An Overview of Fishery Management Strategies

Recreational Red Abalone FMP Project Team
Meeting #3: Discussion of Draft Management Strategies
Tuesday, August 27, 2019

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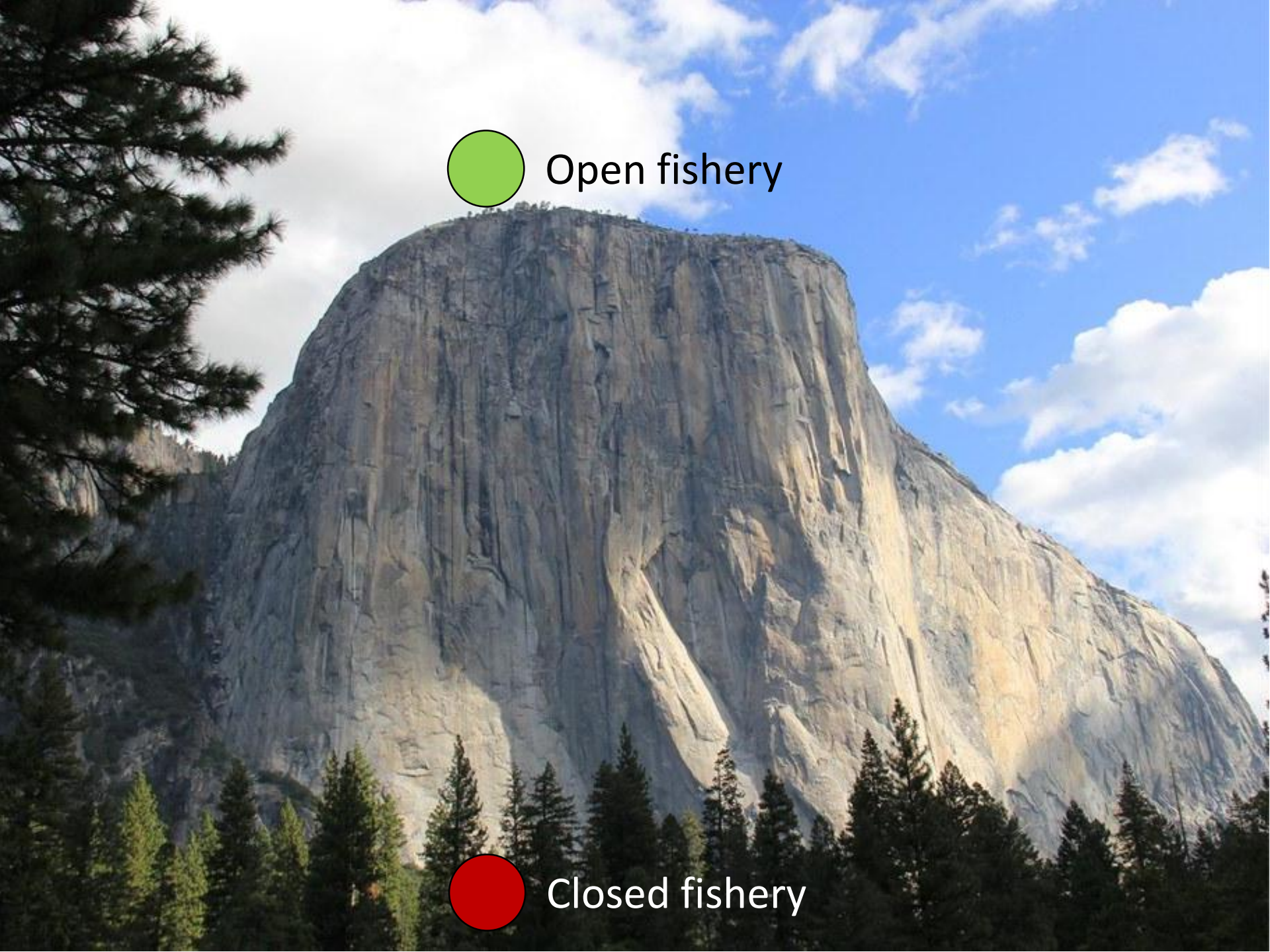
Open fishery
Closed fishery


