Zone 1, 19 active permits in Zone 2, 88 active permits in Zone 3, 15 active permits in Zone 4. Zones 5 and 6 had active permits fewer than 3.
- Overall, the number of weekly Dungeness crab landings reflects the port-specific trends in vessel activity, including the recent uptick in Crescent City vessel activity.
- Unit price (price per pound) has continued to trend upwards for Crescent City, Eureka, Bodega Bay, San Francisco, Half Moon Bay, and Monterey Bay. While the overall trends in Trinidad and Eureka reflect increased prices relative to those at the start of the season, prices have remained stable for these ports during the last few weeks. The most recent landings have fetched prices under \$10/lb. for all ports other than Half Moon Bay.
- Approximately 34,188 traps are estimated to be deployed statewide for the March 16 reporting period, which covers fishery participation from March 1-15, 2022. The majority of these (47%) are located within Fishing Zone 3 while 39% of these located within Fishing Zone 1.

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

- See [Available Data document dated March 9, 2022](#)

Section 132.8(d)(9): Ocean conditions

- See [Available Data document dated March 9, 2022](#)

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

- Impact score calculation under RAMP began on January 1, 2021. The 2021 calendar year impact score is 1.89 for humpback whales and 0 for blue whales and leatherback sea turtles. The current impact scores for 2022 are 1.88 for humpback whales and 0 for blue whales and leatherback sea turtles.

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

- Based on aerial survey data and MBWW data, most humpback whales appear to be outside the Fishing Grounds. Based on the time of year, migration is likely underway, and arrivals can be anticipated over the coming weeks.