COLLABORATIVE SCIENCE FOR ESTUARIES

WEBINAR SERIES

Susi Moser

NERRS Science Collaborative

Kristen Goodrich

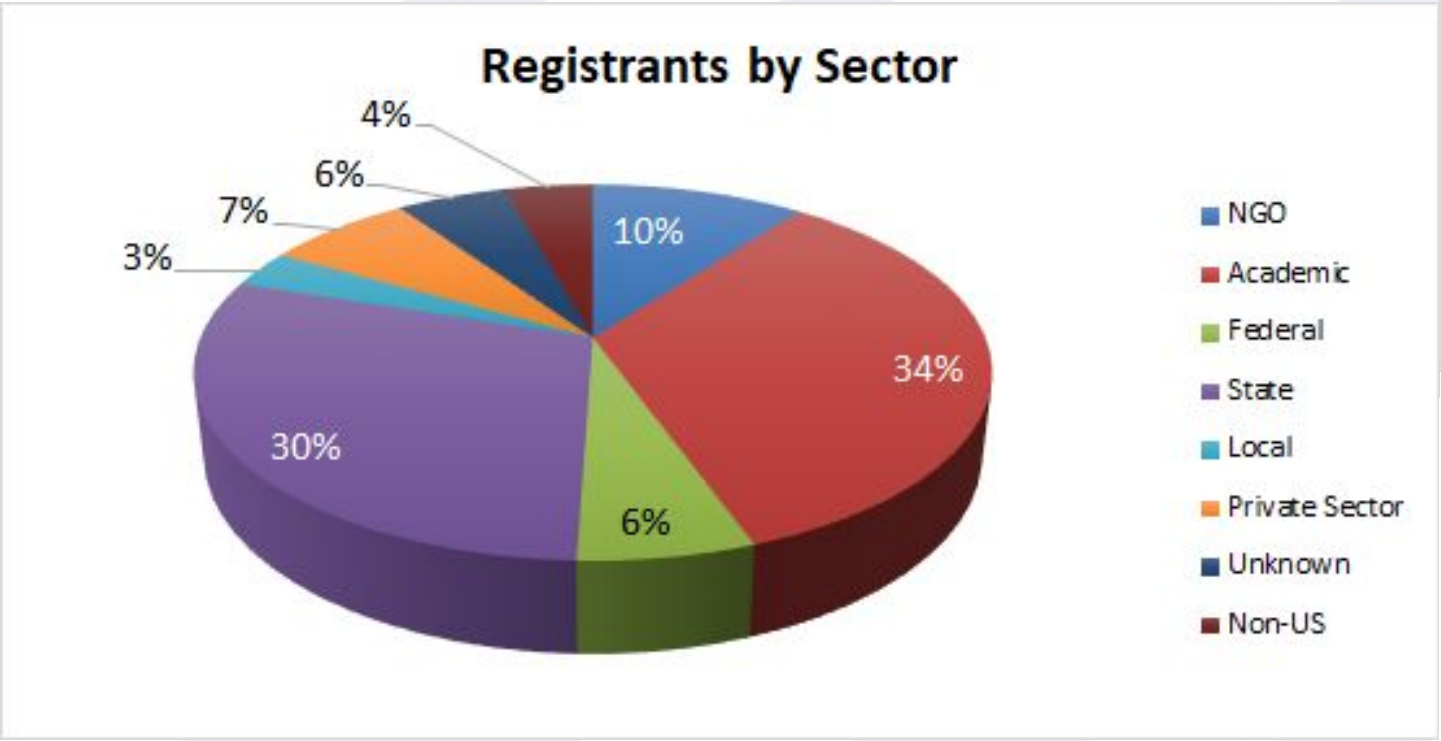
Tijuana River NERR, CA

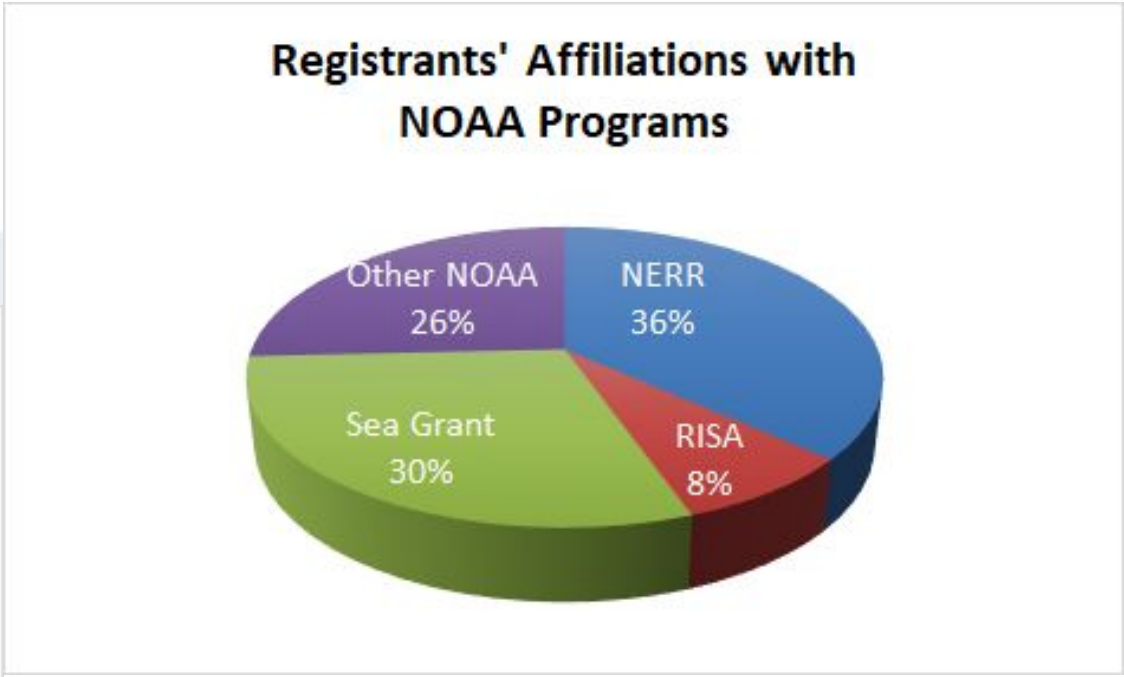
Measuring Climate Adaptation Success and Progress: System-wide Introduction to the Resilience Metrics Toolkit

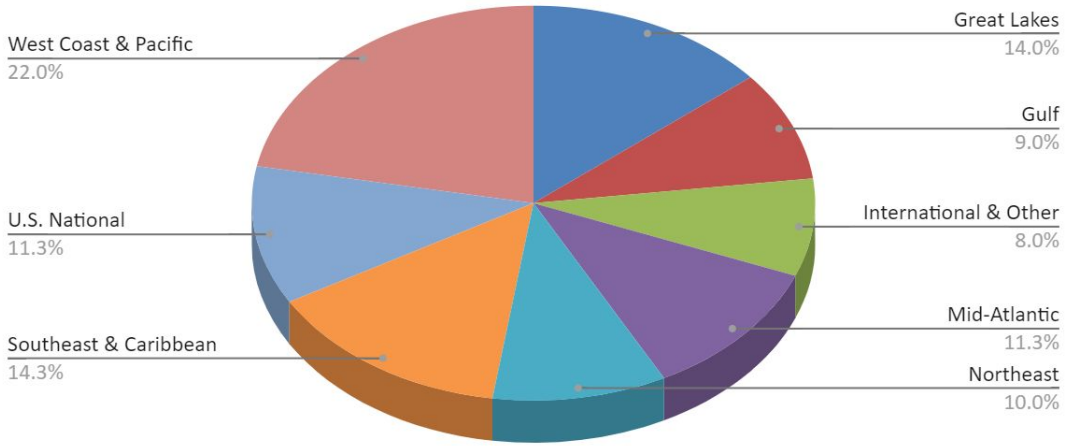
National Estuarine
Research Reserve System
Science Collaborative

Date: Wednesday, November 18, 2020
Time: 3PM ET – 4PM ET

Today's audience (by registration)







National Estuarine Research Reserve System Science Collaborative

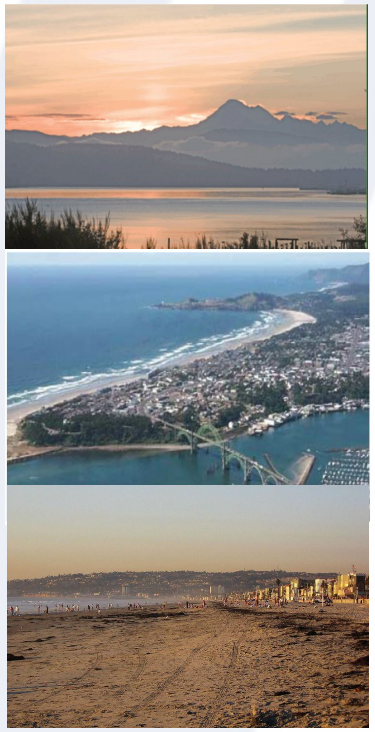
Webinar Instant Polling Results

Nick can you insert those results here, please.