Which route should we take?
Let’s talk about three primary constraints…


Constraint #1:
We are in an information-poor situation

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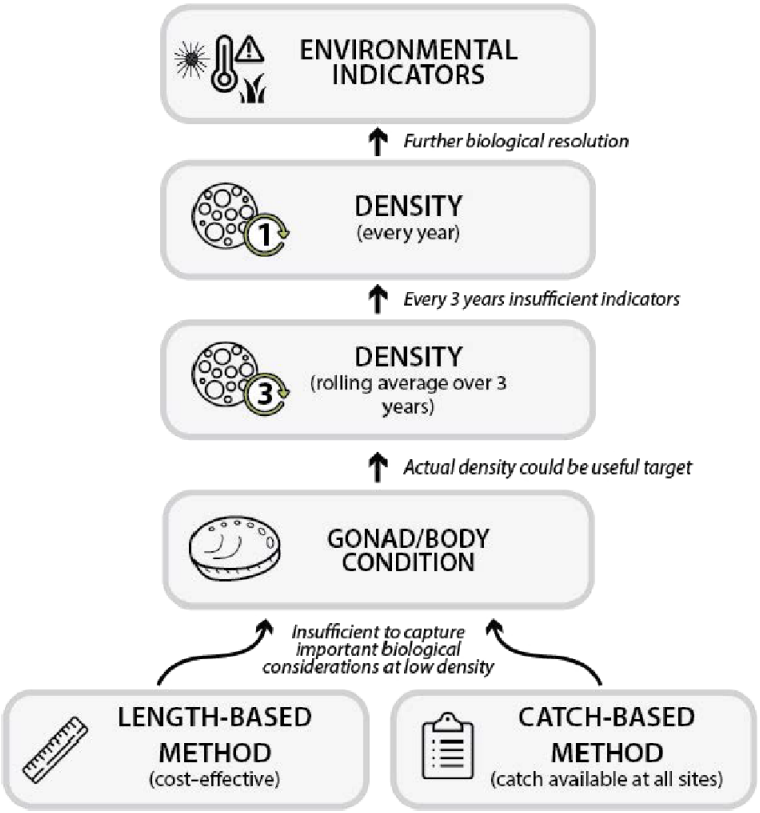
Information-poor
foot hold

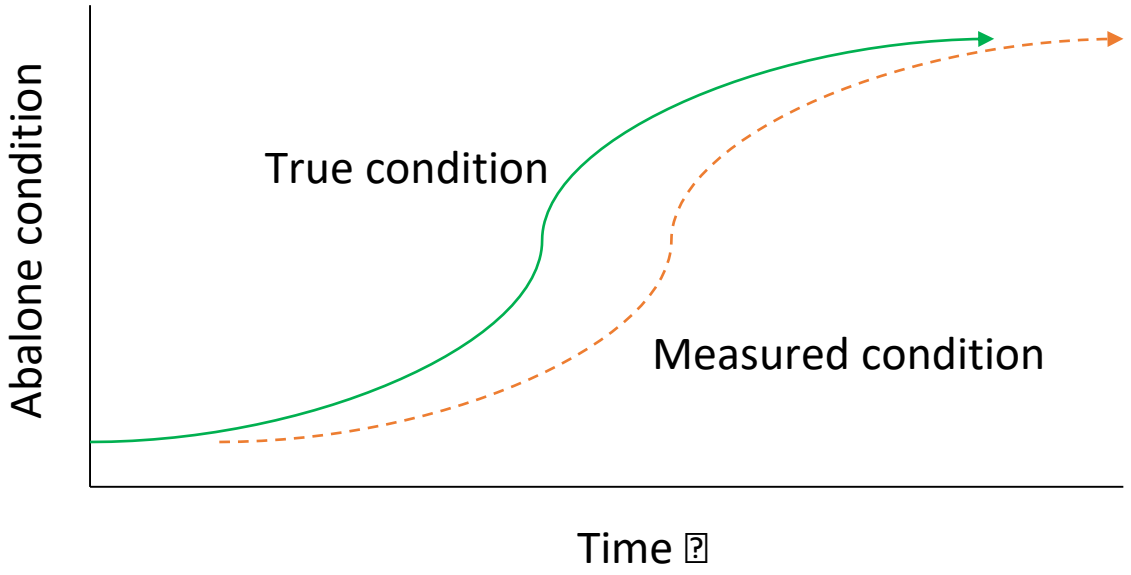
Constraint #1:
We are in an information-poor situation

