

## **Exceptional Circumstances - Strawman Proposal Draft**

### **Framework Background**

The North Coast recreational red abalone fishery management plan (FMP) will provide a framework to help ensure long-term management of the resource, where management is objective, transparent and more responsive and adaptive, particularly under changing environmental conditions. Intended to serve as an overarching management document, an FMP identifies and discusses key issues that should be considered when drafting and adopting regulations to manage the fishery. Once developed, the Project Team may propose that a discussion on exceptional circumstances such as those identified in this draft proposal be included in the recreational red abalone FMP.

In the face of unusual or extreme environmental conditions that could drastically impact the red abalone resource, more precautionary measures may be needed. Better monitoring for signs of these conditions will be critical to inform precautionary decision-making in red abalone management. At its August 27th meeting, the Project Team recommended conducting a “catastrophic environmental safety check” for major events like oil spills, harmful algal blooms, and warm water anomalies. They also recommended reviewing other “investigative triggers” (e.g. biological and environmental indicators such as urchin density, kelp abundance, oxygen levels) to determine if conditions are poor and a more immediate response is needed to proactively protect red abalone. These would be considered ‘exceptional circumstances’. Given the challenge of verifying the mechanistic links between some of these ecological and environmental indicators and the status of the red abalone resource, the decision-tree was streamlined to include only density and length-based spawning potential ratio (SPR); it would have been difficult to include and evaluate them in the management strategy evaluation (MSE). Recognizing the importance of monitoring other biological and environmental indicators, the Project Team decided to include these indicators as a precautionary check before consulting an indicator-based decision tree informed by density and length data.

The draft management strategy is currently structured in two parts - Part A and Part B. Part A, incorporates the precautionary thinking that came from the discussions at the August 27 Project Team meeting to account for the presence of unusual or extreme environmental conditions that may impact the red abalone resource. If an exceptional circumstance has occurred, then further action or decision making is required before determining the status of the fishery (i.e., closed, *de minimis*, open). If no exceptional circumstances have occurred, Part B follows an indicator-based decision tree.

### **Questions to Guide Document Review**

Please consider the following questions during your review of the Exceptional Circumstances Strawman Proposal --

- Given capacity and cost constraints and current data availability, which three indicators would you suggest we prioritize for monitoring in Part A? Which data streams do we anticipate using?

- Are the indicators under consideration directly or indirectly related to impacts on red abalone health and productivity? Is the mechanism clearly understood or does a clear threshold exist?
- Which exceptional circumstances would trigger closure of all fishing zones and which would trigger closures at the individual fishing zone?
- What could data collection/sampling protocols look like during rapid assessments? Would data sources and sampling entities be pre-defined?
- How do we account for persistence of events like marine heat waves?
- Do you have any insights or concerns about how Part A would function? Would you be interested in serving in an advisory capacity or reviewing a more complete version of this proposal in advance of the draft FMP being presented?

### ***Exceptional Circumstances Strawman Proposal***

Part A of the decision tree would evaluate presence of broader scale ecosystem events or impacts, and/or rapidly assess indicators to evaluate any risks that could be detrimental or result in mass mortality of the red abalone resource.

Broader-scale ecosystem events and impacts would include:

- Persistence of large marine heat waves
- Presence of disease (e.g., withering syndrome)
- Presence of toxic harmful algal blooms
- Oil spills

Rapid assessment would include an evaluation of pre-determined and justified indicators:

- Ocean Warming
  - Dissolved oxygen level
  - Ocean temperature
- Environmental Shifts
  - Kelp abundance
  - Sea urchin density
  - Sea star density
- Ocean pH/acidification
- Red Abalone Reproductive State
  - Body condition
  - Gonad condition
  - Presence of empty abalone shells

If/when an exceptional circumstance is triggered, three potential actions could occur —

- Collect more data and continue on to Part B
- Fishery closed across one or multiple fishing zones
- Go to Fish and Game Commission for direction on management action