

Draft Risk Assessment and Mitigation Program (RAMP): Voluntary Pilot, 2017-18 CA Dungeness Crab Fishing Season California Dungeness Crab Fishing Gear Working Group

Since September 2015, the California Dungeness Crab Fishing Gear Working Group (Working Group) has been taking steps to actively identify and be responsive to elevated risks of whale entanglements in California Dungeness crab fishing gear. This unique coalition of diverse stakeholders—which includes commercial and recreational fishermen, environmental organization representatives, members of the whale entanglement response network and state and federal agencies—is committed to developing solutions that support thriving whale populations along the West Coast and a thriving and profitable Dungeness crab fishery. *For a Fact Sheet about the Working Group and other background information, visit <http://www.opc.ca.gov/whale-entanglement-working-group/>.*

Working Towards Solutions: A Collaborative Approach to Reducing Whale Entanglement Risk

For the past two years, the Working Group has been working to better understand the issue of entanglements and to identify methods to mitigate entanglement risk. In May 2017, the group identified the need for a process that could help identify circumstances that can elevate risk and develop pathways to addressing these situations. The Working Group has considered an approach that is rooted in best fishing practices and is flexible to be responsive to elevated entanglement risk. Involving a range of experts — agencies, fishermen, researchers, and others—who will work collaboratively to evaluate risk, identify information needs, and assess the need for voluntary and/or (longer-term) mandatory management options that could be recommended to California Department of Fish and Wildlife (CDFW) is key to the program's success.

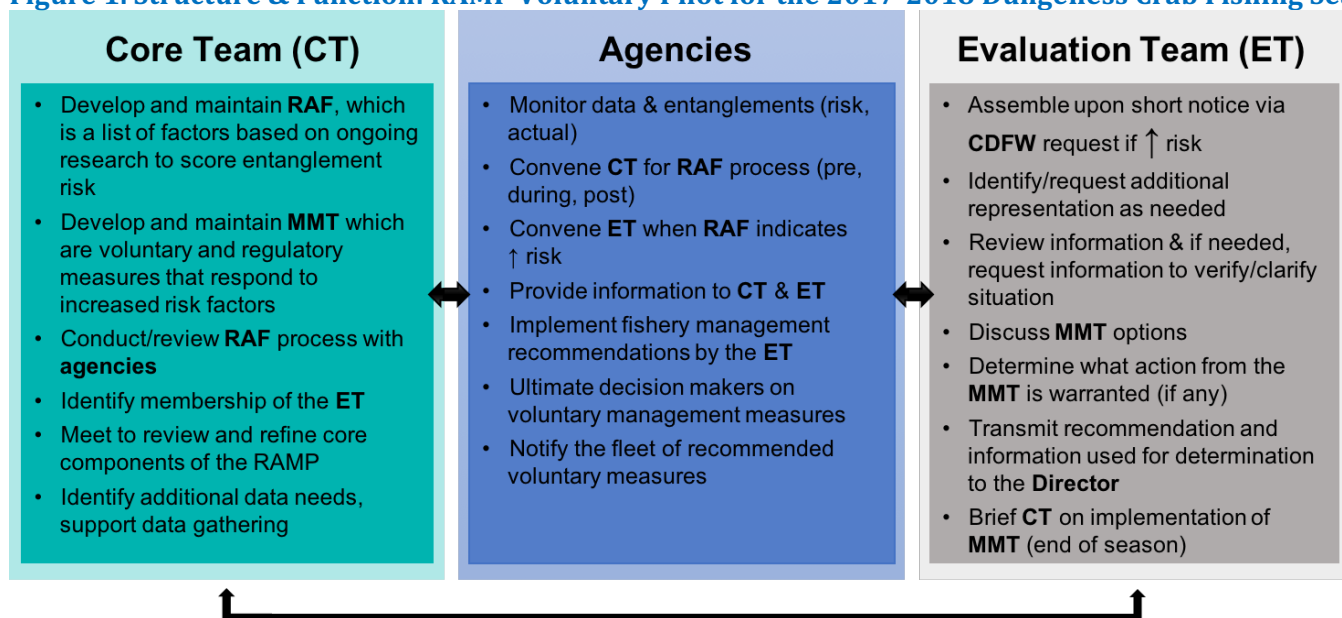
The Whale Entanglement Risk Assessment and Mitigation Program, or RAMP

