

NOAA Response to SAB Review

A Presentation to the NOAA Science Advisory Board

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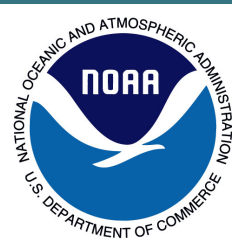
Outline



- Motivation and Purpose
- Review of Timeline
- SAB Feedback and NOAA Responses
- Reflections
- Looking Forward



Motivation and Purpose



82 Days Underwater: The Tide Is High, but They're Holding On

A brutal "king tides" season made worse by climate change has flooded the streets of a Florida Keys community for nearly three months.

<https://www.nytimes.com/2019/11/24/us/florida-keys-flooding-king-tide.html>



Motivation and Purpose



To conclude NOAA's response to the SAB's review of *Leadership in Coastal Resilience Report*

Report has been finalized and review response memo sent to SAB/CWG



Timeline and Status

- **October 2020: The NOAA Science Advisory Board selected coastal resilience as a long-term priority for the agency**
- Spring 2021: Started LCR report. Mapped the work of NOAA line offices and programs to coastal resilience issues
- **Summer 2021: Held 13 focus groups with a variety of stakeholders**
- November 2021: Held a focus group with NOAA subject matter experts from each line office.
- **Winter 2022: Finalized the report**
- April 2022: SAB recommendations report transmitted to NOAA
- **April 2023: Briefing and transmittal to SAB on NOAA response to review comments**



SAB LCR Report



Three Themes for Recommendations:

- **Continued Discovery**
 - Nature-Based Approaches to Risk Reduction
 - Supporting Adaptation of Important Coastal Species
 - Socio-economic Inquiry
- **Networks of Knowledge Delivery**
 - Enhance Observing Systems
 - Integrated Coastal Resilience Modeling
 - Predicting Human-Natural System Feedbacks
- **Making a Difference on the Ground**
 - From Stakeholder Engagement to Co-production and Co-design
 - Facilitating Social Learning
 - Support for Implementation



SAB Feedback and NOAA Response



SAB Recommendation #1

Nature-Based Approaches to Risk Reduction

Conduct research in partnership with others to increase the understanding of tradeoffs between the performance of natural coastal habitats in mitigating current and future flood risk and the provision of other ecological functions.

NOAA's Response:

- NOAA works with more than 15 federal agencies, state agencies in every state, academic institutions, and the private sector as we conduct research in partnership with others to increase the understanding of tradeoffs between the performance of natural coastal habitats in mitigating current and future flood risk and the provision of other ecological functions.
- NOAA utilizes competitive research programs to advance our understanding of Nature-based approaches through directly supporting external scientists
- NOAA scientists within the National Centers for Coastal Ocean Science (NCCOS) and Office for Coastal Management (OCM) also work closely with interdisciplinary and multi-agency teams to assess the performance of nature-based solution projects.



SAB Feedback and NOAA Response



SAB Recommendation #2

Supporting Adaptation of Important Coastal Species

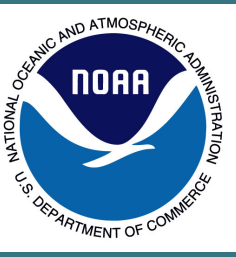
Identify and address gaps in scientific understanding that limit the ability of NOAA and its partner agencies to anticipate and effectively respond through mitigation, adaptation, restoration, or other management measures to climatologically induced threats to important coastal fisheries and other marine species.

NOAA's Response:

- NOAA's Climate Ecosystems and Fisheries Initiative (CEFI) calls for development of an operational decision support system to provide resource managers with robust information on expected future conditions, risks and best resource management/ adaptation strategies.
- The CEFI system is targeted research and observations to fill key information gaps, validate models and provide continuous innovation. While there are a variety of efforts working to address these information needs. NOAA looks forward to addressing these gaps, spatially and temporally.



SAB Feedback and NOAA Response



SAB Recommendation #3

Socio-economic Inquiry

Conduct and support social science research to increase the understanding of how people (individually and collectively) understand, react to, and are affected by changing coastal conditions (both chronic and acute) including consideration of interactions among economic consequences and social and cultural changes that the loss of (or restoration of) coastal resilience can affect or engender.

NOAA's Response:

- A portion of NOAA's Bipartisan Infrastructure Law funding for flood modeling/mapping is aligned to support social science research, including identifying and engaging users on their uses of flooding information, methods for identifying community level tradeoffs and co-benefits of flooding adaptation responses (including those related to coastal risks), and improving inclusive methods of engagement for coastal communities.
- NOAA recently supported a synthesis of the literature and on-the-ground projects to identify best practices around risk communication for underserved audiences.