Drawing on 4 Projects over 10 Years

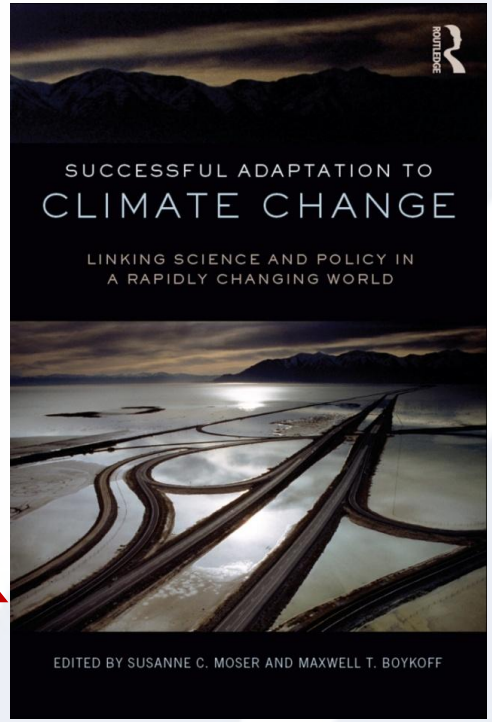
Identifying the Key Dimensions of Adaptation Success

Sea Grant
Washington
Oregon
California
University of Southern California

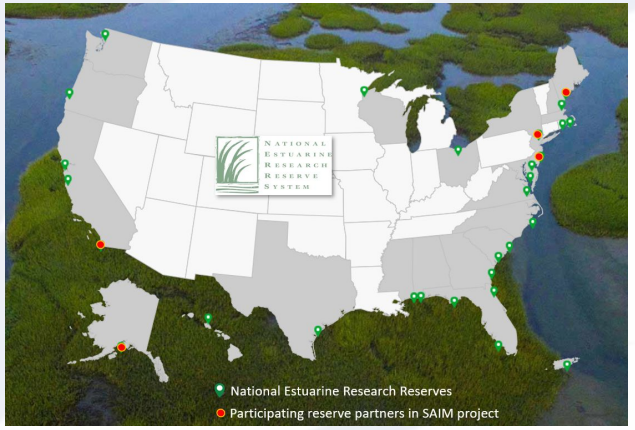


Book:

What do we know about successful adaptation?



SAIM Project with 5 Reserves: Indicators & Metrics

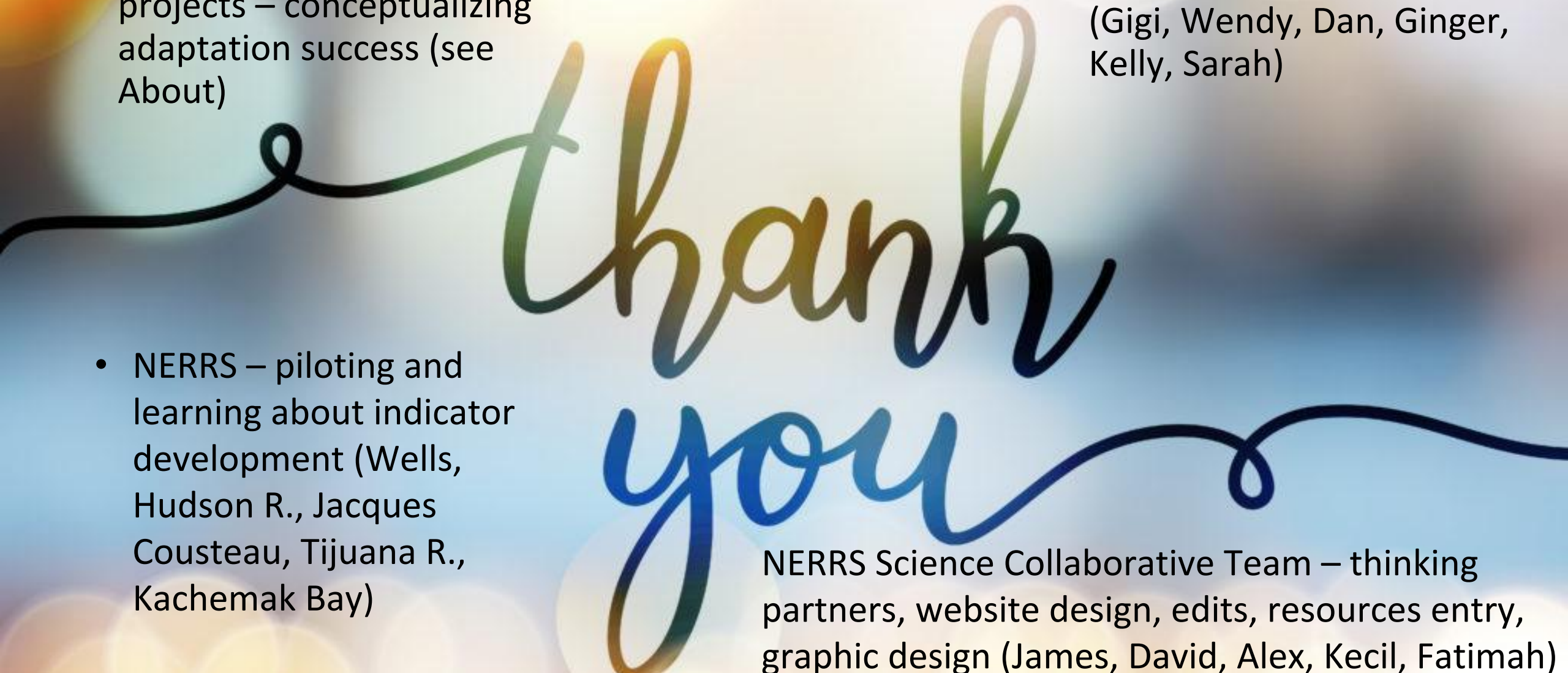


- **Wells**
- **Hudson**
- **Jacques Cousteau**
- **Tijuana River**
- **Kachemak Bay**

Catalyst project: Toolkit Development

Resilience Metrics

- NOAA – funding (for all underlying projects)
- All participants in prior projects – conceptualizing adaptation success (see About)
- Testers of the beta versions of www.resiliencemetrics.org
- Those providing testimonials (Gigi, Wendy, Dan, Ginger, Kelly, Sarah)



- NERRS – piloting and learning about indicator development (Wells, Hudson R., Jacques Cousteau, Tijuana R., Kachemak Bay)

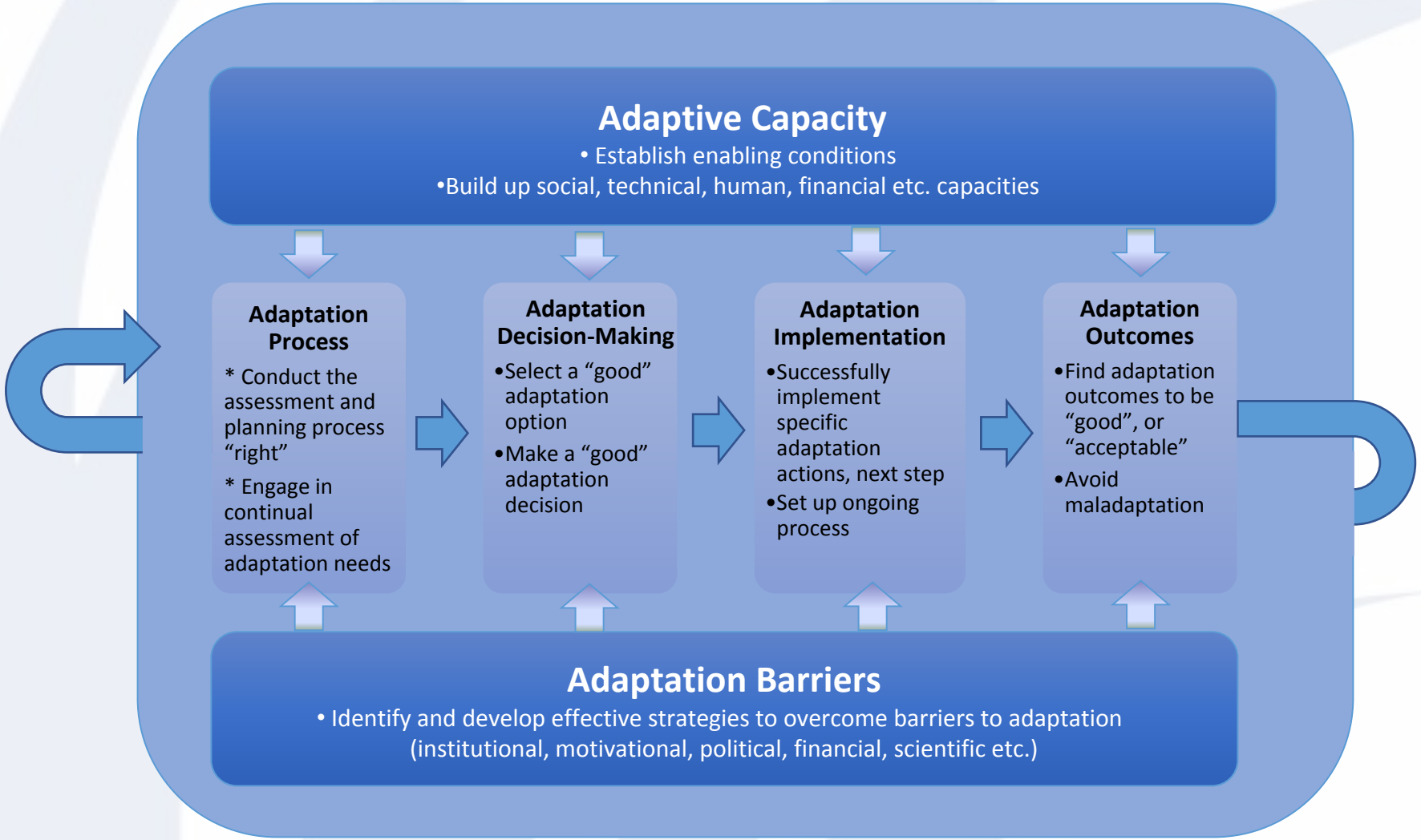
NERRS Science Collaborative Team – thinking partners, website design, edits, resources entry, graphic design (James, David, Alex, Kecil, Fatimah)

Why Think About Adaptation Success? - Why Measure Progress?

