

2018-19 Risk Assessment and Mitigation Program (RAMP) Overview California Dungeness Crab Fishing Gear Working Group

The California Dungeness Crab Fishing Gear Working Group (Working Group) is actively working to identify and be responsive to elevated risks of whale entanglements in California Dungeness crab fishing gear. This unique coalition of diverse stakeholders—including 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 West Coast whale populations and a thriving and profitable Dungeness crab fishery. *Information about the Working Group is available at <http://www.opc.ca.gov/whale-entanglement-working-group/>.*

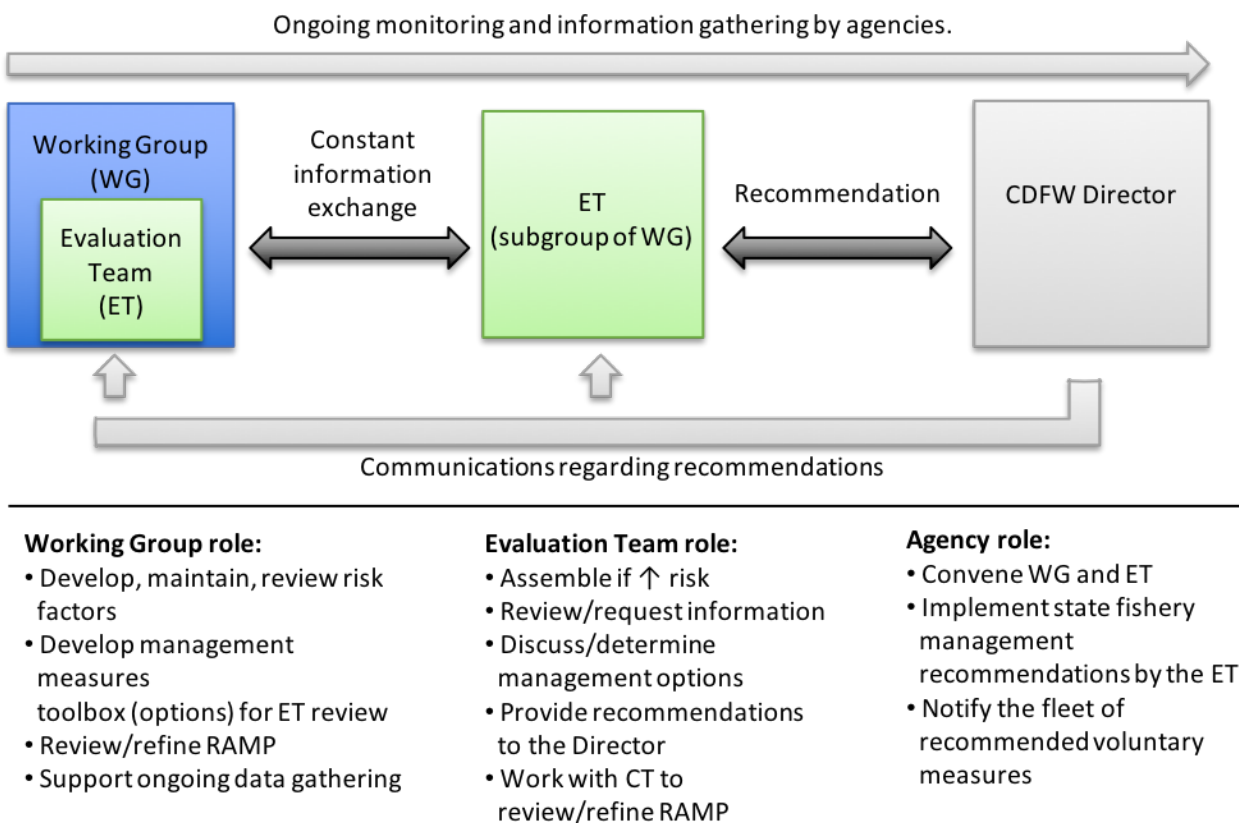
2018-19 RAMP: A Collaborative Approach to Reducing Whale Entanglement Risk