- We have many data streams, each is limited in its information content



Constraint #1:
We are in an information-poor situation

- Some indicators are slow to respond in the face change



Constraint #1:
We are in an information-poor situation

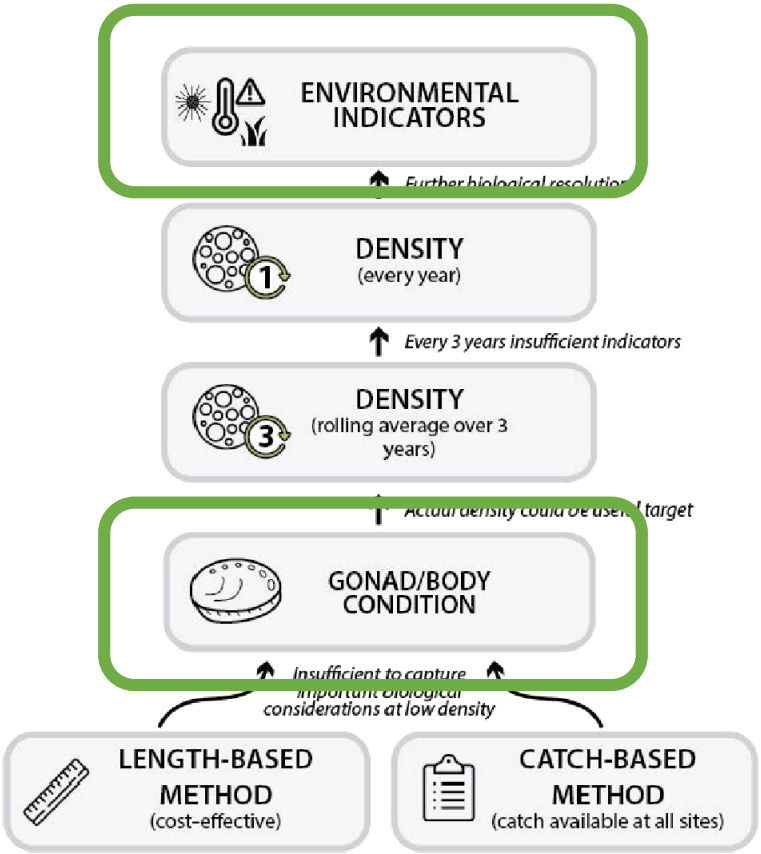
- Some indicators are imprecise

<u>What we desire:</u>
The ball is precisely in left-center field

<u>What we have:</u>
The ball is somewhere in the outfield

Constraint #1:
We are in an information-poor situation

- We have a limited understanding of how to verify the mechanistic linkages between environmental conditions and red abalone biology



Constraint #2:
Each indicator informs a somewhat disparate aspect of the biological and ecological condition of red abalone