Overarching: Responsibility for safeguarding people, economy, infrastructure, cultural assets, environment

1. **Communication and public engagement**
   - Communicating hope and desirable goal to work towards
   - Defining a common vision among diverse stakeholders
2. **Deliberate planning and decision-making**
   - Setting clear goals, aligning means and ends (internal consistency)
   - Best fit with other policy goals (external consistency)
3. **Justification of adaptation expenditures**
4. **Accountability/good governance**
5. **Support for learning and adaptive management**

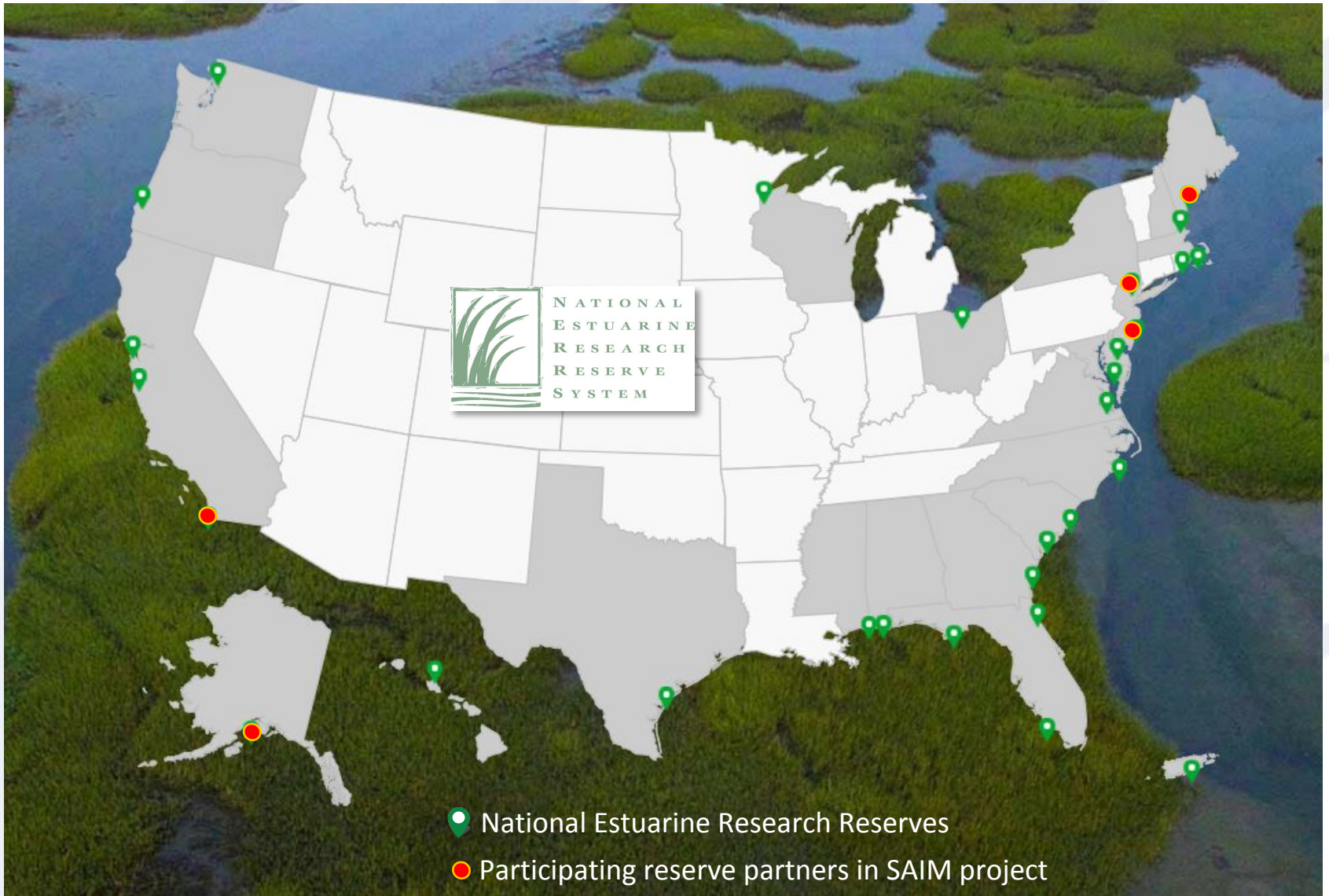
Six Key Dimensions of Adaptation Success



Source: Moser et al.

The SAIM Project: INDICATORS FROM THE BOTTOM UP

Working with the National Estuarine Research Reserve System



Wells

Hudson River

Jacques Cousteau

Tijuana River

Kachemak Bay

Goals of Toolkit

- **Integrate, share and embody insights and lessons learned from all prior projects**

- **Provide lots of tools, job aids and resources to make it as easy as possible**
  - Assume various levels of expertise/experience
  - Entry from many different angles
  - Provide resources, case studies, indicator examples

- **Highlight work of NERRS but make toolkit applicable to all contexts** (coastal and non-coastal)

INPUT INTO DESIGN

- Professional sharing sessions at NERRS Annual Meeting
- Sessions with NERRS CTPCs
- Social Coast Forum 2018
- National Adaptation Forum 2018
- RAE 2018
- Feedback on beta version (NERRS Annual Meeting, Social Coast Forum 2020, RISA teams, etc.)

https://resiliencemetrics.org

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Welcome to Resilience Metrics!

Welcome to *Resilience in the Face of Climate Change: Envisioning Success - Measuring Progress*!

The information, tools, and resources offered here aim to be helpful to those who have embarked on the journey of addressing the challenges related to extreme climatic and weather events and changing environmental conditions.

If you are interested in preparedness, adaptation, and resilience-building for a changing climate, you are in the right place.

If you are wondering what "adaptation success" looks like and how you might track your progress toward it, we offer ways to think about that and tools to help you find tailored answers.

> **Our focus is on defining and tracking adaptation success and progress.**

For those interested in other adaptation-related topics and challenges, we point to related sites and tools along the way.

If you are ready to jump directly into working with indicators, click on the relevant icons. If you're not sure where to begin or find what you need, check out this **list of diagnostic questions, start at the Getting Started page** or take our **diagnostic quiz** to find your entry point.

If you are ready to jump in on the work of developing and using indicators and metrics, you can directly go here:

- Bounding and Assessing Context
- Visioning Success
- Exploring & Identifying Indicators
- Selecting Indicators & Identifying Metrics
- Tracking Indicators & Metrics
- Using Indicators & Metrics

What You'll Find

Photo: chanellife.com.au

- **Basic introduction/overview**
  - Adaptation and resilience
  - Adaptation success
  - Evaluation
  - Indicators and metrics
- **Resources**
  - Our own work
    - Facilitation Guides, Job Aids, Case examples, Publications, Webinars, sample lists of indicators
  - Others' work
    - Publications, Websites, Data sources
- **Examples of what developing indicators and metrics looks like**
  - Coastal regions (Maine, New Jersey, New York, S. California, Alaska)
- **Testimonials**
- **Background information**
- **Contact information to get/give help**

No Wrong Door:
Where to start? What to find where?

1. Explore via drop-down menus (hyperlinks throughout text)
2. Navigate by always-present side menu
3. Jump right to indicator development/ use via indicator icons
4. Use "Getting started" page
5. Work through interactive tool ("Quiz")
6. Click on various overview Job Aids:
   - Diagnostic Questions (simplified version of interactive diagnostic tool)
   - 2-page overview of tools, job aids, and case studies available on this site
7. Search at the Resources page: by topic, sector, type of resources, key words
8. Search any page using the Search bar
9. Dip in randomly and discover
10. *Brief "orientation video" (to come)*

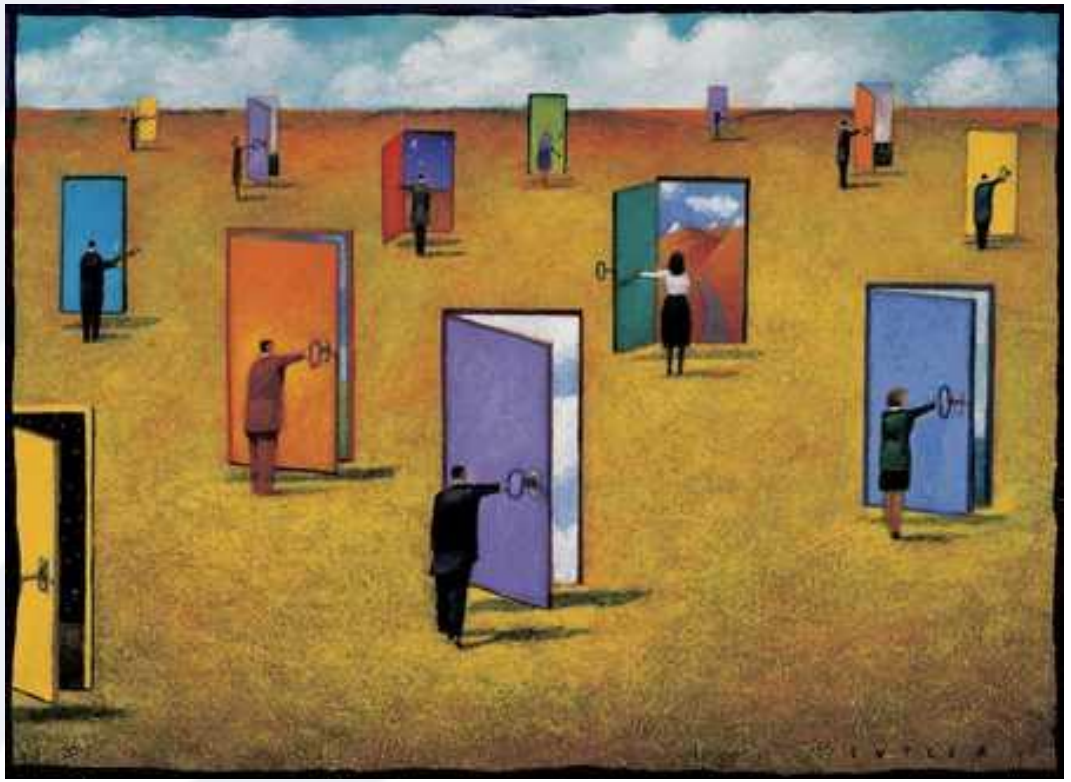

Image: illustrationsource.com

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- Quiz
- The Need for a Common Understanding
- Terminology
- Climate Adaptation Basics
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- Offering Help

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etting Started

design of this website was guided by the principle of "no wrong door." can start exploring the resources on any page that sparks your interest.

