

“Methods for Characterizing Risk in Climate Change Assessments:
A Workshop for the USGCRP”

Assessing Coastal Risks in Future National Climate Assessments

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One Preface & Two Premises

Preface

I fully stand behind the NCA3 coastal chapter

- It's correct
- It reflects the then-state-of-knowledge
- It was a very good knowledge assessment

That doesn't mean we should repeat it.

Premises

The probability of SLR and its impacts is 1.

- The only question is how much how fast

The US has never over-prepared for coastal disasters. Never. Ever.

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**The third national climate assessment's coastal chapter:
the making of an integrated assessment**

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Abstract Coastal areas are on the front lines of the impacts of climate change. The immediate impacts of temperature, precipitation and sea-level change affect rich but already threatened ecological systems and the most populated, highly developed, and economically vibrant regions of human activity on the planet. The specific vulnerabilities, impacts and adaptation options and activities vary greatly across the coastal areas of the US. The charge given to the coastal chapter team of the third US National Climate Assessment (NCA3, released in May 2014) was to discern the key vulnerabilities and most important cross-cutting concerns across the extensive coastline of the US. This paper is a reflection on what the coastal chapter team accomplished and how it was done (including author selection, staff support, technical inputs, the chapter development process, within- and cross-chapter integration, the review process, the delivery and high-impact release, the timeline of key assessment steps, and evaluation of the chapter development process). It concludes with eight lessons that might inform the activities of future collaborative author teams writing transdisciplinary, integrated assessment reports.

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Risk Characterization in NCA3

We tried.

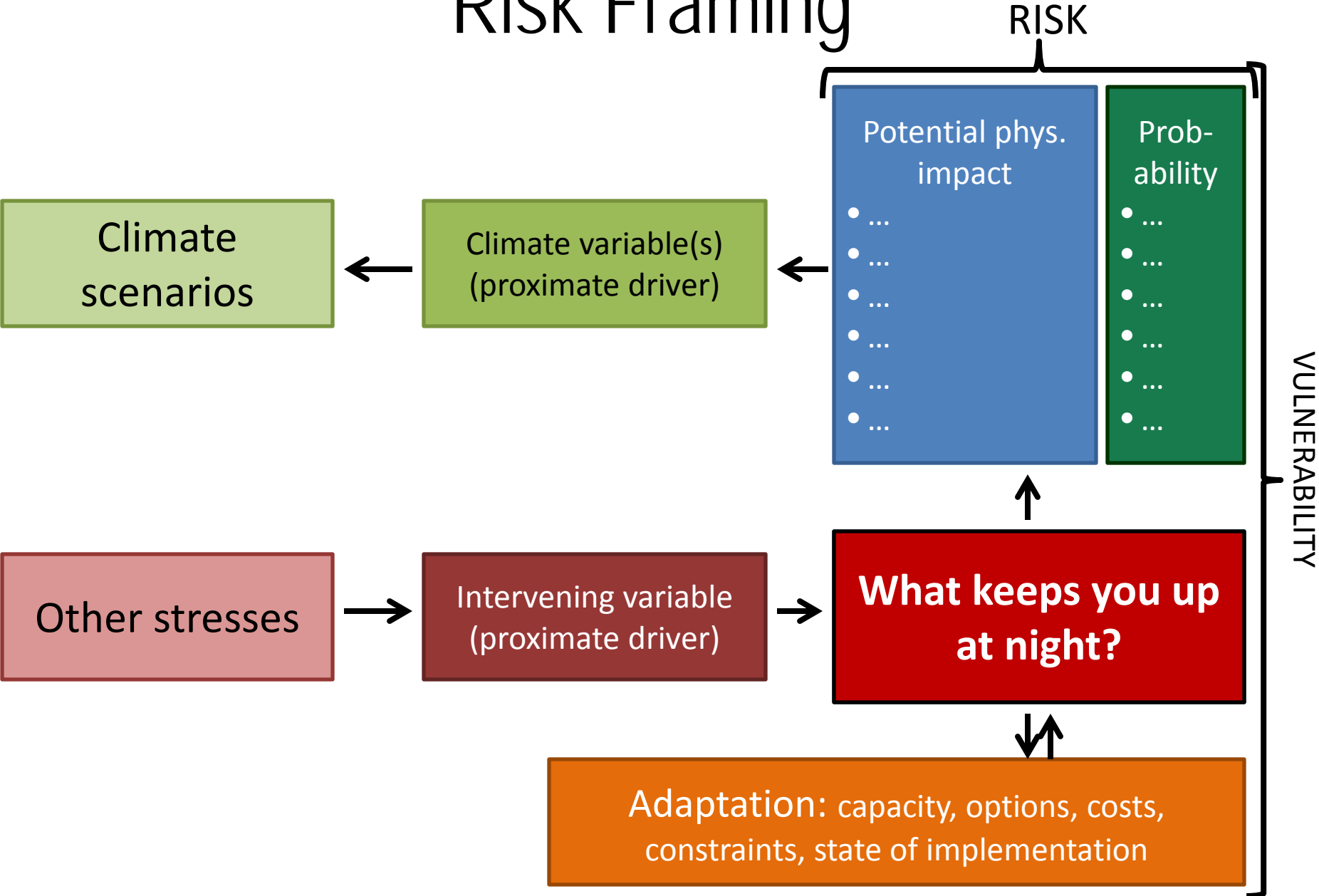
What we did.