SAB Feedback and NOAA Response



SAB Recommendation #4

Enhance Observing Systems

Further refine the development and deployment of land/water and space-based observing networks that are directly useful to local entities to track and forecast a variety of coastal ocean conditions over time.

NOAA's Response:

- NOAA is applying Bipartisan Infrastructure Law funding to acquire high resolution land cover data that will be valuable for local governments exploring their vulnerability to flooding and potential nature-based solutions.
- NOAA is also exploring, together with NASA and USGS, how satellite data can be used for developing "data indicators" to be used in coastal adaptation planning.
- NOAA is piloting novel low-cost water level sensors in the southeast of the U.S. through the Southeast Coastal Ocean Observing Regional Association (SECOORA).



SAB Feedback and NOAA Response



SAB Recommendation #5

Integrated Coastal Resilience Modeling

Establish an Integrated Coastal Resilience Modeling framework that uses existing and enhanced observing systems to provide coastal decision makers with key insights into the cumulative effects of future physical, chemical, and ecological change at subseasonal, seasonal, and multidecadal time scales.

NOAA's Response:

- NOAA is continuously maintaining, and expanding the model domain and skill to advance forecasting and prediction capabilities.
- The Coastal and Ocean Modeling Testbed (COMT) program, the Disaster Relief Supplemental Act (DRSA), and the Bipartisan Infrastructure Law (BIL) fund projects that advance data assimilation for coastal models.
- The COMT and DRSA programs fund projects that advance our data assimilation capabilities and the BIL funding will implement data assimilation in development of the East Coast Community Ocean Forecast System (ECCOFS) which includes the US East Coast, Caribbean, and Gulf of Mexico.



SAB Feedback and NOAA Response



SAB Recommendation #6

Predicting Human-Natural System Feedbacks

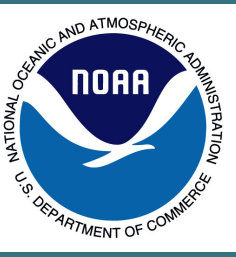
Build on socio-economic research and modeling of biogeophysical change to develop tools that encompass feedbacks between human and natural systems to support exploration of future social, economic, and environmental conditions on saltwater and freshwater coasts at a variety of scales

NOAA's Response:

- NOAA has allocated funds from the Bipartisan Infrastructure Law (BIL) to support the societal data insights initiative, which seeks to integrate social and physical data to better understand their interactions in the past with respect to flooding.
- These data-focused efforts are supported via supplemental rather than base funding and NOAA is likely a decade away from truly having any predictive capability in this realm.



SAB Feedback and NOAA Response



SAB Recommendation #7

From Stakeholder Engagement to Co-production and Co-design

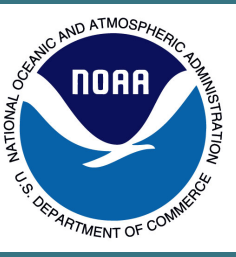
Build new partnerships to engage in the co-production and co-design of knowledge and action to generate new knowledge, capacities, networks, and actions that are more inclusive, relevant, and impactful.

NOAA's Response:

- NOAA is building on the successful implementation of the NOAA Service Delivery Framework to foster and sustain the equitable relationships that enable co-development of products and services.
- Bipartisan Infrastructure Law funding will support the development of a national community of practice around resilience to coastal inundation, co-led by NOAA's Office for Coastal Management and the National Sea Grant Office.



SAB Feedback and NOAA Response



SAB Recommendation #8

Facilitating Social Learning

Develop, evaluate, and refine interactive approaches that enable a variety of coastal audiences to access and interpret outputs from the Integrated Coastal Resilience Modeling framework and human-natural systems modeling and understand the varied potential consequences of action/inaction on their interests, including timelines for change and adaptation and costs and benefits to people and businesses.

NOAA's Response:

- This SAB recommendation encourages NOAA to implement the [NOAA Service Delivery Framework](#), where continuous stakeholder interaction is implied throughout product development lifecycles. With this recommendation, the tools and products that are built for coastal audiences will be more informed and useful for solving adaptation issues.



SAB Feedback and NOAA Response



SAB Recommendation #9

Support for Implementation

Enhance and expand the network capacity and efficacy of NOAA and partner engagements at local and community scales to help communities and community decision makers identify and implement solutions that build coastal resilience.