ere to Start?

our diagnostic quiz to find good entry points.

gin Quiz

vigating this Site

ideal starting point depends on several variables: your familiarity with ate adaptation, your stage in the adaptation process, and your specific ds, constraints, and circumstances. Here is some additional guidance

If you are new to adaptation, you will find resources across the site that will deepen your understanding of resilience metrics and prepare you to start thinking about metrics of your own. We recommend you follow this path:

- First visit Climate Adaptation Basics
- Next visit Terminology
- Then explore Key Dimensions of Adaptation Success
- Finally, visit the Indicators & Metrics section

If you are thinking for the first time about how to measure progress and define success, you will find information that illuminates the many dimensions of progress, effectiveness, and success. We recommend you follow this path:

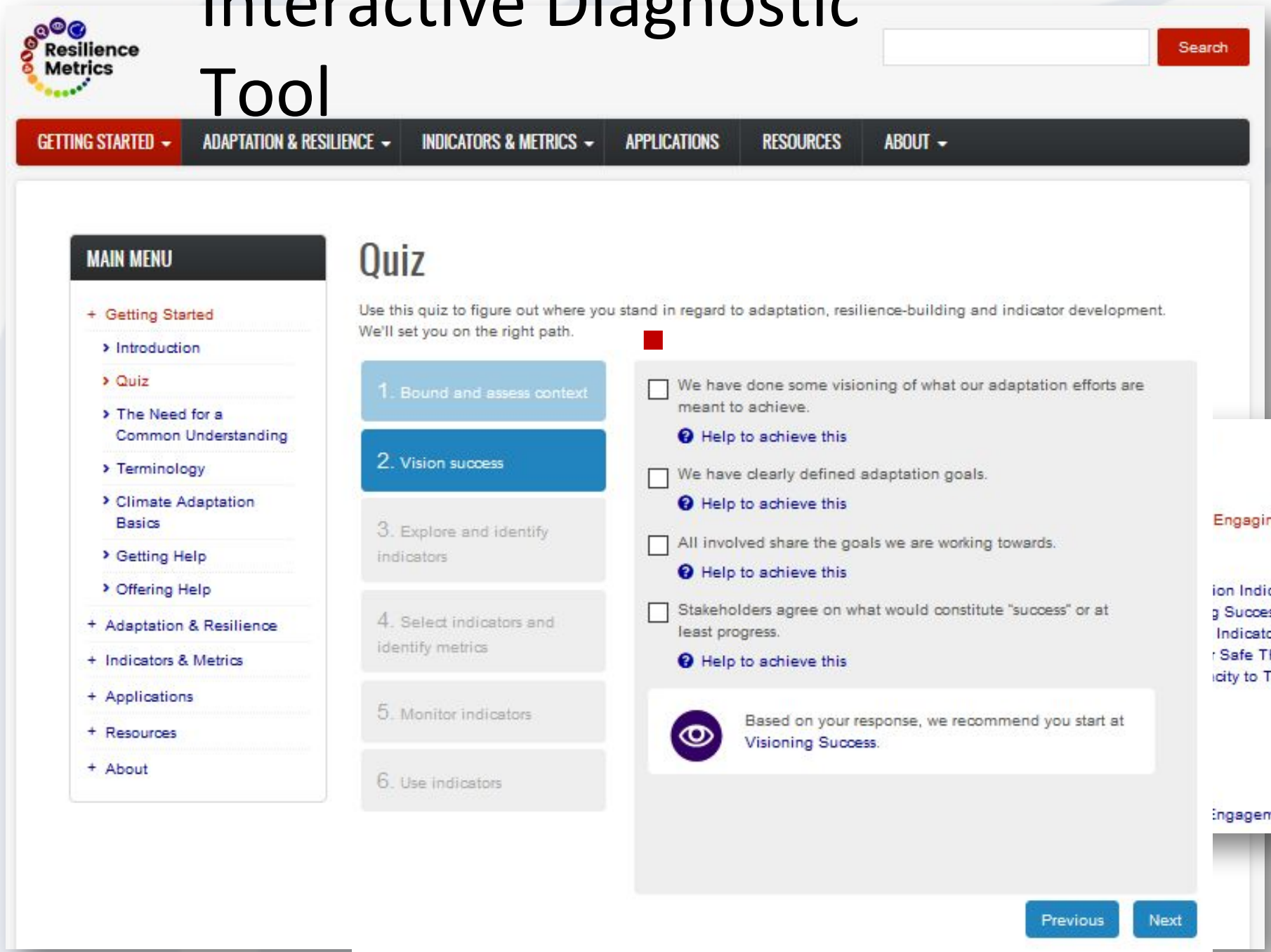
- First visit Why Think About Adaptation Success?
- Next visit Key Dimensions of Adaptation Success
- Then explore the Indicators & Metrics section
- Finally, visit the Resource Library for tools, job aids, and case studies to support your work and check out the ways different entities have approached this work.

If you are experienced in adaptation and familiar with the basics of evaluation, the Indicators & Metrics section offers a step-by-step guide to help you identify meaningful indicators and metrics. Additionally, you

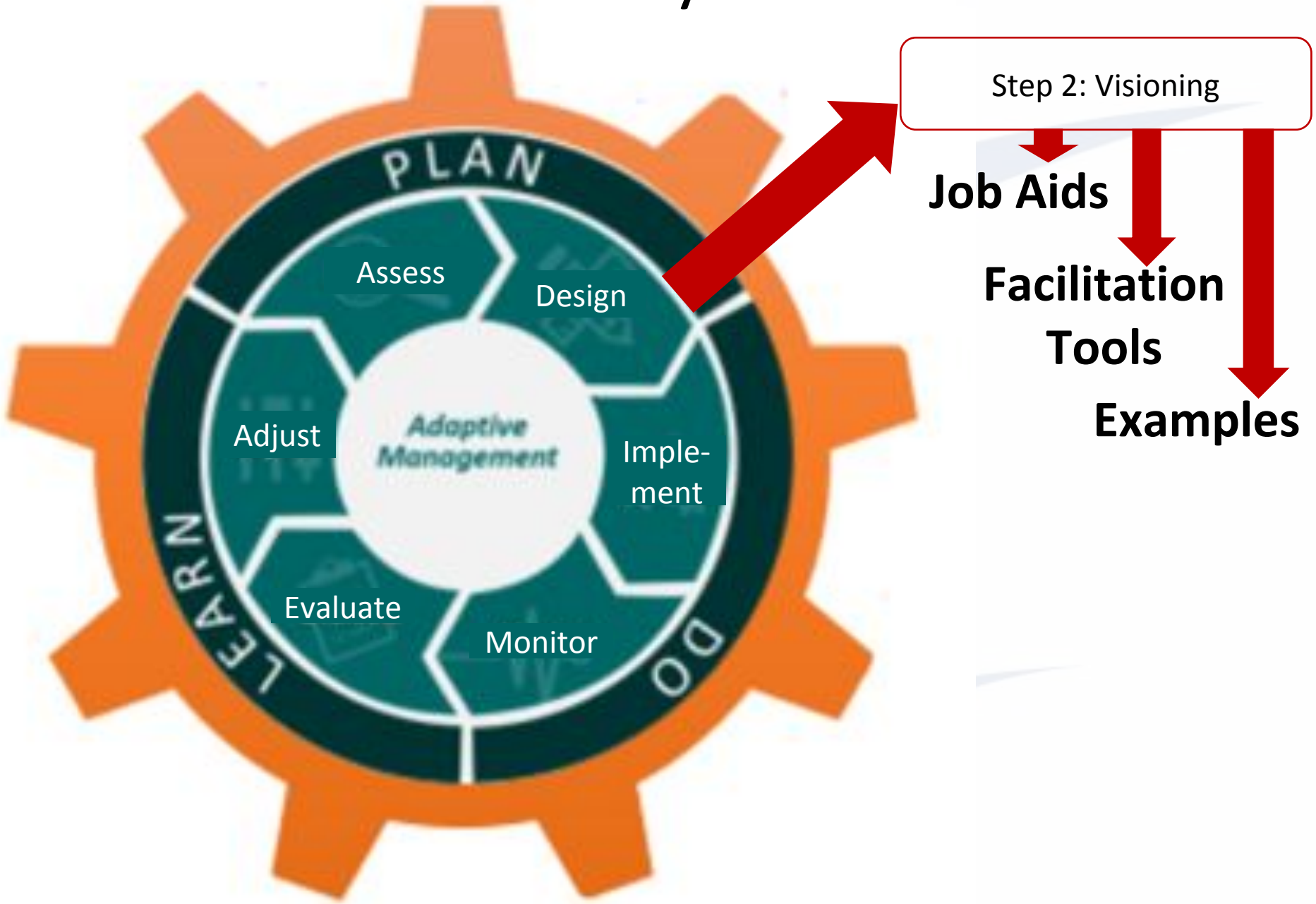
"Resilience Metrics is the "cliff notes" version of adaptation basics. It's put together concisely, with a lot of depth, and it's not overwhelming. When I work with communities, I can use this to help people think about success from the beginning, which is key. They can see the big picture rather than get lost in the weeds."

Sarah Watson
Coastal Climate and Resilience Specialist
South Carolina Sea Grant Consortium & Carolinas Integrated Sciences and Assessments

Interactive Diagnostic Tool



Start from wherever you are



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Adaptation & Resilience

Why and How to Approach These Topics

To those on the front lines of climate change adaptation and resilience-building, success may seem elusive. There is always more that could be done, never adequate resources. It is a huge and unwieldy responsibility.

The advice in this section will help you understand why and how to think

- Communication and public engagement
- Deliberate planning and decision-making
- Justification of adaptation expenditures
- Accountability and good governance

anagement

- Adaptation process
- Adaptation decision-making
- Adaptation actions
- Building adaptive capacity
- Overcoming adaptation barriers
- Adaptation outcomes

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Indicators & Metrics

Users of this site come from a variety of professions and have a wide range of backgrounds, training, practices, resources, and industry standards. Please use the tools offered here to complement your context-specific resources, approaches and processes. We hope they help you build your capacity.

