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# **NOAA Response to the ESMWG Report on a *Rapidly Changing Marine Environment***

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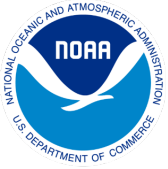
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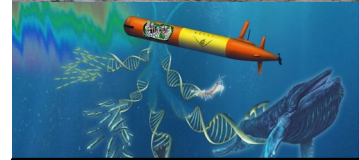
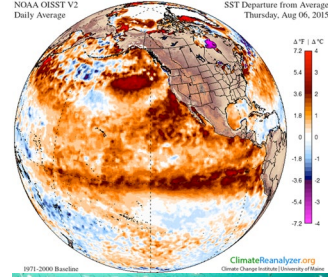
Director, National Sea Grant College Program, OAR

**1 August 2024**



# Outline

- Summary of Recommendation Response
- NOAA Actions in Response to Report
- Top Three Challenges and/or Opportunities with Implementation of Recommendations
- Path Forward & Future Engagement with the SAB





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# Summary of Recommendation Response

NOAA acknowledges the SAB/ESMWG for their thoughtful recommendations and advice regarding the evolution of NOAA's practices over the next decade to keep up with, and anticipate rapidly evolving future ocean states & the impact on ocean resources and communities.

NOAA is committed to:

- addressing ecological and multi-stressor **forecasting and developing modeling capabilities that provide actionable science advice** to resource managers,
- evolving ideas of **how social science will be used by NOAA in anticipating fisheries, ecosystems, restoration, and coastal risk management needs** and applying such information for effective adaptation approaches under rapid system change, and
- **incorporating collaborative, or participatory science, in the co-design and co-production** in NOAA's scientific programs and decision making.



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# NOAA Actions in... forecasting and developing modeling capabilities that provide actionable science advice

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NOAA is investing in CEFI (the Climate, Ecosystems, and Fisheries Initiative) to provide climate-informed advice for marine resource management and community adaptation.

It builds on past NOAA investments in research, modeling, and decision-making and is an end-to-end decision support system to address four requirements:

1. **Reliable delivery** of robust ocean forecasts and projections.
2. **Operational production** of climate-informed advice (*ecological outlooks, risk assessments, management & adaptation strategies*).
3. **Increased capacity** for climate-informed decision-making.
4. **Research & observations** for validation & innovation.