The Working Group has developed a draft Risk Assessment and Mitigation Program (RAMP) to support the state in working collaboratively with experts (fishermen, researchers, NGOs, etc.) to identify and assess elevated levels of entanglement risk and determine the need for management options to reduce risk of entanglement.

Roles & Responsibilities

The draft RAMP involves three groups: a core team (CT), evaluation team (ET), and agencies. The core team and the agencies will meet three times per year to track relative entanglement risk (preseason (October), mid-season (Feb/Mar), and late season (May/June)). The evaluation team will only be convened under elevated risk conditions. During the 2017-18 RAMP pilot, the Working Group will serve as both the core and evaluation teams. CDFW, the National Marine Fisheries Service (NMFS), and the Ocean Protection Council (OPC) will coordinate as the group of state and federal agencies in the pilot RAMP. Figure 1 outlines the key roles and responsibilities of each group, and illustrates the high degree of coordination that will occur between all of the groups.

Figure 1. Structure & Function: RAMP Voluntary Pilot for the 2017-2018 Dungeness Crab Fishing Season

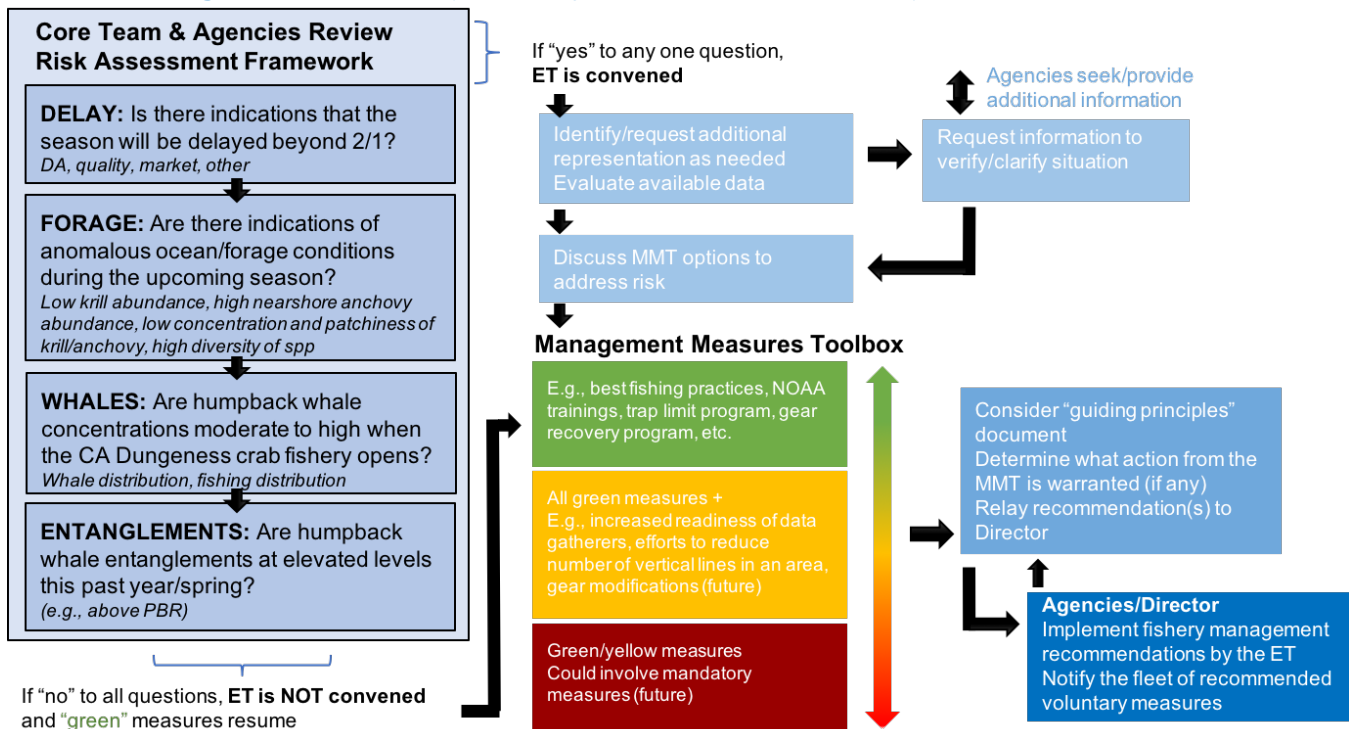


CT: Core Team; ET: Evaluation Team; RAF: Risk Assessment Framework; MMT: Management Measures Toolbox

Risk Assessment & Management Tools

Two tools will be involved in evaluating and responding to elevated risk: a risk assessment framework (RAF) and a management measures toolbox (MMT) (see Figure 2). The RAF will not act as a decision-making tool, but rather be used by the core team and agencies to indicate if an evaluation team needs to be convened due to elevated risk. The MMT will be developed by the core team and agencies for the evaluation team's use. Figure 2 illustrates the factors and questions the RAF will focus on during the RAMP pilot, together with the steps the evaluation team will take if convened. Included are examples of different management options that could be included in the MMT.

Figure 2. Risk Assessment Framework Factors and Questions, and Evaluation Team Process to Consider Possible Management Measures (voluntary for 2017-18 RAMP Pilot)