- **Overview of tools, job aids, and case studies available here**

Whether you are a…

- Planner
- Natural resources manager
- Engineer
- Business supply-chain manager

"I recently began new collaborative research about building a more resilient

Six Key Steps in the Process of Indicator Development & Use

The purpose and key considerations for each step in the process of indicator development and use are described below. Users can read them all in sequence or click on the relevant links of interest for their current work:

- Bounding and Assessing Context
- Visioning Success
- Exploring & Identifying Indicators & Metrics
- Selecting Indicators & Metrics
- Monitoring Indicators & Metrics
- Using Indicators & Metrics

that exist.

- ***Planning:*** This phase includes developing goals and specific objectives, as well as determining alternative ways to reach those goals.
- ***Implementation:*** This phase includes making decisions, obtaining financial, political, and public support, and implementing the plan.

Research Scientist
Climate Assessment for the Southwest

Step-by-step explanation and guidance through the process

Do-it-yourself facilitation tools, job aids, resources

Case examples: How we did it

Lists of indicators

Resilience Metrics

Job Aid: Sample Indicators and Metrics of Adaptation Success and Progress: Social Aspects

This list constitutes a sample of possible indicators and metrics that point to climate adaptation success and/or progress. It is derived from work with communities in Maine, New York, New Jersey, California and Alaska. For a larger list of indicators and possible metrics brainstormed by these communities, look for a searchable Excel spreadsheet in the Resources section of www.resiliencemetrics.org, called "SAIM Project_Indicator Brainstorm_all.xlsx" (status January 2020). Indicators can be searched by adaptation strategy, location, sector, or the six dimensions of adaptation success described at www.resiliencemetrics.org. This list is not refined, ranked or vetted by any scientific or governance entity although some indicators are in use. The list is solely offered to support other users' creative thinking and brainstorming of indicators/metrics that suit their unique situations.

Strategy	Indicator	Metrics	Dimension of Success					
Build capacity of stakeholders to carry out specific adaptation-related tasks	Adaptive capacity	Degree of learning (self-assessed, post training survey); intention to use learned knowledge/ skills (expressed; post-training survey); frequency of training commensurate with rate of staff turn-over		x				
Improve pace and completeness of disaster recovery	Availability of sufficient emergency shelters	# and type of shelters used/not needed for speedy recovery (e.g., use of schools can delay recovery); # of shelter spaces			x		x	
Raise awareness about flood risks and response options	Awareness of flood response options	% of HH that received information on how to build resilience; attendance of public meetings on adaptation planning; # of surveyed residents who are aware of risks and response options		x			x	
Increase community disaster preparedness	Community preparedness	# of participants in emergency preparedness trainings		x			x	
Maintain adaptation efforts (even after/in absence of another extreme event)	Complacency (or absence of)	Stable/declining # of actively maintained flood insurance policies; declining outreach efforts; downgraded priority of adaptation actions (rankings on agenda of city council)			x		x	
Develop adaptation strategies for Reserve/ ecosystems that are sensitive to cultural preservation needs/ access by Native Americans	Culture-sensitive adaptation planning	Cultural group interested in working with ecological group (yes // no // emerging); significant archeological sites are being protected; # of adaptation design meetings attended by Cultural Resources specialist; cultural resources stewardship program developed (yes // no // in progress)	x	x		x	x	

This job aid was created to serve as a reference for individuals interested in indicators and metrics to help communities define and track progress on their climate adaptation goals. Additional background and resources are available on the website: www.ResilienceMetrics.org. This website was developed in partnership with the National Estuarine Research Reserve System with funding from NOAA.

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Applications

Indicator Development & Use in the Real World

This website offers indicator development tools and lessons learned that stem from specific, real-world examples of adaptation. Researchers and practitioners worked closely in thinking about adaptation success and progress and developing locally relevant indicators and metrics. If you wish to learn more about each of these case examples, you will find the following for each:

- Facilitation agendas
- Workshop agendas
- Facilitation slides
- Workshop hand-outs (if applicable)
- A brief write-up of the case study
- Facilitation tools and job aids developed from that case
- Contact information for local leads

As we collaborate with others in other geographies and sectors over time, we will add those examples here, so you can continue to learn from these applications of adaptation indicator development and use.

For case examples of working with various reserves of the National Estuarine Research Reserve System, click here.

"I really recommend diving into the Resilience Metrics website! Whether you are just starting to deal with climate adaptation, or are a seasoned pro, you'll find useful resources to help you with your work in this area."

Dan Brumbaugh
Coastal Training Program Coordinator
Elkhorn Slough NERR

Supported by NOAA Programs

Resilience Metrics is the cumulative result of more than 10 years of collaborative research, involving a wide range of experts, decision-makers and stakeholders from across the US. The underlying projects were led by Dr. Susanne Moser and supported in significant ways by various programs of the National Oceanic and Atmospheric Administration (NOAA). For more information see Funding, Support and Teams. This website was created with lead input from the National Estuarine Research Reserve System (NERRS) and designed by the NERRS Science Collaborative.

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Wells (Maine)

The Wells Reserve in southern Maine is surrounded by 10 communities in various stages of adaptation. The Successful Adaptation Indicators and Metrics (SAIM) project with the Wells Reserve was placed in the context of an ongoing workshop series the reserve's Coastal Training Program is hosting every year to learn about coastal managers' needs and actively support them in their efforts.

The SAIM workshop with local stakeholders took place in June 2015.

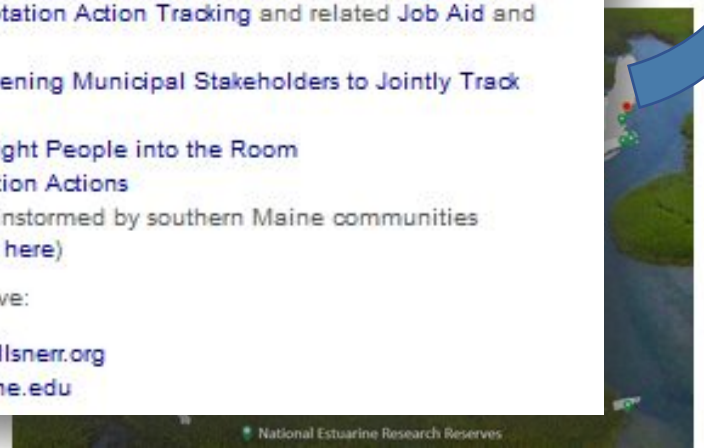
All workshop materials and resources produced with colleagues at Wells can be accessed here:

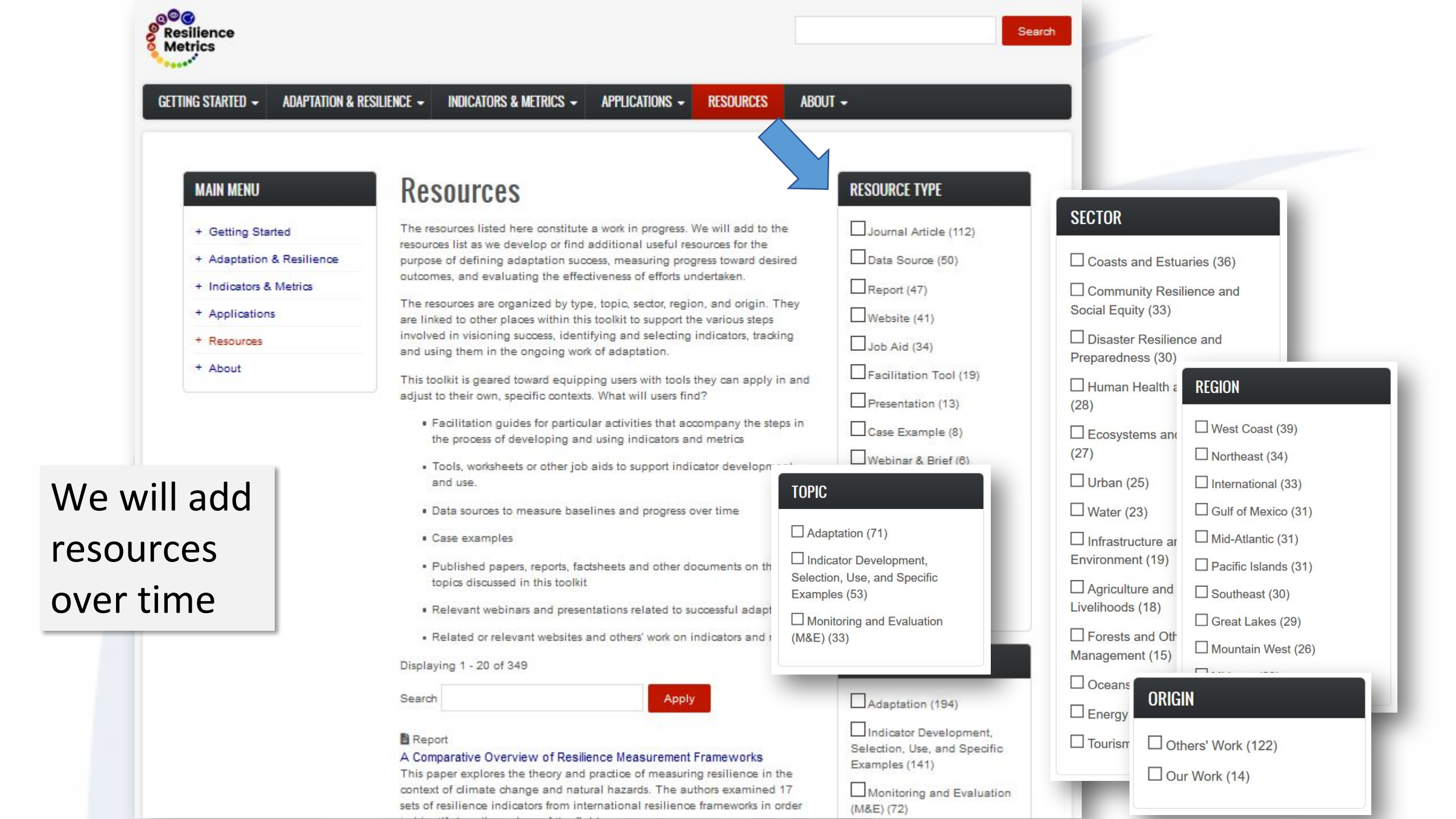
- Workshop slides: Better Safe Than Sorry Introduction and Facilitation slide deck
- Facilitation Agenda and Public Agenda
- Case study
- Facilitation Tool: Adaptation Action Tracking and related Job Aid and Hand-out
- Facilitation Tool: Convening Municipal Stakeholders to Jointly Track Adaptation Actions
- Job Aid: Getting the Right People into the Room
- Job Aid: Good Adaptation Actions
- Job Aid: Indicators brainstormed by southern Maine communities (select the WNERR tab here)