- Vulnerability framing
- Confidence assessment

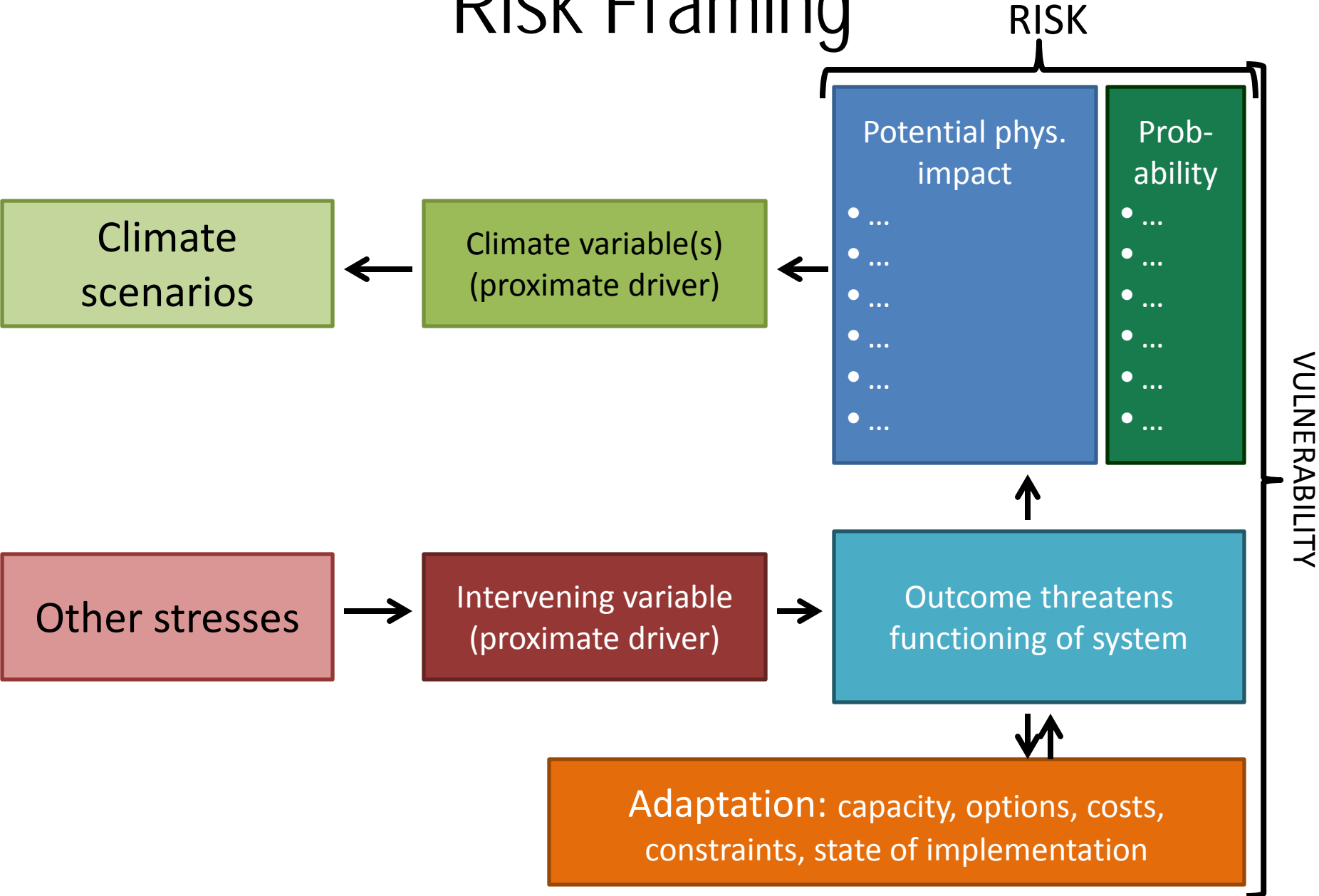
Risk Framing

**What keeps you up
at night?**

Risk Framing



Risk Framing



Risk Characterization in NCA3

We tried.