A number of guiding principles have been developed to support the evaluation team in their application of the MMT, such as all management measures will be fact-based and science driven, negative economic impacts to fishermen will be minimized and disproportionate impacts on a subset of the fleet avoided, and recommendations will identify a clear process for evaluating compliance and when/how fishermen are able to re-establish regular fishing practices. *A full summary of guiding principles are available on page 3 of this document.*

2017-18 Pilot: Seeking Fleet Input

The draft RAMP is in its beginning stages of development. The voluntary pilot will provide an opportunity to test out the draft RAMP's structure and function, explore aspects of the RAMP that could benefit from legislative support, and to learn what may need to be adjusted and fine-tuned, including the program's working assumptions and guiding principles.

During the RAMP pilot, commercial and recreational fishermen and others involved in the California Dungeness crab fishing industry are invited to review the draft RAMP approach and provide feedback on all aspects of the program. Ideas on how to improve the Working Group's approach to assessing risk, considerations for possible management measures, and suggestions related to new technologies are welcomed and encouraged. Additionally, the Working Group is planning to hold a select number of meetings in 2018 at port locations in an effort to share information and address questions.

Information learned during the 2017-18 pilot phase will be shared with CDFW, NMFS, OPC, Fish and Game Commission, Joint Committee on Fisheries and Aquaculture, and California Dungeness Crab Task Force in summer/fall 2018.

RAMP Guiding Principles To Inform an Evaluation Team's Consideration of Management Options California Dungeness Crab Fishing Gear Working Group

The Working Group supports thriving whale populations along the West Coast, and a thriving and profitable Dungeness crab fishery. Our charge is to:

- Provide guidance and recommendations to the California Dungeness crab fishing industry, including the DCTF, to avoid/minimize entanglements and identify measures or experiments that can be developed or implemented by the fishing community to address the entanglement issue;
- Collaboratively inform and guide the state of California (CDFW, OPC, Fish and Game Commission, and the Legislature) in addressing key information gaps and/or measures to reduce the risks of entanglements in Dungeness crab fishing gear; and
- Guide whale entanglement reduction efforts by establishing priorities for the Working Group, and help inform other entities seeking to address the issue of whale entanglements in California.