Lead contacts at Wells Reserve:

- Annie Cox – acox@wellsnerr.org
- Chris Fuert – cfeurt@une.edu

To inform adaptation with broad-based expertise, leaders can benefit greatly from building strong working relationships with climate, environmental, and human system experts as well as with community members for in-depth context knowledge. Photo: Susi Moser





We will add resources over time

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About this Project

Resilience Metrics aims to answer several critical questions that many planners, resource managers, resilience officers, and adaptation practitioners ask:

- What is successful adaptation to climate change?
- How do we get there?
- How do we know if we're moving in the right direction?
- How do we track progress toward resilience goals?
- How do we measure "success"?

This website offers a user-friendly guide through these challenging questions. You will find tools to help you arrive at answers that fit your local context.

Rather than imposing a single vision of success and standardized set of indicators and metrics on any sector, region, or community, the tools on this site can be applied in contextualized ways to the unique circumstances in which users work. In addition, this toolkit offers resources, job aids, and links to others who are also working on these questions.

Several projects —each building on insights gained from those that came before it—have informed this website. Each was driven by our dual commitment to rigorous science and meeting users' needs. The underlying work was, in important ways, co-designed by practitioners and researchers to ensure that resilience-building and progress-tracking are informed by the best available science and aligned with the realities of working on adaptation on the ground.

As research continues, experience with using these tools accumulates, and further helpful resources are identified, we will add to this toolkit over time.

"From National Adaptation Plans to local adaptation initiatives, there is growing recognition that measuring progress towards defined adaptation goals accelerates learning, enables course corrections, and improves outcomes. The Resilience Metrics website synthesizes the "state of the knowledge" on evaluation science as it has been applied to climate adaptation and community resilience. I highly recommend it to governments and community groups alike, as a comprehensive toolkit for designing adaptation metrics tailored to place-specific resiliency goals."

Wendy Miles, PhD
Fellow, East-West Center
Program Manager, Pacific RISA

Tijuana River
National Estuarine Research Reserve

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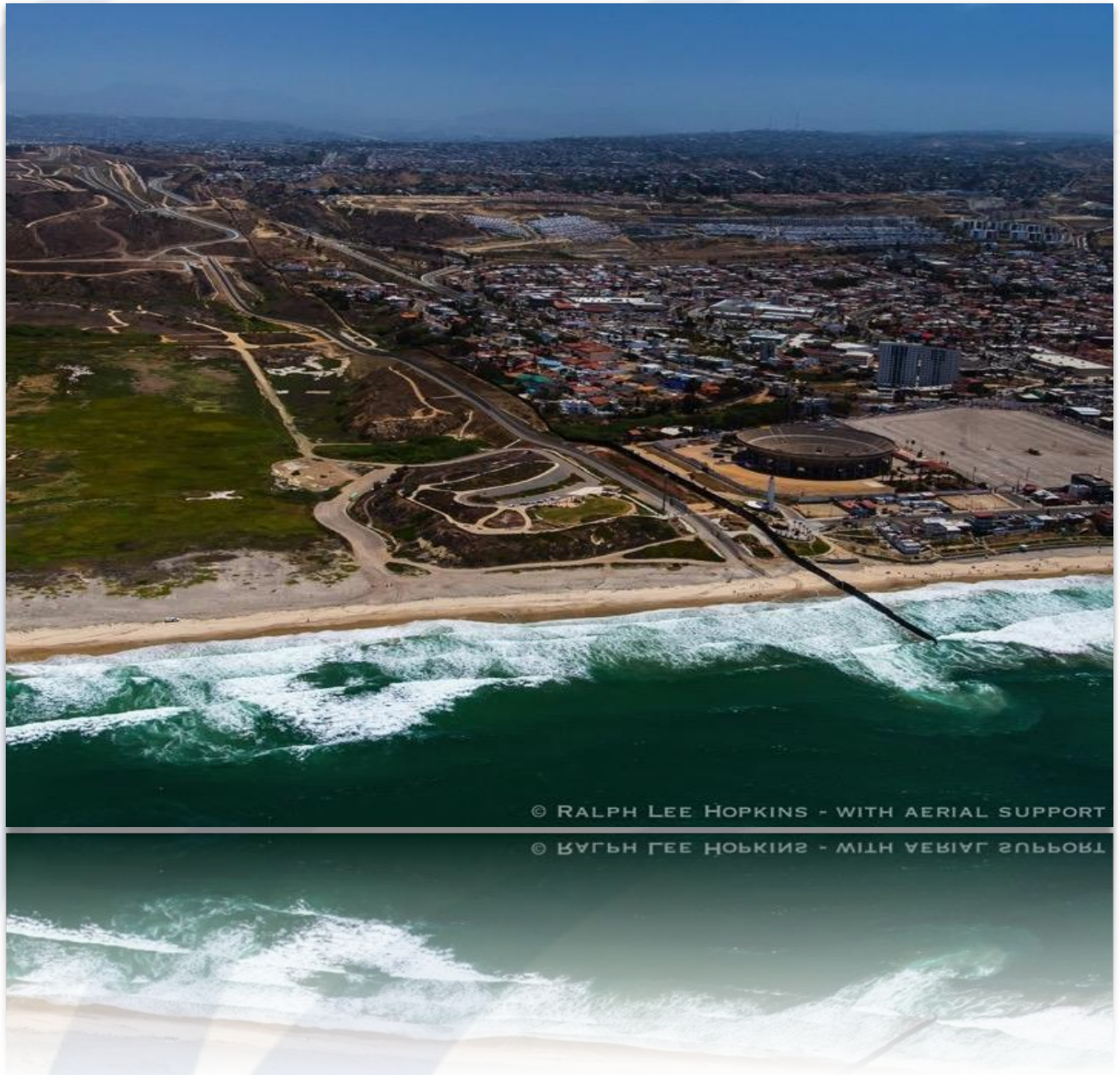

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- Bounding and Assessing Context
- Visioning Success
- **Exploring & Identifying Indicators**
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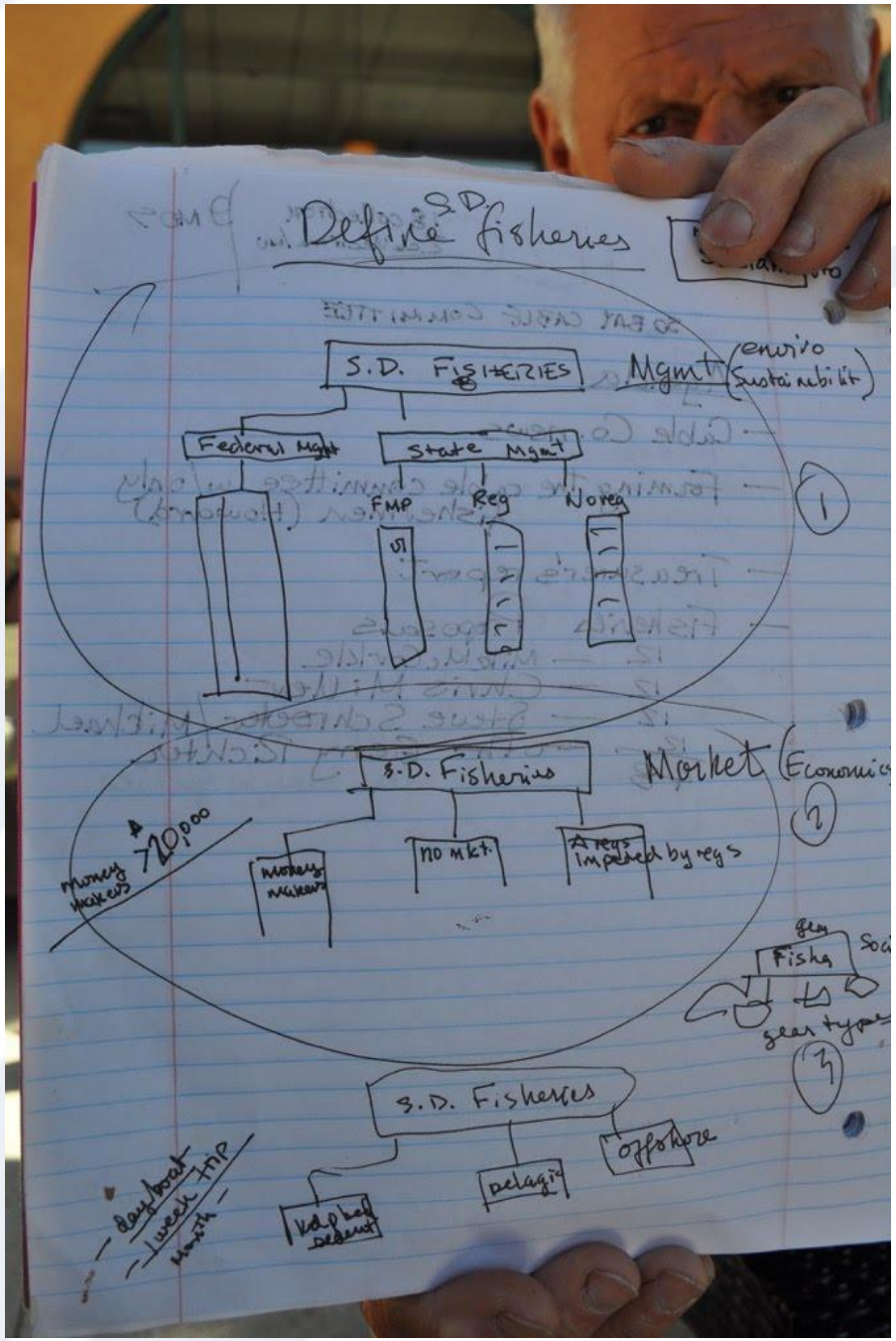

