



Climate Scenario Investigations

Definitions

Scenario

- Oxford English Dictionary:
 - A postulated sequence or development of events .
- Essentially - Plausible, consistent story about the future
 - Consider how we would operate under novel conditions
- Scenarios are not forecasts or predictions
 - Opportunity to identify potential solutions

Scenario – CSI Proposed Definition

- Plausible alternative futures
 - each an example of what might happen under particular assumptions.
- Provide a starting point for examining questions about an uncertain future, and
- Can help the Council consider alternative future management actions in concrete terms

Scenario Planning Focus

- How the California Current Ecosystem might change
 - How West Coast fisheries and communities might respond
- Help identify uncertainties, challenges, or roadblocks
 - Different potential “realities”
- Examine specific potential events
 - Find paths forward should they become reality

Scenario Topics

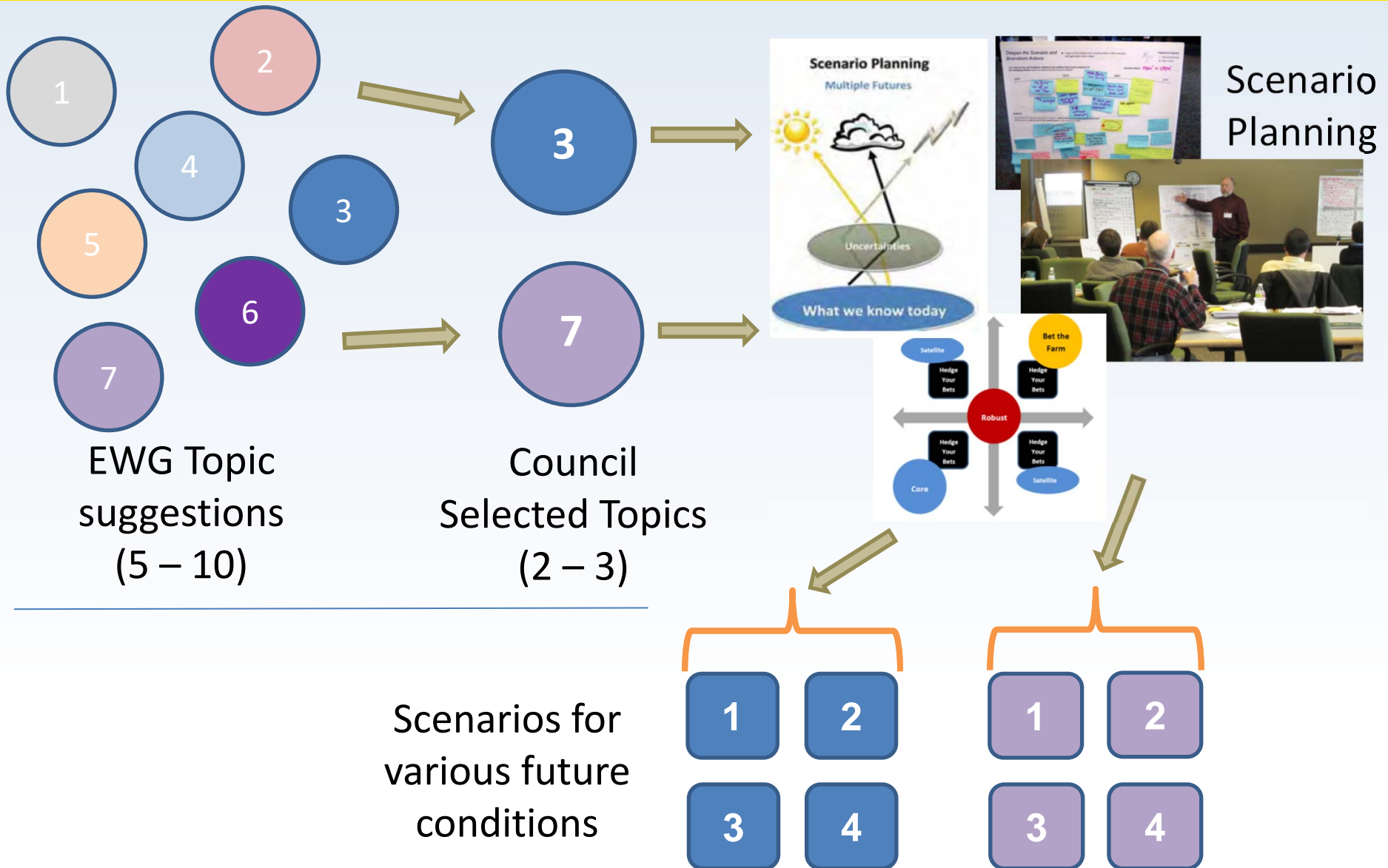
The CSI is recommending the EWG provide a range of “topics” for consideration