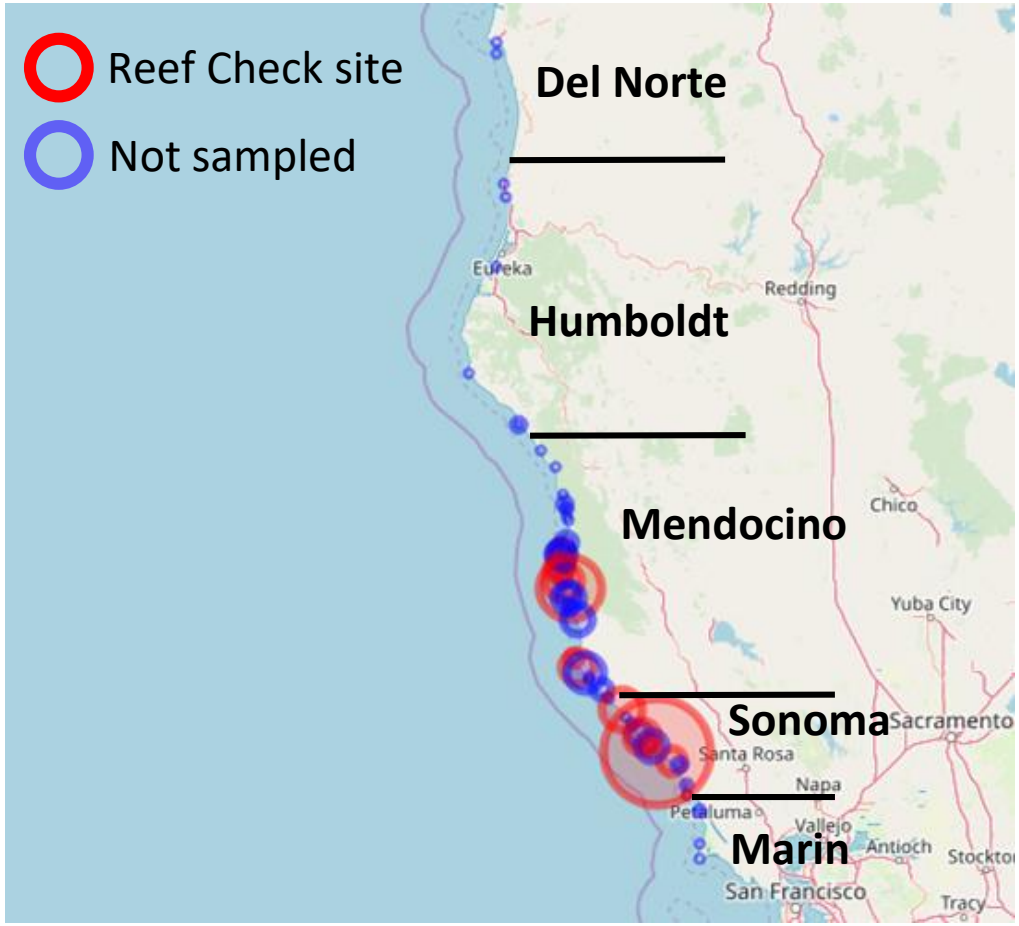
- We must use each indicator in a manner that reflects its most pertinent information contribution

The original

1 indicator → multiple indicators

Constraint #3:
Fine-scale spatial structure of red abalone is at odds with feasible scales of data collection.

- We must accommodate site-specific signals where this information is available, while also attempting to guide decision-making at much larger spatial scales



Where do we go from here?