NOAA's Response:

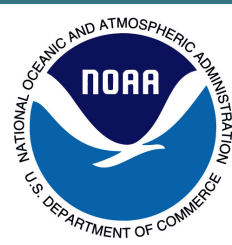
- NOAA programs do provide engagement and local technical assistance, but the agency's ability to do so at a national scale is resource limited.
- Considerable progress has been made through national partnership networks (e.g., National Sea Grant College Program, Digital Coast) and the expansion of regionally-based staff. BIL funding will enable NOAA's Office for Coastal Management and the National Sea Grant Office to develop a national community of practice around resilience to coastal inundation.
- Bipartisan Infrastructure Law (BIL) funding and possible Inflation Reduction Act (IRA) funding will enable a meaningful advancement in NOAA's ability to support equitable coastal climate adaptation and resilience efforts at local and regional scales.



Reflections

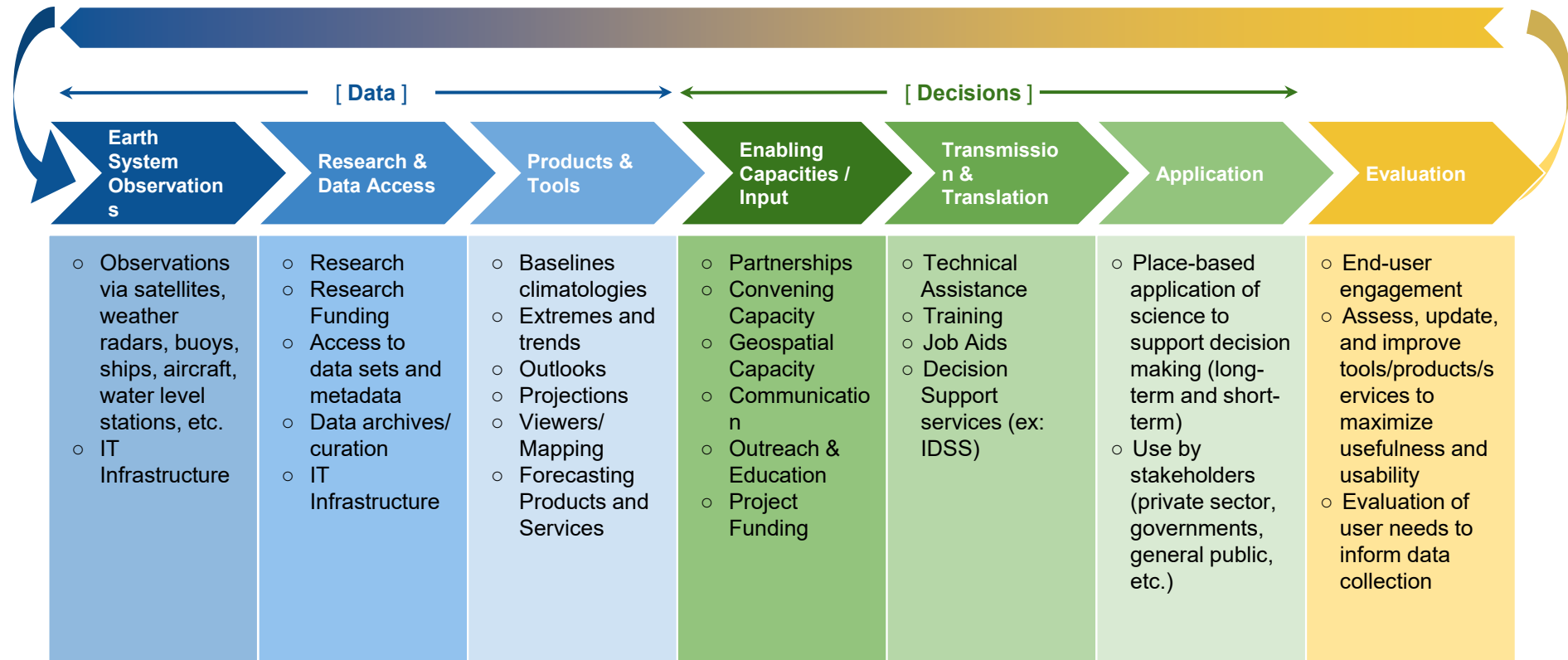


- **Partnership**
- **Science and Societal Outcomes**
- **Domain Expertise**



Reflections

NOAA Value Chain - Coastal Resilience





Looking Forward



- **Execution of Coastal Resilience activities within BIL and IRA**
- **Continued alignment of program activities across NOAA**
- **Interagency alignment...towards coasts.gov**
- **Maturation of Private Sector engagement**
- **Congressional Outreach**



Thank You!



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