What we did.

- Vulnerability framing
- Confidence assessment

How it was useful.

- Boundary object facilitating cross-disciplinary dialogue
- Identification of key vulnerabilities
- (So far) no evidence that it was useful to anyone else


Why it worked (as far as it did).

- Vulnerability/risk background
- Continual facilitation of team dialogue

We failed.

Risk Characterization in NCA3

And that's a good thing.

π *  = "likely"

Extremely difficult to quantify *defensible probabilities any time soon* (not by NCA4 or NCA5...)

State of science

Impossible to identify *context-sensitive outcomes across US* and account for *critical interacting factors*

Wicked problem

Extremely unlikely that the result can be *communicated effectively by NCA* and that audiences understand *meaning as intended*.

Institutional limits & Risk communication

Risk is a dead end.

Risk Characterization Going Forward

At best: Subjective risk judgment

- Must involve scientific, practitioner experts & stakeholders
- Facilitated elicitation and deliberative process



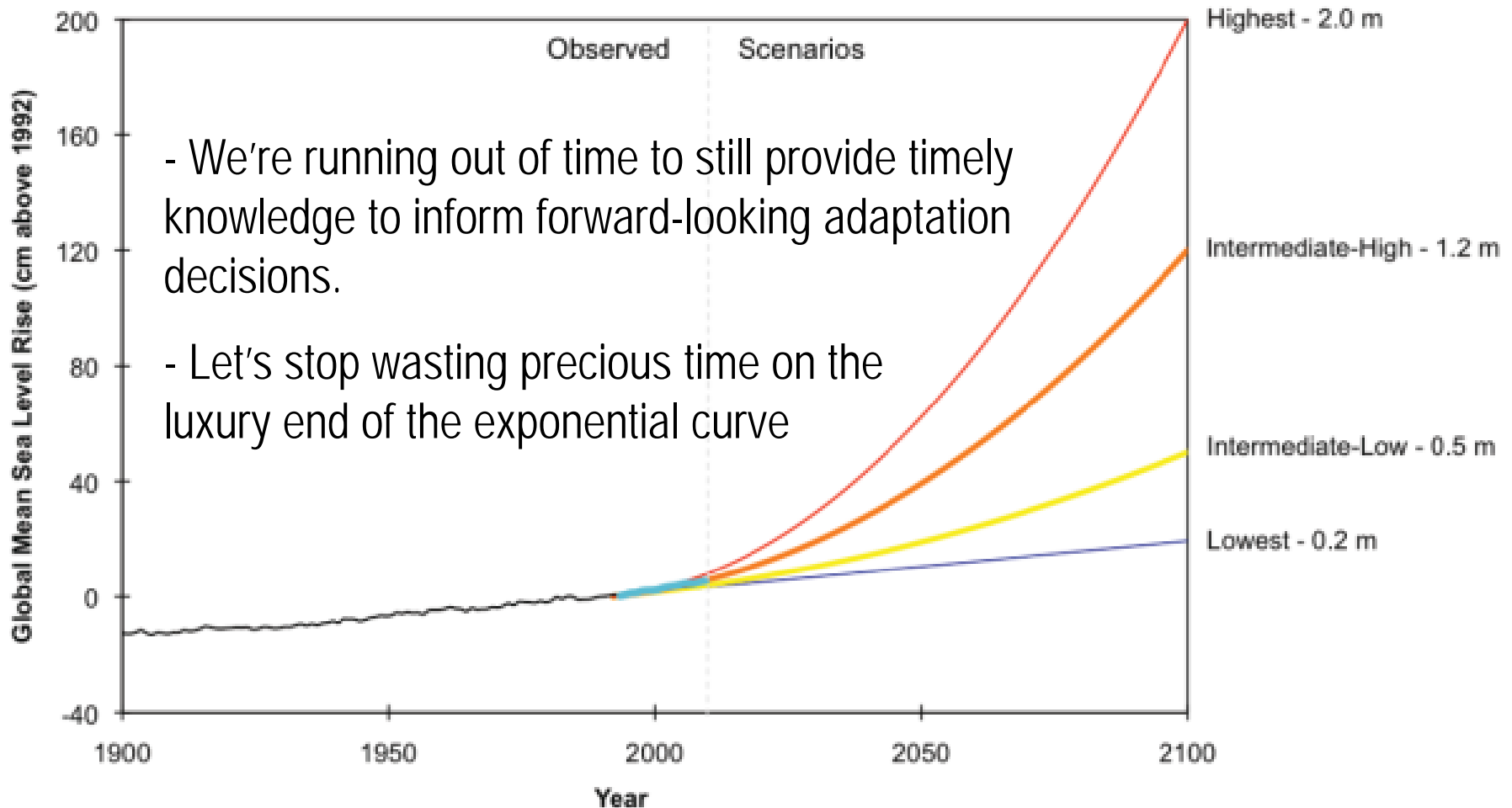
Risk Characterization Going Forward

Do not try to fail better.

- All SLR projections will remain conditional on climate change and contingent on scientific improvements expected to take several decades.
- No even nationwide coverage of studies that integrate even the most important factors affecting outcomes.
- The risk literacy of the public and planners will remain low for the foreseeable future.
- NCA4 will fall into the first term of a new president – even for a pro-climate president, political expediency may prevail.

Risk Characterization Going Forward

To be useful, try something different.



From Risk Characterization to Response Space Characterization

**Anything practically useful will
require political courage.**

- So the real question is not whether and how we can
characterize risk...

... but whether we are willing to characterize the response
space and draw out pathways toward difficult futures.

From Risk Characterization to Response Space Characterization

Approach this from the problem that will need to be solved.

- Not from "risk"
- Not from a decision perspective

Response Space Characterization

1. Identify areas for “protection”

- Identify areas able to generate/attract the necessary funds for *in situ* adaptation
- Baseline delineation using Titus et al. 2009; Martinich et al. 2012, Strauss et al. 2012; Gittman et al. 2015; Lentz et al. 2016 etc.

2. Determine assessment criteria

- Establish normative criteria beyond benefit/cost ratio
- Involve range of experts (science, economists, security, ethics, systems...) and stakeholders

Response Space Characterization

3. Prioritize based on urgency