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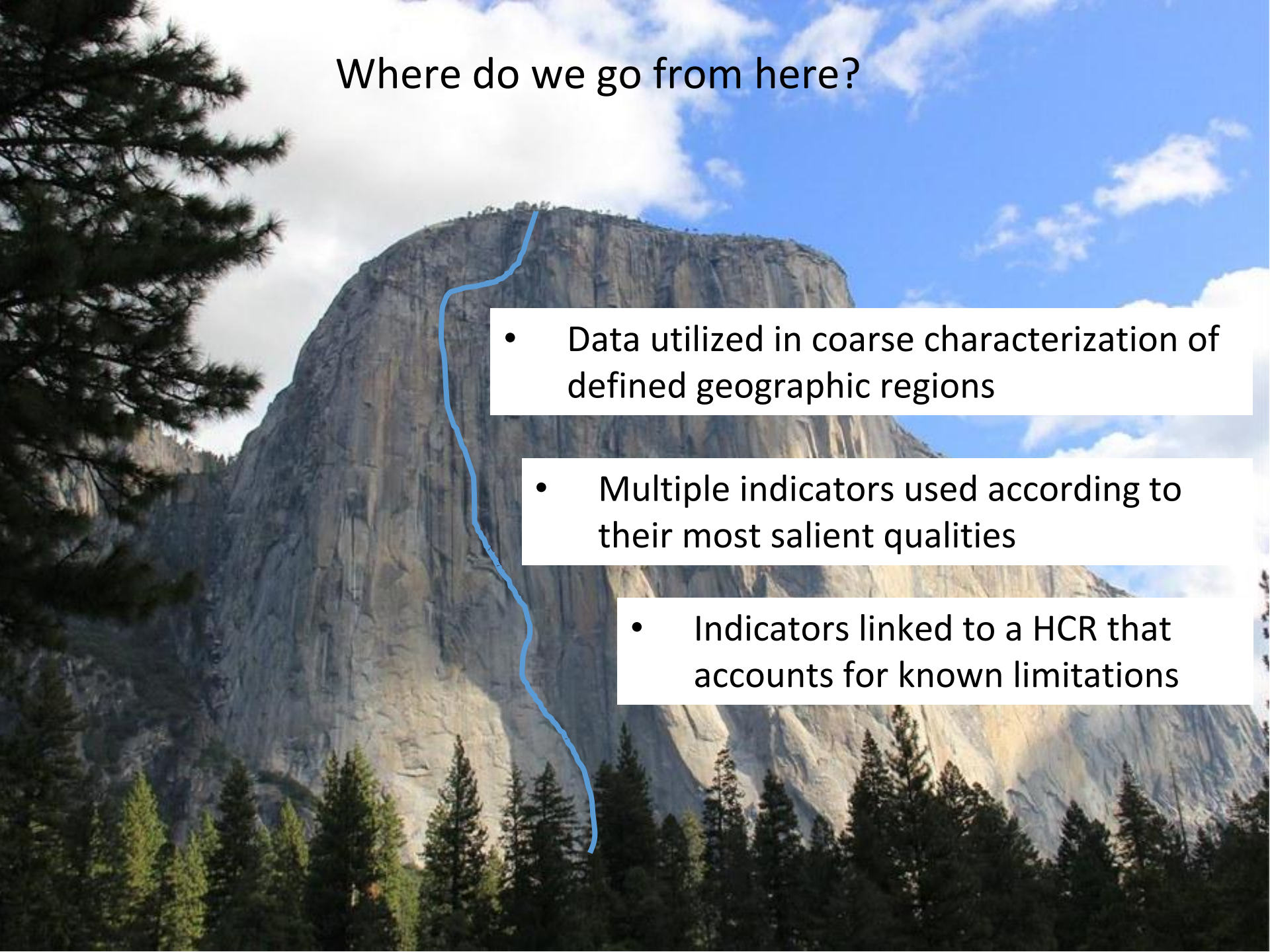


- Data utilized in coarse characterization of defined geographic regions
- Multiple indicators used according to their most salient qualities
- Indicators linked to a HCR that accounts for known limitations

Where do we go from here?

- The remainder of this talk will summarize two high-level concepts as part of the proposed man. strategy.

- The next talk will dive into the finer details of the proposed man. strategy.

Concept #1: Fishing zones

- Fishing Zones are geographic areas comprising several of the abalone report card sites.

- Why did the modeling begin with a zone-based strategy rather than specific report card sites?
  - Simplify and unify decision-making and enforcement within a defined fishing zone
  - Requires the least number of changes to existing sampling programs
  - Appears tractable with existing sampling intensity
  - Intended to maintain a pragmatism in data collection
  - Clear strategy for transition from de minimis to open access

