

# SUCCESSFUL ADAPTATION INDICATORS & METRICS

A special focus area of the National Estuarine Research Reserve System's Science Collaborative

Status January 2017

## THE WORK TO DATE

Since early 2015, the Successful Adaptation Indicators and Metric (SAIM) Project has become a flagship activity of the NERRS Science Collaborative. It aims to support reserves around the country that actively work on climate change adaptation.

Accomplishments to date:

- Brief introduction during the Science Collaborative's intro webinars
- 2 webinars specifically focused on the SAIM project
- Invitation and selection of interested reserves
  - 2 cohorts (to date)
    - Wells, Tijuana, Hudson
    - Cousteau, Kachemak Bay
    - Observer reserves
- Workshops at each of the five reserves
- Annual meeting interactions and professional sharing session
- 1 peer-reviewed publication, 2<sup>nd</sup> under development
- Presentations to interested parties beyond the NERRS

### Hudson River NERR workshop, 09/15



SAIM workshop participants developed community-specific visions of successful adaptation to climate change along the Hudson River and began identifying some meaningful indicators to track progress toward their common goals.

Photo: Susi Moser

## PROJECT OVERVIEW

How do we know whether adaptation to climate variability and change is occurring, and whether the adaptive actions taken are good, useful, and effective? For how long, and for whom, does adaptation “work”? And because the ultimate desired outcome of climate change adaptation may not be apparent for many years and environmental conditions continue to change, how do we assess progress? This project aims to assist the National Estuarine Research Reserve System and the communities they serve to address these challenging questions.

In the face of escalating impacts from climate change, the question of adaptation success is increasingly a practical and moral imperative. Policy- and decision-makers at any level (and the staff assisting them) need an answer because of their legitimate concerns over the long-term safety, prosperity, equity, and sustainability of their communities. Yet, it is also a very difficult question to answer.

Using highly interactive workshops to launch a tailored process in each site, this project works in a collaborative manner with individual reserves and their stakeholders to explore (1) what adaptation success means in different locations, (2) what the relevant dimensions are that need to be considered in moving toward success, and (3) how a manageable approach can be set up to track progress toward a common vision and guide coastal managers to succeed in protecting the nation's valuable coastal habitats, resources and human communities in the face of climate change. Insights gained from each effort are then compared and shared among reserves for larger lessons.

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*“If we want resiliency, we need to decide together what’s important to us.”*

*(Workshop Participant, Homer, AK)*

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## OBJECTIVES OF THE SAIM PROJECT

### 1. OVERARCHING NERRS-FOCUSED OBJECTIVE: HELP RESERVES

- Define “success” for their own purposes
- Develop useful, impactful indicators and metrics to track progress (along adaptation pathways)
- Learn from other reserves (using a multiple-site, comparative approach)

### 2. OVERARCHING BROADER OBJECTIVE: CONTRIBUTE TO SCIENTIFIC AND POLICY DEBATES

- Share lessons with regional partners, other reserves, coastal scientists and managers faced with similar challenges
- Contribute to national indicator system



## CO-DESIGNING A SITE-SPECIFIC APPROACH

The approach to defining indicators and metrics of successful adaptation is always co-designed by project leads and reserve leads to ensure fit with local needs and priorities.



### Wells Reserve (Maine) – “Tracking Progress: Better Safe Than Sorry”

In 2015, the Wells Reserve brought together 10 southern Maine communities to ascertain what each is doing to date to prepare for more extreme events like Hurricane Irene and Sandy and longer term changes in climate. Since then, reserve leads are tracking local communities’ adaptation-related actions and share results with community planning staff at annual follow-up meetings. Tracking progress is helping everyone stay up to date and encouraging towns to do more to prepare for climate change, because... “it’s better to be safe than sorry.”



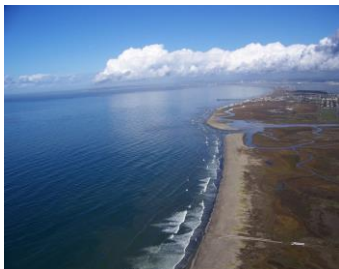
### Hudson River Reserve (New York) – “Identifying Indicators for Successful Adaptation to Climate Change in the Hudson River Valley”

Several villages and small towns in the Hudson River Valley experienced extensive damage from Hurricanes Irene and Sandy. This motivated them to get serious about adaptation planning. During that planning process, they developed community-specific visions of being resilient to further climate change. The SAIM workshop in September 2015 provided them with an opportunity to think more systematically about how to make those visions become reality, and how to track progress along the way.



### Jacques Cousteau Reserve (New Jersey) – “Preparing for Future Sandy’s: How Do We Know We Are More Resilient Now?”

Many New Jersey coastal communities took a hard hit in Sandy. The Jacques Cousteau Reserve worked closely with local communities to assess their resilience and develop plans of becoming better prepared. Meanwhile, state and federal agencies worked through hazard mitigation planning and the National Flood Insurance Program’s Community Rating System to encourage improvements. The SAIM workshop brought them together to assess what can be learned from these approaches about indicators and tracking progress.



### Tijuana River Reserve (California) – “Successful Climate Adaptation: Tijuana River Valley”

The reserve has been working with agencies and communities involved in River Valley planning to assess their vulnerabilities to climate change using scenario planning. During the SAIM workshop, regional stakeholders began visioning “success” in adapting to climate change. Then, agencies involved in Tijuana River Reserve management developed an initial set of indicators and metrics, which reserve leads eventually turned into a framework for performance measurement, now used in their ongoing work.



### Kachemak Bay Reserve (Alaska) – “Scenario Planning and Pathways to Successful Adaptation”

Homer and surrounding Kenia Peninsula are updating various local planning documents (Climate Action Plan, General Plan, Hazard Mitigation Plan). Reserve staff is helping them through trainings, technical assistance and providing a forum for in-depth discussion of their desired future. Through a sequence of workshops to date, local stakeholders learned about climate change adaptation, developed a vision of their desired future, and began exploring pathways toward greater resilience. Work on indicators begins in Spring 2017.

Photos (from top): S. Moser, J. Arnott, Wikimedia, Wikimedia, S. Moser

## FUTURE ACTIVITIES AND ADDITIONAL OUTPUTS

- Working with additional reserves to launch the process of defining successful adaptation indicators and metrics in 2017-19
- Scoping a proposed workshop across all participating and interested reserves focused on social indicators in 2018
- Developing a toolkit to share approaches, ideas, lessons learned
- Fostering of a community of practice among reserves and others interested in tracking adaptation progress and effectiveness
- Writing additional peer-reviewed publications
- Sharing of findings at conferences and with interested audiences

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