- Scenarios are the potential reactions to potential future states
- Topics are what you are generating scenarios about
 - Specific areas of focus within which scenario planning will occur

Scenario Planning

- Scenario Planning is NOT:
 - Complex modeling exercise
 - Management Strategy Evaluation
 - Data intensive review of known predictions
 - Intended to “solve” current issues
- Scenario Planning IS:
 - Examination of plausible future states
 - A way to identify regulatory barriers
 - Discussion of ways to adapt
 - Influenced by what we know and what we don’t

Scenario Planning Process



Considerations

- Timeframe - **15-20 year window**
- FMP Specifics – **how are they different?**
 - Existing tools
 - New tools needed?
- Fishery Scale – **focus on fishery sectors**
 - Broader groups that interact within/between fisheries
 - Council doesn't manage communities
 - Individual choice is difficult to gauge
 - Provides flexibility that individuals/communities can access
- Resources Available – **capitalize on other efforts**
 - Funding, process, or information resources

Scenario Topic Selection

- Vulnerability and risk - relative to:
 - Individual species
 - Fishing communities
 - Vulnerability factors common to ALL scenarios:
 - Stock changes
 - Human behavior changes (in response to species changes)
- Level of certainty of potential outcomes
 - Too many unknowns difficult to narrow
 - Need to have plausibility

Initial Product

Scenario Topics and Process Scoping

1. Potential Scenario Planning Topics
 - a. Rationale for inclusion
2. General Scenario Planning Process recommendations (regardless of topics selected)
 - a. Proposed timeline (may differ from CSI)
 - b. Proposed meetings/workshops
 - c. Funding opportunities and collaborative efforts
 - d. Expert facilitation needs
 - e. Required participants, and
 - f. Other recommendations
3. Potential Scenario Planning Process Partners