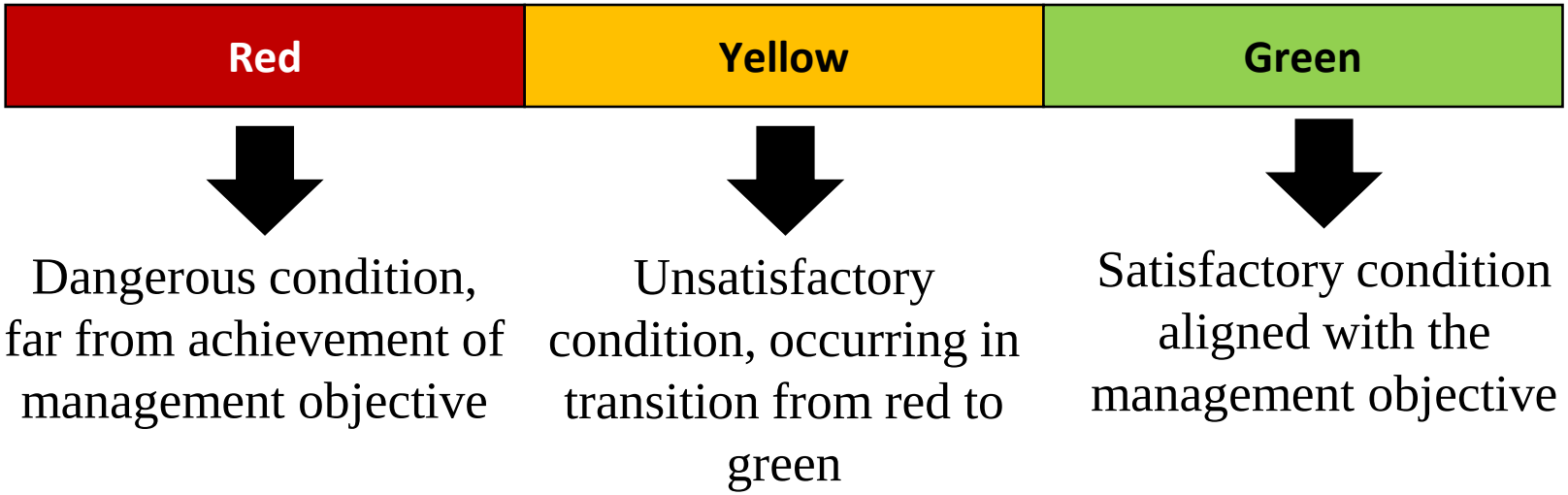
Concept #1: Fishing zones

- Proposal: the north coast is separated into two fishing zones:
  - Zone 1 consists of Marin and Sonoma counties,
  - Zone 2 consists of Mendocino, Humboldt and Del Norte counties.
- The management strategy is applied separately to each zone.
- Under this plan, each zone can have different management status from its neighboring zone at any given time.

Concept #2: Traffic light harvest control rule

- Indicator quantities are assigned to color categories
- Indicator quantities are transformed into a set of value judgements about the state of the resource

