

National Estuarine Research Reserve System Science Collaborative

The NERRS Science Collaborative by the Numbers (2010-2020)

147

Total projects supported

\$38,331,346

Total amount awarded

220+

Unique partnerships with local, state, tribal, federal, and academic collaborators

With funding from the National Oceanic and Atmospheric Administration, the Science Collaborative provides grants and other support for collaborative science projects addressing critical coastal management needs.

Dynamic changes along our nation's coasts are creating an urgent need for science-based tools that immediately address coastal decision makers' critical challenges. Collaborative science is an important process for delivering new knowledge and tools immediately usable in addressing these changes.

In the collaborative science process, researchers and the intended users of the new knowledge they generate work together to find science-based solutions in a way that none of them working alone could accomplish. Collaborative science draws upon the special knowledge of the management, regulatory or policy context that users bring, in order to inform the research questions, approach to the work, and the products that are developed. It is the most effective way to meet the varied needs of coastal managers, and the communities, businesses and citizens they serve.

ABOUT THE SCIENCE COLLABORATIVE

The National Estuarine Research Reserve System (NERRS) excels at the practice of collaborative science and has pioneered many techniques that make it successful. One such innovation is the Reserve System's Science Collaborative. The NERRS Science Collaborative manages a national competitive research program that supports collaborative science projects addressing critical coastal management needs. Made possible through sustained congressional investment in the NERRS, the program also disseminates the knowledge, processes, and key lessons learned from projects. With a national network dedicated to sharing tools and knowledge, research conducted at one reserve strengthens all 29 sites and the communities they serve, leaving them better prepared to manage our changing coasts.

Photo credits:

Coowe Walker, Kachemak Bay Reserve, AK. (top right), and Kaitlyn Dietz, GTM Reserve, FL. (bottom).



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Chris Bowser,
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WHAT DOES COLLABORATIVE SCIENCE LOOK LIKE?

Effectively Moving Concepts into Practice

A good example of collaborative science is an ongoing effort in the reserve system to identify, quantify and operationalize blue carbon - the term for greenhouse gas carbon that is captured and stored by coastal ecosystems. In 2010, the Waquoit Bay Reserve in Massachusetts and its partners launched a project called Bringing Wetlands to Market. The project stands out as being one of the first collaborative research projects of its kind, bringing researchers together with federal agencies, nonprofits, and local organizations to examine the coastal management implications and restoration finance potential of blue carbon. Since then, the networked nature of the reserve system has proven an effective vehicle for catalyzing similar work across the coastal United States. The Science Collaborative, which provided funding to support the original 2010 project, has since supported six additional projects across the reserve system—East, West, and Gulf Coasts. While grounded in local needs and interests, these projects are advancing blue carbon from a concept to reality. [See: [blue carbon projects](#).]



Testing Techniques in Multiple Locations at Once to Generate Better Coastal Decisions

A key value of doing collaborative science in the reserve system is the opportunity to test a climate adaptation idea across diverse coastal ecosystems losing salt marsh to sea level rise. In 2017, eight reserves along the East and West Coasts embarked on a three-year experiment to test the use of a marsh restoration technique called thin-layer sediment placement. The technique mimics natural sediment deposition processes in tidal marshes by adding a small amount of sediment on top of the marsh to maintain elevation relative to sea level rise. With each participating reserve representing geographically and ecologically distinct marsh systems in various states of health, the study shed light on the technique's efficacy across a variety of marsh types and conditions. This kind of study, which provided both local findings and insights looking across the "networked living lab" of different reserve sites, offers resource managers critical information, such as implementation methods and protocols, that allow them to determine both if the approach will work for their own site and also how to use the technique successfully. [See: [thin layer project page](#).]



Helping Communities Use Science to Adapt to Climate Change

Collaborative science projects have pioneered a novel approach for helping local governments make sense of and act on climate change science. Partnering with eight communities in four states, researchers and engagement specialists interviewed government officials and residents and then produced locally specific projections for the climate variables most relevant to those cities. Using this research, the team developed customized role-playing simulations that were used in workshops to immerse participants in a fictional, but realistic, climate planning process. The role playing activities and subsequent debrief discussions helped community leaders gather diverse perspectives on challenging decisions ahead of them and test collaborative methods for decision-making. Workshops increased understanding of local climate risks and the tradeoffs associated adaptation decisions, and informed municipal and county planning efforts in Maine, New Hampshire, Massachusetts, Rhode Island and South Carolina. [See: [NECAP to GCAP project page](#).]



The Science Collaborative provides grants and other support for collaborative science projects addressing critical coastal management needs. Initially hosted by the University of New Hampshire, the Science Collaborative is currently managed by the University of Michigan's [Water Center](#), which is part of the [Graham Sustainability Institute](#). The program is funded by the [National Oceanic and Atmospheric Administration](#) through a cooperative agreement with the University.

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