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- Tracking Indicators & Metrics
- Using Indicators & Metrics

- Bounding and Assessing Context
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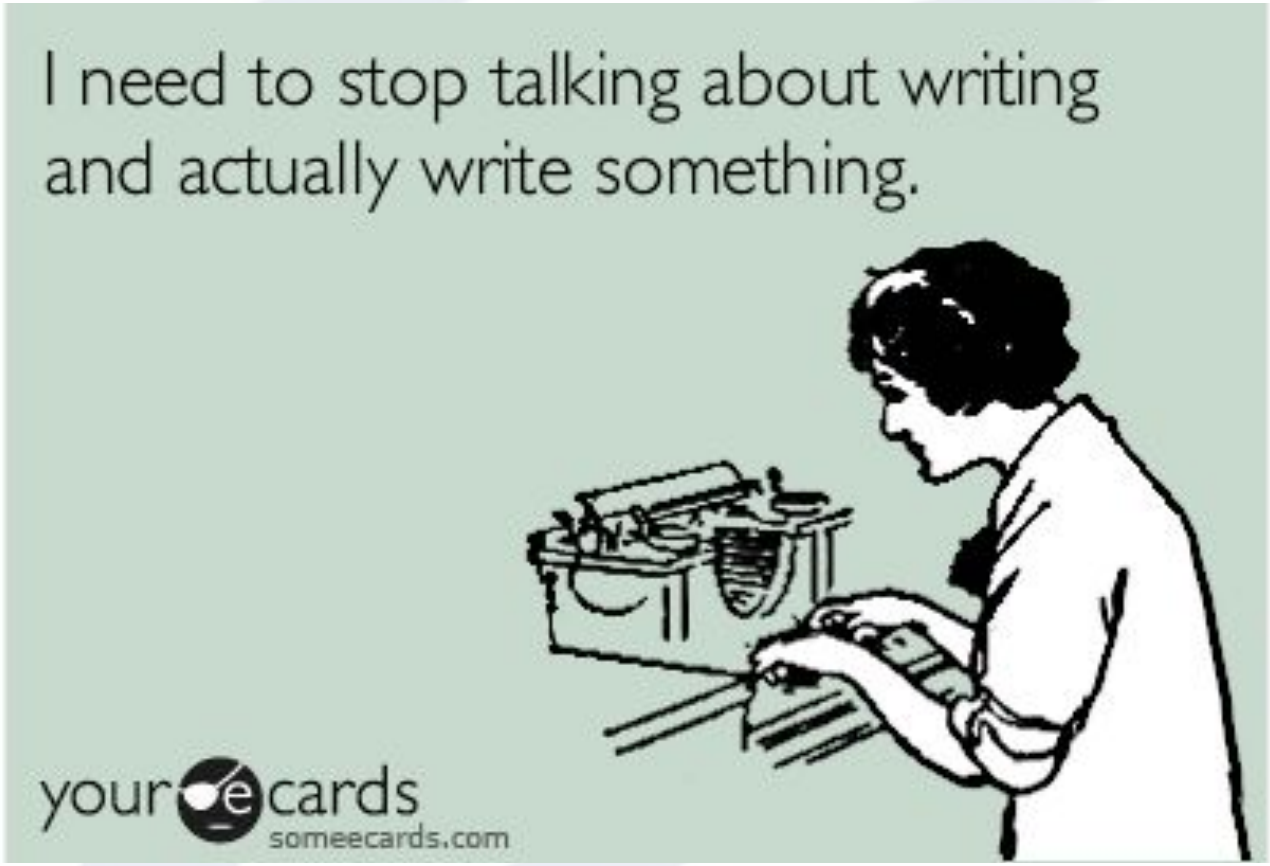
- **Tracking Indicators & Metrics**
- Using Indicators & Metrics



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- Using Indicators & Metrics

Resilience & Adaptation Strategies

Tijuana River National Estuarine Research Reserve

trnerr.org/currv

Q&A

The following slides provide abridged responses to questions asked in-session. To listen to the full discussion, watch the Q&A section of the recording.

Susi Moser
NERRS Science Collaborative
promundi@susannemoser.com

Kristen Goodrich
Tijuana River National Estuarine Research Reserve
kgoodrich@trnerr.org

National Estuarine Research Reserve System Science Collaborative

Q&A

Q: How do indicators and metrics account for "unknown unknowns"? How can we make our ecosystems "anti-fragile" as "black swan events" become common in an age of climate change?

- **A**: My suggestion here would be to determine what gives your system “breathing space”, what do you know about its buffering capacity (infrastructure-, eco- and human systems have such capacity though it looks different)? I would then look for indicators that alert you: a) to the stresses that can exhaust that buffering capacity and b) any indicators that give you about the state of that buffering capacity. So, some examples could be physical space between a system and the stressor; that could be the number of redundancies in a system; that could be the amount of saving or other resources needed to respond to a crisis. If you don’t have any clues about where a system is and what stresses it, the indicators would need to monitor system functioning more generally, so you can learn as much as possible about the system.

Q: Do you see these indicator and metric tool resources fitting in with other resilience, or adaptation planning resources? How do you think through what planning methods and objectives best fit with certain types of indicators?

- **A**: I think we answered that, but can’t remember. My answer is: yes, the process-oriented tools in the resiliencemetrics.org toolkit are complementary to other adaptation-related tools or planning tools. We in fact propose that our resources here are used in conjunction with existing tools and processes and will help make them better.

Q: How does this relate to the NOAA Coastal Community Resilience Index? (asked during webinar)

- **A**: It’s not intentionally related to it, though we link to it in the resources as another tool. Many people have developed indices for stakeholder groups in specific regions. The tools we offer are more process-oriented, and are designed to help guide you through the process of developing indicators to build your own indices. The use and application of tools like the index is an example of an indicator that one could use in a process.

Q: Can the Resilience Metrics Toolkit either inform or be adapted for use in the freshwater portions of rivers and uplands? (asked during webinar)

- **A**: Absolutely. There are resources for freshwater and upland managers in the resources section of the website. Much of the idea behind this effort has been driven by process, and transferring lessons learned, so adaptation is a key driver behind this approach.

Q: How do you evaluate the metrics and indicators? Do you come back to the performance indicators after a certain time, and evaluate how to change anything that’s not working? (asked during webinar)

- **A**: Yes, we absolutely come back to performance indicators and evaluate. Sometimes you might find that the indicator itself wasn’t useful, and there’s guidance to measuring the utility of an indicator.

  In terms of how we evaluate metrics, having in-depth conversations about how indicators link to the outcomes and stories you want to measure is a good start. Qualitative work and observations can be powerful drivers behind assessment, but can sometimes be hard to measure.

Q&A

Q: I'm curious how this process might work for resilience to weather extremes, like flash floods or tornadoes. Or is work like this only appropriate for slower or long duration hazards / events?

- **A**: Absolutely not, the tools in our toolkit should work for all kinds of weather/climate hazards, and in fact I would hazard to suggest they work for other things as well. Anything that involves thinking about planning ahead, working toward a vision, and measuring progress along the way. But that has not been tested and shown. But because our tools are really tools to enhance planning and strategic thinking, they are not hazard specific. They just need to be adapted to the specific context in which you are working.

Would you consider climate projections in this process? And on a related note, would you make a difference between successful adaptive capacity vs successful adaptation to projected changes?

- **A**: Our toolkit does not “reinvent” the wheel of risk/impacts/vulnerability assessments, in which climate projections come into play. But that is clearly part of the adaptation process. We have, however, used scenario games and planning and checking proposed solutions to problems for their robustness under different climate scenarios (projections under certain assumptions.) So, yes, if you plan for the future ignoring climate projections, we don’t think that is headed for success. Looking at what we know about the future climate is an essential part of successful adaptation. I’m not entirely sure what you mean by successful adaptive capacity - successfully building it? That is certainly not the same as successful adaptation to projected changes. In the 6-dimensions framework, successfully building adaptive capacity is one aspect of 6 of the broader success. It is also entirely possible to build adaptive capacity but not succeeding with adapting to projected changes (because other components were not done well). I hope that helps.

Q: What are some of the "on-the-ground" ways you recommend to build trust with stakeholders? Especially if you are making them attend meetings and away from their work?

- **A**: See the specific Job Aid we have for that: https://resiliencemetrics.org/sites/default/files/files/Resilience-Metrics-Job-Aid-How-to-Build-Trust.pdf

Q: Do you have processes for selecting the highest priority adaptation strategies? Which may be most important, impactful and implementable?

- **A**: What the highest priorities are comes out of visioning and establishing shared goals. We have a number of relevant Job Aids for that priority setting:
  - https://resiliencemetrics.org/sites/default/files/files/Resilience-Metrics-Job-Aid-Finding-Agreement-Resolving-Conflict.pdf
  - https://resiliencemetrics.org/sites/default/files/files/Resilience-Metrics-Job-Aid-Assessing-Tracking-Good-Adaptation-Outcomes-Over-Time.pdf
  - https://resiliencemetrics.org/sites/default/files/files/Resilience-Metrics-Job-Aid-Dealing-with-Trade-Offs-in-Adaptation.pdf
  - https://resiliencemetrics.org/sites/default/files/files/Resilience-Metrics-Job-Aid-Good-Adaptation_final.pdf
  - https://resiliencemetrics.org/sites/default/files/files/Resilience-Metrics-Job-Aid-Choosing-Priotizing-Indicators-and-Metrics.pdf
  - https://resiliencemetrics.org/sites/default/files/files/Resilience-Metrics-Job-Aid-Principle-of-Good-Governance.pdf
  - https://resiliencemetrics.org/sites/default/files/files/Resilience-Metrics-Job-Aid-Structured-Decision-Making-and-Criteria.pdf
  - https://resiliencemetrics.org/sites/default/files/files/Resilience-Metrics-Job-Aid-Questions-Guide.pdf

Q&A

Q: Do you know if there are any climate adaptation/resilience efforts ongoing at the NERRS in Beaufort, NC (Rachel Carson NERR)?