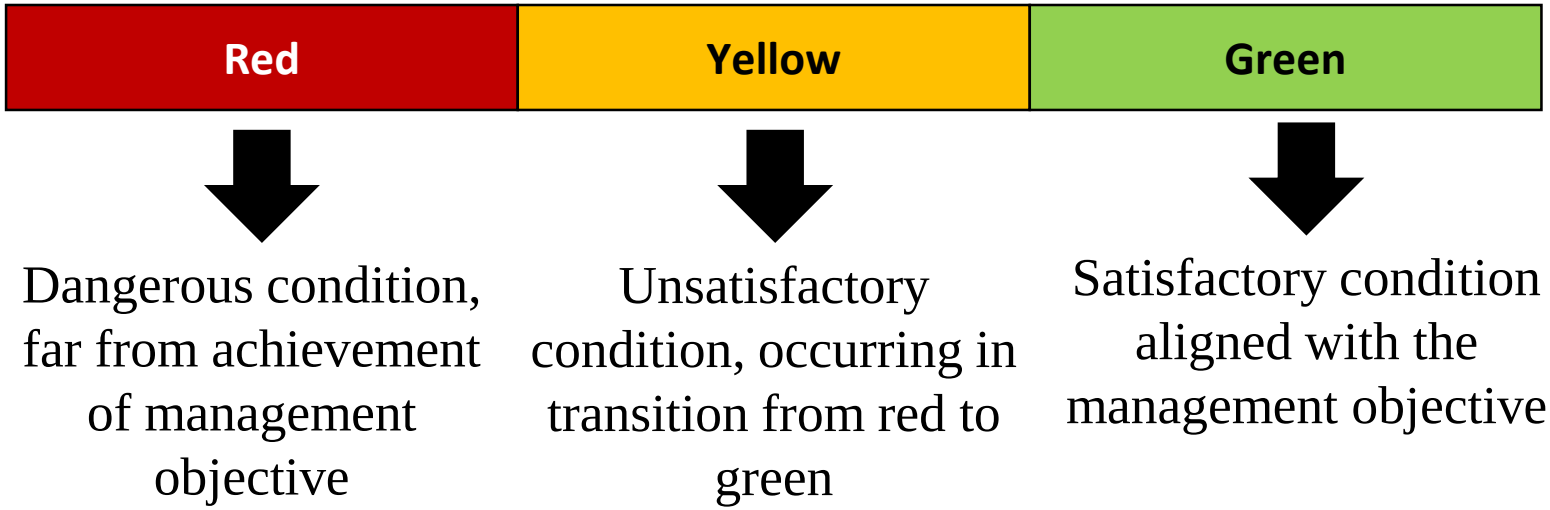
Management objective: enable open fishery status



Concept #2: Traffic light harvest control rule

- Use of traffic light approach found in the scientific literature
- Color category determined by comparing indicator to a reference point

Management objective: enable open fishery status



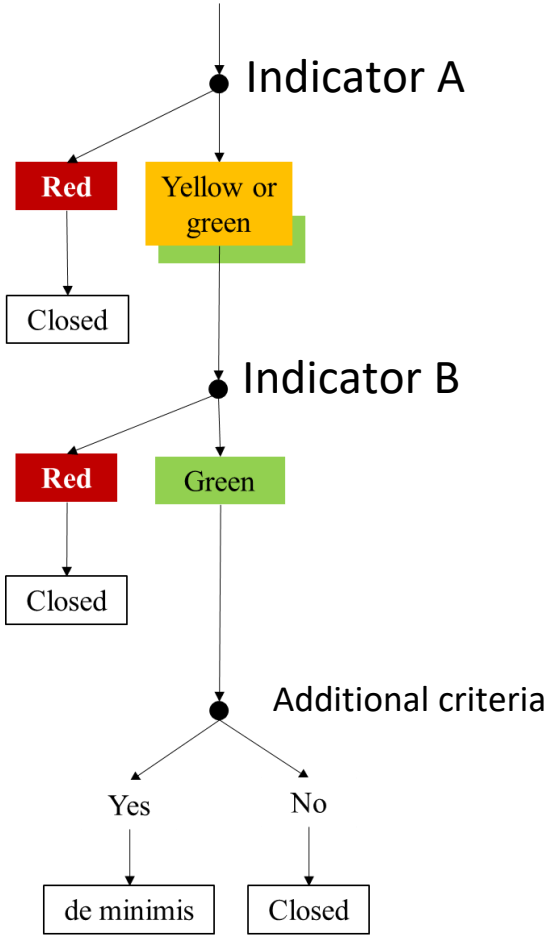
Concept #2: Traffic light harvest control rule

- Color codes linked to their use in decision trees
- Multiple indicators inform decision-making
- Combination of color coding + decision tree structure enables decision-making according to information limitations

Concept #2: Traffic light harvest control rule

- Start at the top of tree and follow the pathway (lines) according to the indicator colors.
- Do not jump ahead in following a path through the decision tree.
- It may appear that some pathways are repetitive or redundant, but this is not the case and each decision tree is designed to cover most eventualities.

Decision tree concept



Questions?

- Is the concept of the traffic light method clear and easy to follow?
- Please share your thoughts on the idea of fishing zones
- Does the fishing zone idea integrate peer reviewer and project team ideas?