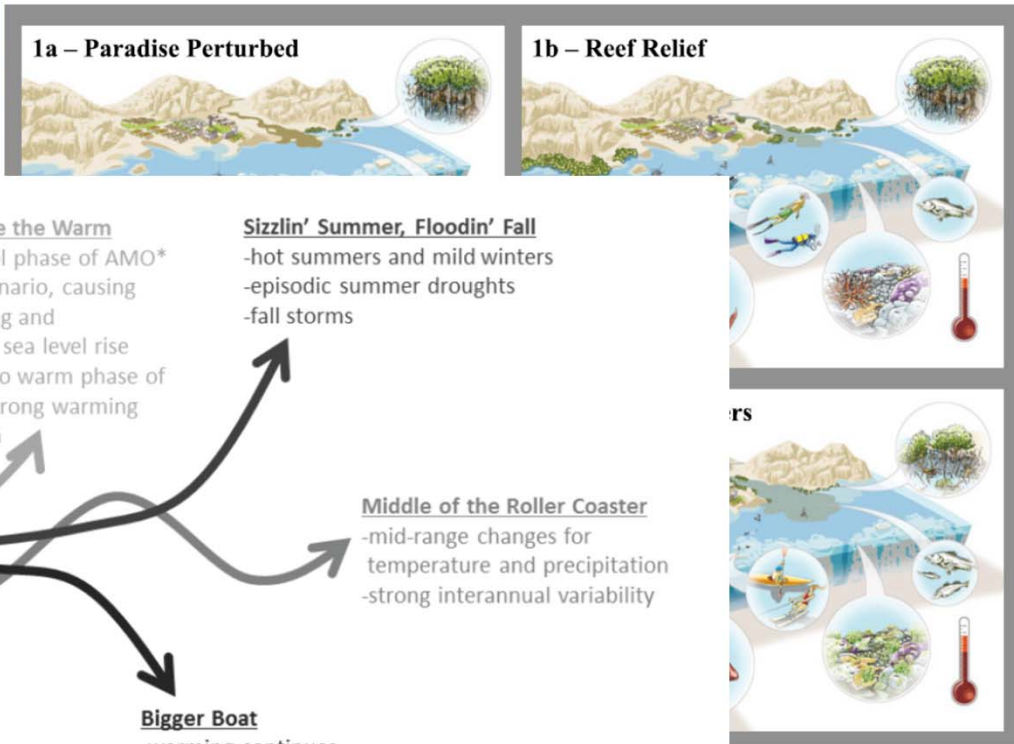
Final Product

Scenario Planning Report Will...

- ...inform future Council action
 - Provide options for tools (existing or new)
- ...not be a call for immediate action
 - Options for actions if scenarios play out
 - Potential proactive management to prevent unwanted outcomes
- ...not be comprehensive
 - Brief descriptions of scenarios, outcomes, and potential responses for selected topics.

Example Products

Climate Change Impacts,
Great Barrier Reef,
Evans, et al, 2013



Calm Before the Warm

-shift to cool phase of AMO* early in scenario, causing slight cooling and accelerated sea level rise
-then shift to warm phase of AMO and strong warming acceleration

Sizzlin' Summer, Floodin' Fall

-hot summers and mild winters
-episodic summer droughts
-fall storms

Middle of the Roller Coaster

-mid-range changes for temperature and precipitation
-strong interannual variability

Bigger Boat

-warming continues
-precipitation at high end of projections
-frequent storms and major flooding events

Present

Present

Scenarios

2040

*AMO: Atlantic Multidecadal Oscillation

Final Matrix:

- Climatic Conditions:
 - Climate changes as expected
 - Less snow, earlier melt, permafrost in winter
 - Higher winter/lower spring
 - River temp increases
 - SST changes non-uniform and less warming/cooling
- Passage barriers removed /
- Salmon primarily affected by variability and temperature

Warmer, Wetter

- Climatic Conditions:
 - Climate changes as expected
 - Less snow, earlier melt, permafrost in winter
 - Higher winter/lower spring
 - River temp increases
 - SST changes non-uniform and less warming/cooling off Greenland
- Most passage barriers remain
- Salmon primarily affected by marine suitability, streamflow variability, temperature, and barriers

Soggy but Hindered

- and less warming/cooling off Greenland
- Most passage barriers remain
- Salmon primarily affected by marine suitability, streamflow variability, temperature, and barriers

Hot and Blocked

Acadia National Park Climate Change Scenario
Planning Workshop Summary - 2015

NOAA – Atlantic Salmon
Scenario Planning Pilot

Proposed Timeline

Proposed Timeline

1. Scenario **Topics** and **Process** Scoping –
Nov. 2018 – Mar. 2019

- a. Meetings/webinars with EWG, MTs, and HC
- b. Scoping Webinar with MTs, ABs, public

2. Council **Topic Selection** – Mar. 2019

- a. Consideration of EWG report
- b. Council selects 2-3 Topics and approves process

3. Scenario Planning – Mar. 2019 to Mar. 2020

- a. Scenario Planning - approved process
- b. EWG Meetings
- c. Regular updates to Council on progress
- d. Report results and recommendation in March 2020



Thank You



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