- **A**: We recommend reaching out to the Coastal Training Program at the North Carolina NERR for site-specific information on regional climate adaptation/resilience efforts: https://deq.nc.gov/about/divisions/coastal-management/nc-coastal-reserve/coastal-training-program

I noticed that none of the reserves involved in pilot testing the kit were from the southeast. Are there examples of adaptation indicators and metrics from the SE region available within the toolkit?

- **A**: SE reserves were not involved during the piloting phase (similar gaps are the Gulf of Mexico, Great Lakes region and Pacific Northwest). So we don't have a case study from there. But the resources section includes a few resources that pertain to the SE and other regions of the US. If you'd like to work with us, please get in touch (Contact Susi Moser)

Q: For centralized investment and policy, generalized metrics for success are needed. Do you know about any efforts to aggregate project level metrics up to help develop messages or standards to inform centralized funding and policy decisions?

- **A**: I'm not familiar with anyone aggregating. I know there are efforts at state or national levels that are trying to talk about how some efforts were done, and how that feeds back to an office; for example, capacity building efforts led by a national agency and whatever happens at the local levels is fed back to the national level.

What are your thoughts on what a rigorous validation effort would look like? What data over many places, time would you like to see? Is it possible to use secondary (less expensive) data to validate?

- **A**: We have not assessed or estimated the time and money required to do this. In part because we are focused on bottom up, context-specific indicators and metrics which would need to be meaningful to those involved. My hunch is that it depends on the indicator and the issue that it relates to to see what is robust. Some things, like tracking actions is relatively easily done and has a high frequency of monitoring. Process and decision-making/governance related indicators are also relatively easily tracked. Capacity, barrier and outcome indicators may take longer and are much more contextual and maybe even contested. These are great areas of research (and I would argue researchers do not yet agree on those) to give practitioners a better sense of what is more or less important to track from an objective point of view.

  I'd be happy to talk more about that if this is something you want to pursue (please contact Susi Moser)

Poll Questions

1. How experienced are you with developing indicators & metrics in other aspects of your work?
2. What is your expectation of how measuring adaptation success works?
3. I'm looking for indicators to (select all that apply):

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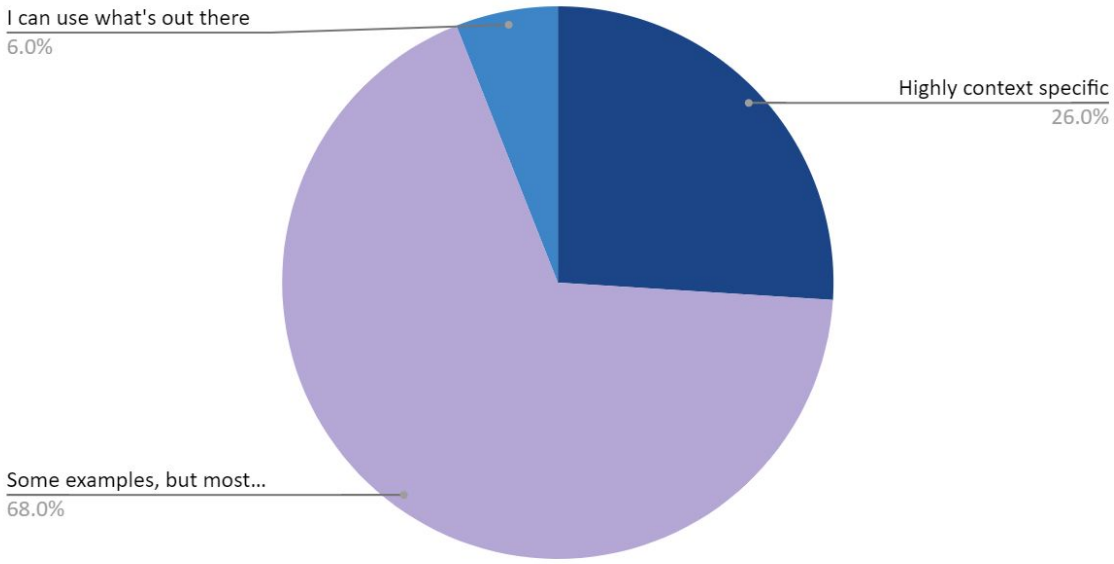
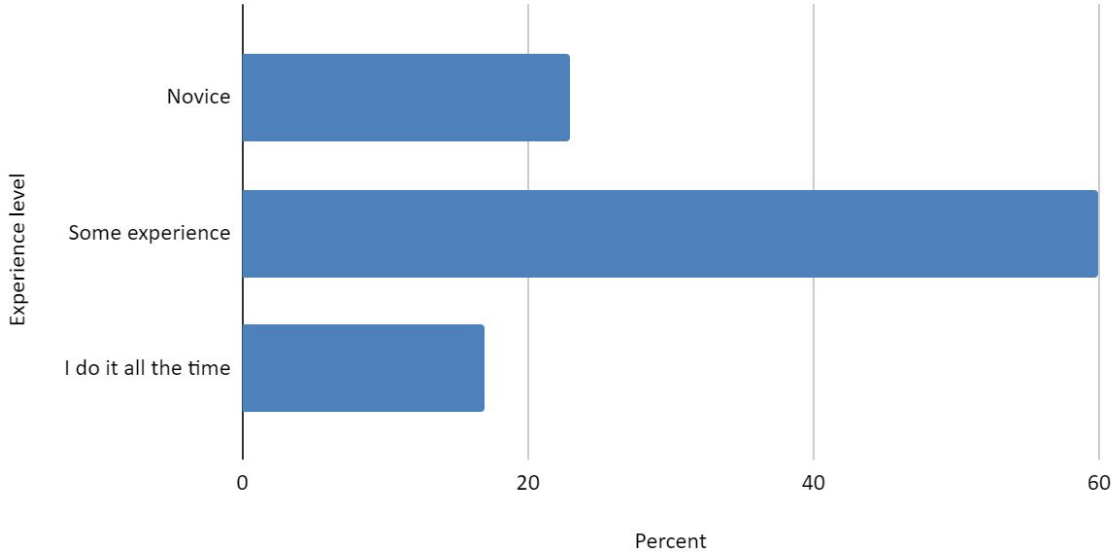
Poll Responses

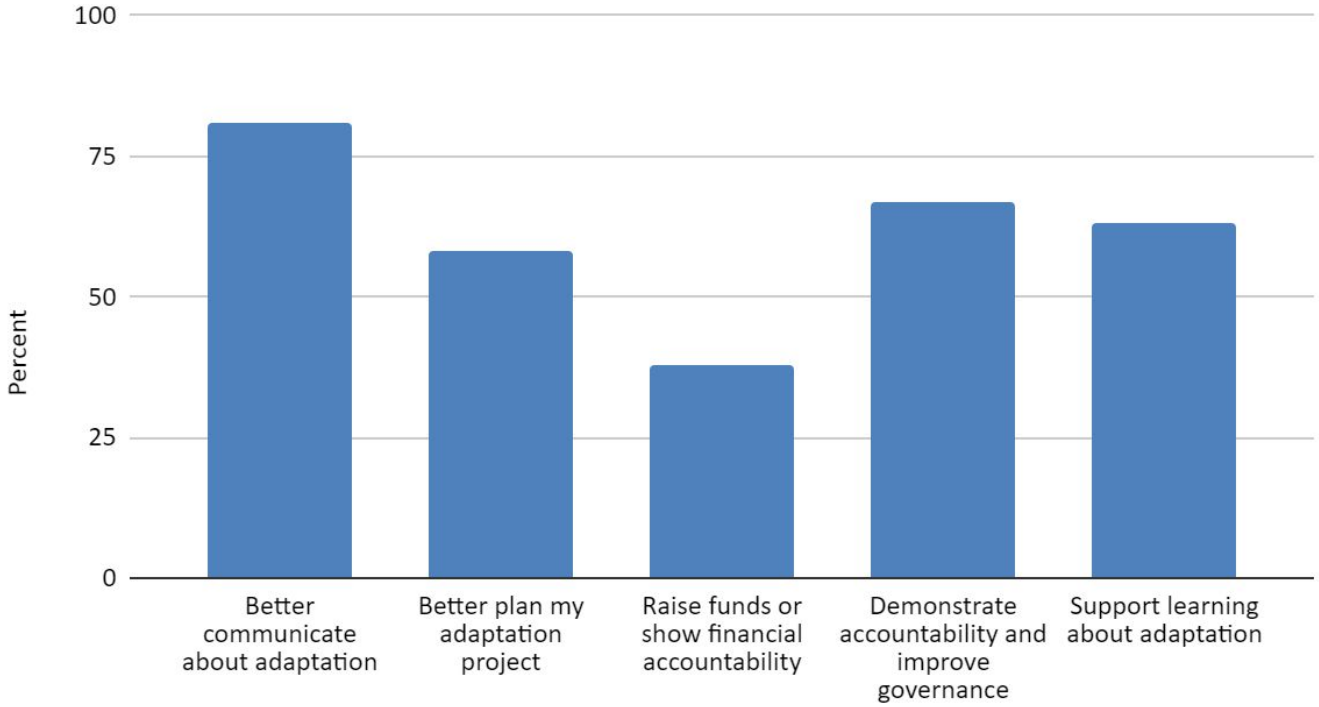
What is your expectation of how measuring adaptation success works?



How experienced are you with developing indicators & metrics in other aspects of your work?



I'm looking for indicators to:



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EXTRA SLIDES