In May 2017, the Working Group began to develop a process to consider circumstances that can elevate risk— forage/ocean conditions, whale concentrations, fishing dynamics, and the rate of entanglements—and develop pathways to address these situations. The **Risk Assessment and Mitigation Program (RAMP)** is rooted in best fishing practices, responsive to elevated entanglement risk, and involves a range of experts—agencies, fishermen, environmental organizations, researchers, and others—to identify and assess elevated levels of entanglement risk and determine the need for management options to mitigate risk. The RAMP was first piloted during the 2017-18 fishing season and has been refined and further developed for the 2018-19 season. *For additional information about the 2017-18 RAMP pilot, visit <http://www.opc.ca.gov/risk-assessment-and-mitigation-program-ramp/>.*

Roles & Responsibilities

The RAMP involves three groups: the Working Group, evaluation team, and agencies. The Working Group and the agencies will meet four times per year to track relative entanglement risk (preseason (October/November), mid-season (Feb), late season (April/May), and postseason (July)). An evaluation team will only be convened under elevated risk conditions. The agencies coordinating the RAMP are the California Department of Fish and Wildlife (CDFW), in partnership with the National Marine Fisheries Service (NMFS), the Ocean Protection Council (OPC), and the United States Coast Guard. Figure 1 outlines the key roles and responsibilities of each group and illustrates the high degree of coordination that occurs between all of the groups.

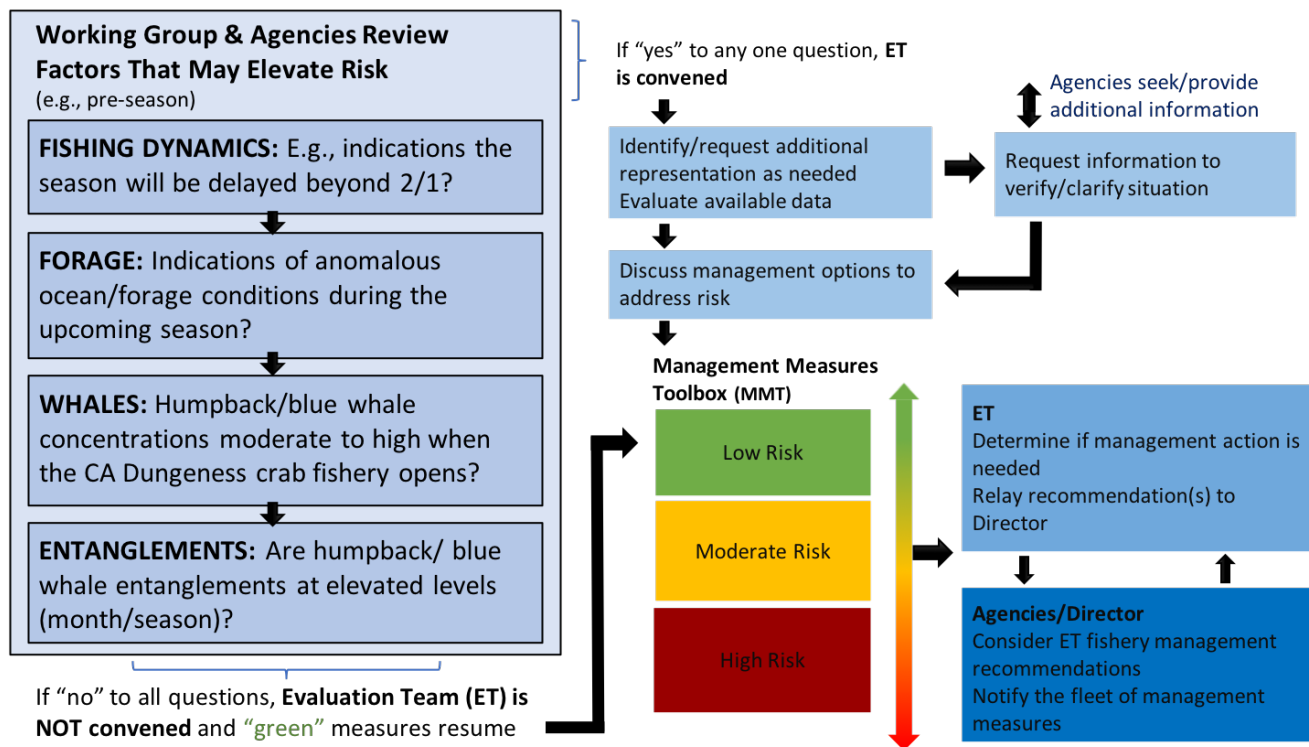
Figure 1. 2018-19 RAMP structure and function.