The following draft principles/characteristics have been developed to help guide the Working Group (which will act as the Evaluation Team during the 2017-18 RAMP pilot) under circumstances where the risk assessment framework (RAF) indicates an elevated risk for entanglements. These guiding principles will be used when the Working Group reviews the management measures toolbox (MMT) and considers possible management measures. These guiding principles will be evaluated during the 2017-18 RAMP pilot, and may be further updated based on lessons learned by the Working Group and input from the fleet and others.

Management Options/Measures

- The Working Group is working to identify and recommend management measures that can effectively reduce whale entanglements in CA Dungeness crab fishing gear.
- Management measures will be fact-based and science driven and will be updated as new information becomes available.
- Management measures will be scalable and any application should be narrowly focused in geographic area and time frame. Management measures will be consistently applied and will be enforceable.
- Management measures will be adaptable and additional management measures may be included as identified by the Evaluation Team and reviewed and confirmed by the Core Team.
- Management measures will aim to maintain fishermen's safety, minimize negative economic impacts, and avoid disproportionate impacts on a subset of the fleet. Where possible, mitigation options will be considered, including identifying alternative harvesting opportunities for impacted fishermen.
- Management measures will be evaluated and measured across a number of stages, including effectiveness of communication out to the fleet; level of understanding of the communication; and level of response to management measure.
- Once a management measure has been identified, a clear process for evaluating its implementation and identifying when/how fishermen are able to re-establish regular fishing practices in as short a timeframe as possible will be developed.
- Annual evaluation of the management options list will be conducted so the suite of options can be refined based on experiences and lessons learned. As appropriate, lessons learned will be shared with other CA fixed-gear fisheries for review and consideration.

For more information about the Working Group's efforts and the 2017-18 RAMP pilot, including opportunities to provide feedback and share your expertise, visit <http://www.opc.ca.gov/whale-entanglement-working-group/> or contact the Working Group at info@cawhalegroup.com.

**Draft Risk Assessment Framework (RAF) Assumptions
Voluntary Pilot, 2017-18 CA Dungeness Crab Fishing Season
California Dungeness Crab Fishing Gear Working Group**

The 2017-18 RAMP pilot will be conducted under the following working assumptions:

CA Dungeness Crab Fishery: the pilot will include both commercial and recreational fishing.

State-managed Fisheries: the pilot will focus on state-managed fisheries only. There is expressed interest to work with the PFMC in the near future.

Voluntary: the RAMP will be a voluntary program during the 2017-18 season. It is anticipated core components of the program will become mandatory in future seasons.

Management Action: the RAMP Framework is designed to indicate a need for more focused attention on the issue of whale entanglements in a fishery/area by an interdisciplinary team. No management measures are prescribed by the framework.

Spatial Scale: data will be considered at the statewide level at the start of the fishing season, with certain factors focusing on regional (north/south) and/or port level information as the fishing season progresses.

Seasonal: the RAMP Framework will consider factors across a seasonal calendar/scale.

Marine Mammals: the pilot will focus on humpback whales. The intention is for information gathered during the pilot to be applicable to other whales (e.g., blues) and other endangered marine animals (e.g., leatherback turtles). There has been some expressed interest to expand beyond humpbacks following the pilot phase (blues, greys, turtles, etc.), with a request to have experts on those species available to help inform the Working Group's efforts. In July, the Working Group requested CDFW and NMFS to discuss how both agencies intend to consider turtles in the short and longer term.

Historical "norm": the RAMP Framework scoring baseline is based on historical "norms", with the intention to highlight/focus attention (i.e., raise the flag) under anomalous conditions.

Entanglements:

- The Working Group has identified the following as priorities for tracking entanglements:
 - Any entanglements in CA Dungeness crab fishing gear
 - Any entanglements observed/occurring in CA waters, regardless of fishing gear type
- Entanglements are measures of actual risk, rather than expected risk
- Entanglements will be considered in terms of patterns (e.g., multiple entanglements over a defined period of time)
- Scoring is based on verified entanglements
- Certain entanglement circumstances can mobilize team discussions without other factors in play