- Compare level of existing protection to level of needed protection
- Assess time it would take to build needed protection
- Rank must-protect areas by the time available to build the necessary/desired protection in time before it is needed

4. Assess pros, cons of *in situ* adaptation

- Describe pros and cons of *in situ* adaptation and how the integration of “green” infrastructure and other social/economic measures would affect outcomes
- Judge “best practice” approaches for *in situ* adaptation

Response Space Characterization

5. Assess options for “accommodation”

- For lower-priority protection areas and for not-to-be-protected areas, describe and assess all approaches for “accommodation”
- Establish normative criteria beyond benefit/cost ratio
- Provide “best practice” list of approaches for accommodation (living with sea-level rise)

6. Determine time to abandonment

- For most-likely-to-be-abandoned areas assess time remaining before occupancy becomes untenable > timeline
- Consider SLR and socioeconomic, cultural, environmental factors
- Rank to-be-abandoned areas by time available and level of needed assistance

Response Space Characterization

7. Assess status, options, challenges and best practices

- For areas to be relocated synthesize status, challenges, attempted/available solutions, status of unresolved issues
- Describe needs of receiving communities
- Review and assess international literature on best practice, comprehensive “relocation” programs

8. Assess social acceptability

- Synthesize literature on status and conditions of social acceptability of full range of adaptation options, pathways
- Consider all factors that affect acceptability (e.g., sense of place/place identity, ecological, economic, political, cultural)

Response Space Characterization

9. Assess governance adequacy

- Consider governance, not just government
- Describe/assess governance approaches
- Highlight “best practice” examples and innovative approaches from US and around the world

10. Synthesis & research needs

- Conclude with assessment of what level of challenge we are facing
- Assess confidence in what is well/less well understood
- List research needs to better inform adaptation pathways

The Upshot

- Even best practice risk assessment and characterization is not fit for purpose of a national assessment.
- Help policy-makers focus, prioritize and assess problem-solving strategies for challenges sure to come, and inevitably too soon.
- The goal should be to change the public discourse into a problem-solving conversation about coastal risks and adaptation, not to rearrange the risk deck chairs on the Titanic of our responses to a wicked problem.

Thank you

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