Risk Assessment & Management Tools

Lessons learned from the 2017-18 RAMP pilot have fine-tuned the two tools the RAMP uses to evaluate and respond to risk: the risk assessment framework (RAF) and management measures toolbox (MMT). Figure 2 illustrates the factors and questions the RAF addresses, together with the steps an Evaluation Team will take if convened. The RAF is not a decision-making tool; it is used by the Working Group and agencies to indicate if an evaluation team needs to be convened. A draft MMT has been developed by the Working Group and agencies for the evaluation team's use during the 2018-19 RAMP ([here](#)) and is intended to be refined as new tools are available. The CDFW Director will have interim authority to implement mandatory management measures as of January 1, 2019, as defined in Senate Bill 1309 (more information [here](#)).

Figure 2. Risk Assessment Framework Factors and Questions, and Evaluation Team Process to Consider Possible Management Measures



A number of guiding principles have been developed to support the evaluation team in their application of the MMT, including 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 and 2018-19 RAMP working assumptions are available on the Working Group's webpage.*

Seeking Input to Help Inform the RAMP

Commercial and recreational fishermen, members of the whale watch community, researchers, and other interested members of the public are invited to provide feedback on all aspects of the RAMP. The Working Group is invested in improving the availability of information that can help inform the RAMP, specifically related to data on whale distribution and fishing dynamics. Additionally, the Working Group is testing a number of technologies to improve data quality and test gear innovations. Those interested in learning more about these efforts, including opportunities to volunteer, are invited to contact the Working Group at info@cawhalegroup.com.

Information learned during the 2018-19 RAMP 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 2019.

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, recommend, and evaluate management measures that can effectively reduce whale entanglements in CA Dungeness crab fishing gear.
- Management measures will be fact-based, science driven, and proportional to the elevated risk conditions. Management measure 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.

**Draft Risk Assessment Framework (RAF) Assumptions
2018-19 CA Dungeness Crab Fishing Season
California Dungeness Crab Fishing Gear Working Group**

The 2018-19 RAMP will be conducted under the following working assumptions:

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

State-managed Fisheries: will be the focus of the RAMP. There is continued expressed interest to work with the Pacific Fisheries Management Council in the near future.

Role of the Risk Assessment Framework (RAF): the RAF, which considers the four priority factors that are believed to elevate entanglement risk—forage/ocean conditions, whale concentrations, fishing dynamics, and entanglements—is designed to indicate a need for more focused attention on the issue of whale entanglements in a fishery/area by an Evaluation Team. No management measures are prescribed by the RAF.

Management Recommendations: any recommendation(s) developed by an Evaluation Team (a subgroup of the Working Group) will be submitted to the Director of the California Department of Fish and Wildlife for consideration. Management recommendations may be voluntary or mandatory, informed by the Management Measures Toolbox (MMT) [here](#). The Director will have interim authority to implement mandatory management measures as of January 1, 2019, as defined in Senate Bill 1309 (more information [here](#)).

Spatial and Seasonal 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 and as information is available. The RAMP will consider factors across a seasonal calendar/scale.

Marine Life: focus on humpback and blue whales to date. Relevant information about other marine life (e.g., gray whales, fin whales, leatherback turtles, etc.) will be made available to the Working Group by advisors and other experts to help inform the RAMP's development and continued evolution.

Historical "norm": the 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 to include any marine life entanglements in CA Dungeness crab fishing gear and any entanglements observed/occurring in CA waters, regardless of fishing gear type.

Entanglements are measurements 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)
- RAF evaluation is based on confirmed and verified entanglements
- Certain entanglement circumstances can mobilize team discussions without other factors in play