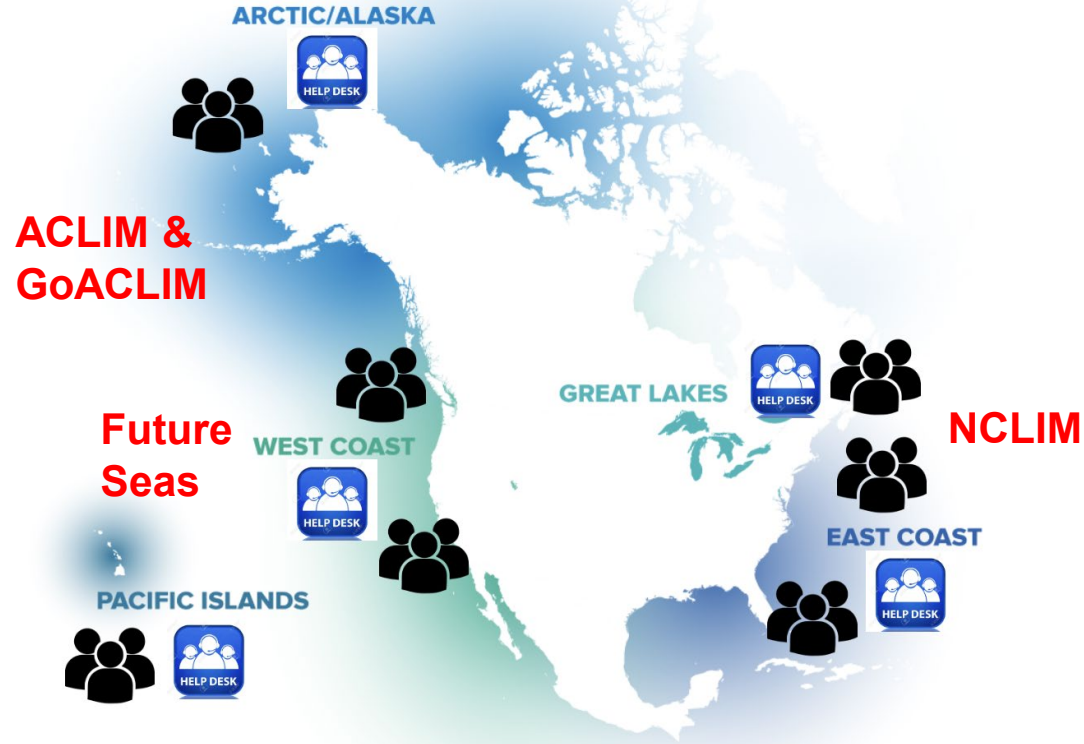


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# CEFI Regional Teams

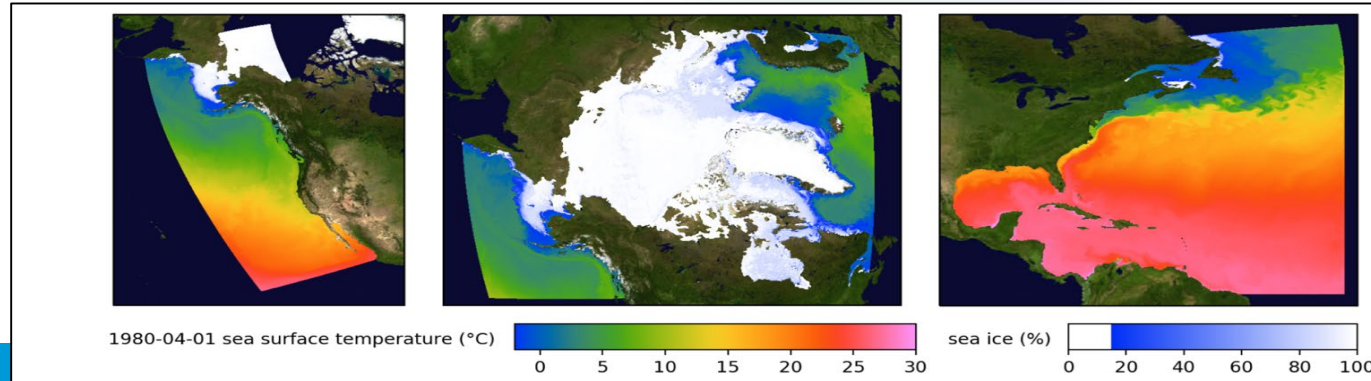
## Regional Ocean Modeling Teams

Customize MOM6 regional ocean outlooks for Decision Support Teams & other users



## Regional Decision Support Teams

Produce socio-ecological outlooks, information & advice for decision makers





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# NOAA Actions in...

how social science will be used by NOAA in anticipating fisheries, ecosystems, restoration, and coastal risk management needs

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- NOAA utilizes a suite of social sciences disciplines: sociology, anthropology, demography, geography, economics, & political science. NOAA **Social Science capacity increased** by efficient use & leveraging grant programs, contracts, cooperative science centers & cooperative institutes. NOAA assesses & communicate risk while reducing vulnerability to changing environmental conditions.
- Coupling **traditional and emerging social data collection methods to define & model human behavior** to inform marine & coastal resources management & to increase resilience of coastal communities.
- Expanding **Community Vulnerability Assessment Portfolio** in regions & communities by co-production with local partners & their stakeholders to assess community climate vulnerability (e.g., social vulnerability, flood hazard). Assessments identify the co-occurrence of hazard exposure with socioeconomic, structural, and geographic vulnerability.



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# NOAA Actions in... incorporating collaborative, or participatory science, in the co-design and co-production

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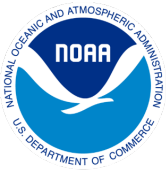
- NOAA currently has **numerous programs and line offices that engage in place-based community engagement**, that can provide a strong base of community connection, engagement and trust.
- Advancing engagement and co-production priorities requires a broad and blended approach that includes providing core personnel to connect with NOAA scientists and also **enhance the number of engagement professionals** working in the field in NOAA laboratories and place-based partners such as Sea Grant, NERRS and Cooperative Institutes.
- Lesser-resourced and lesser-experienced **partners must be included in all portions** of multi-institutional proposals and engagement. NOAA will continue to employ 'wrap-around services', focused symposia, and reporting excellence) that will assist in building true engagement from the beginning of a project, that it can be successfully carried forward.



# Challenges *and* Opportunities

1. The buildout and maintenance of CEFI Decision Support System in each region must **include sustained engagement and co-production of climate-informed decisions** and be resourced to be operational over the next three years.
2. **Increase capacity in the social sciences to must occur** to rapidly advance integrated natural & social sciences to address climate impacts on ecosystems and coastal communities and include increased use of technologies to collect human use behavioral information for enhanced ecosystem assessments.
3. Increase community engagement capacity and **adoption of co-production practices should be adopted more fully across line offices**, programs and laboratories in order to effectively engage and work with impacted communities to improve outcomes.





# Path Forward & Future SAB Engagement

## NOAA is committed to:

- Addressing ecological & multi-stressor forecasting & **developing modeling capabilities that provide actionable science** advice.
- Advancing ideas of how **social science will be applied** in changing fisheries, ecosystems, restoration, & coastal risk management needs for effective adaptation approaches under rapid system change.
- **Incorporating collaborative, or participatory science**, in the co-design and co-production in NOAA's scientific programs and decision making.
- **Address actions defined in the NOAA Equitable Climate Action Plan**: 5 strategic priorities
- Provide **periodic updates to the SAB** and its Workgroups on actions addressing the RCME recommendations.



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**Thank you**

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