



# USCRP

US COASTAL RESEARCH PROGRAM



# ANNUAL REPORT

# 2025

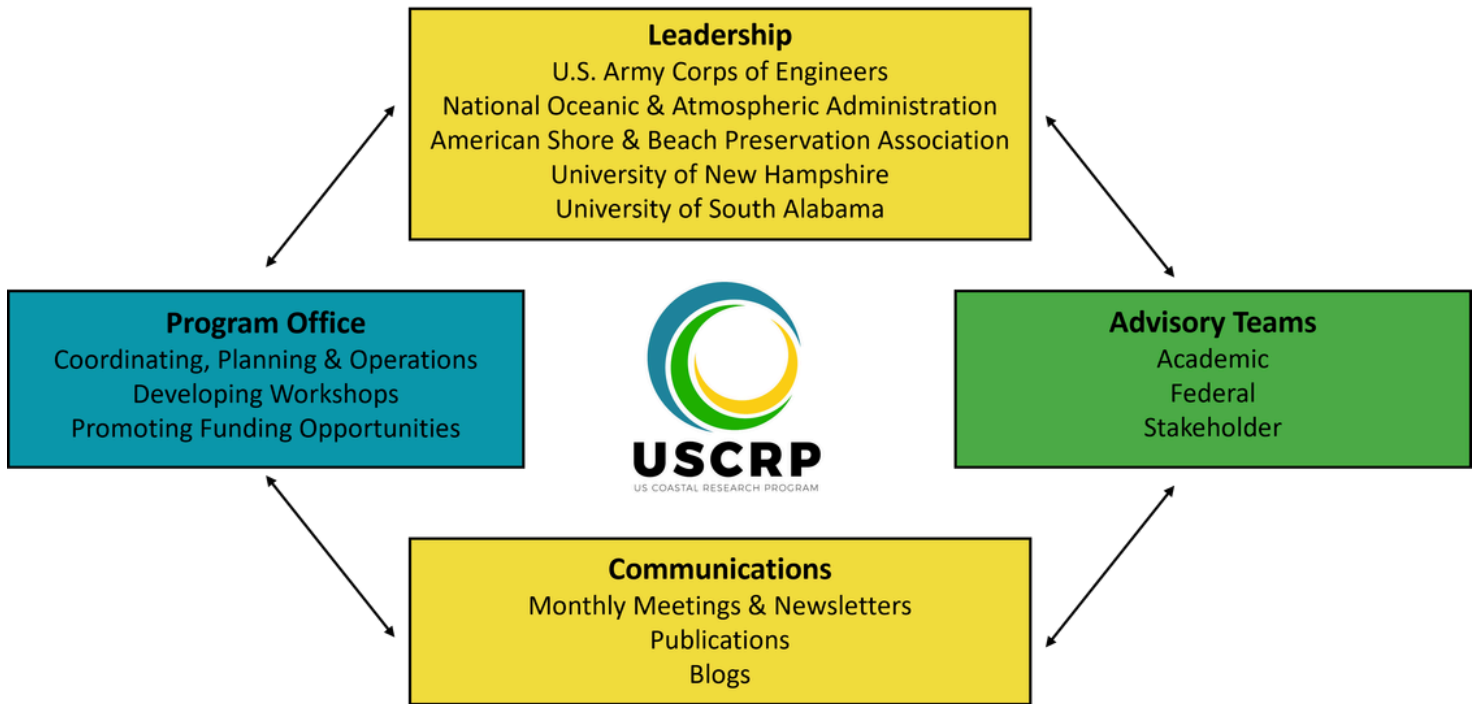
EDITION



US Army Corps of Engineers®



USGS USA  
science for a changing world



# OUR MISSION



The U.S. Coastal Research Program (USCRP) is a multi-agency led effort to **coordinate** federal activities, **strengthen** academic programs, and **address** coastal community needs by *identifying* coastal research priorities, *enhancing* funding for coastal academic programs, *fostering* collaboration, and *promoting* science translation. USCRP is guided by priorities of coastal leaders in federal agencies, academics, and non-governmental organizations and by the overarching framework and needs as identified in the seminal 2014 Nearshore Research Report (Elko et al. 2015).



# LETTER FROM LEADERSHIP

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The start of a new year offers a chance to reflect and look ahead with renewed purpose. For much of the coastal research community, 2025 was a year of challenges and transition, but the resilience and dedication of our program remained steady.

We had a leadership change with the retirement of Dr. Julie Rosati from the U.S. Army Corps of Engineers. We are grateful for her many years of service and leadership within USCRP, and we look forward to remaining engaged with her at the University of Florida. We welcomed Greg Dusek as an Executive Director. He brings extensive experience in federal research programs and translating science to practical applications, and we are excited for his leadership as we work to ensure our science reaches those who need it most.

This year the USCRP did not receive congressional funding to support new initiatives or a research funding opportunity due to the ongoing continuing resolution. Even so, the community stayed focused on collaboration, reflection, and preparing for future opportunities. We hosted the multi-institutional SEDCOLAB experiment at ERDC-CHL, launched the USCRP Funded Project Dashboard, and coordinated a forthcoming dedicated issue of *Shore & Beach* on “Past, Present, and Future of Coastal Research: USCRP Perspectives”,

We are grateful for the continued support of our members, the research innovations from our PIs, and the hard work of our staff. Our members are the driving force behind USCRP’s success, and we look forward to working together to make a lasting impact along our coasts.

*USCRP Executive Directors*



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USCRP program handouts on the results of annual initiatives made available at the 2024 Decadal Visioning Workshop.

# ANNUAL INITIATIVES

The USCRP is dedicated to several annual initiatives focused on communication and coordination with members and supporting the coastal research community. Through monthly member meetings, membership newsletters, the website, and our social media, USCRP regularly disseminates information about the program, member engagement, funded projects, community announcements, and more. And we are always open to welcoming new members!

## 2025 Highlights

The US Coastal Research Program continued to support national coastal priorities throughout 2025, including:

- managed **32** active research projects
- improved access to information through the USCRP Funded Project Dashboard & website
- coordinated a dedicated issue of Shore & Beach on “Past, Present, and Future of Coastal Research: USCRP Perspectives”, and
- supported the multi-institutional "SEDiment transport COllaborative LABoratory experiment" (SEDCOLAB)

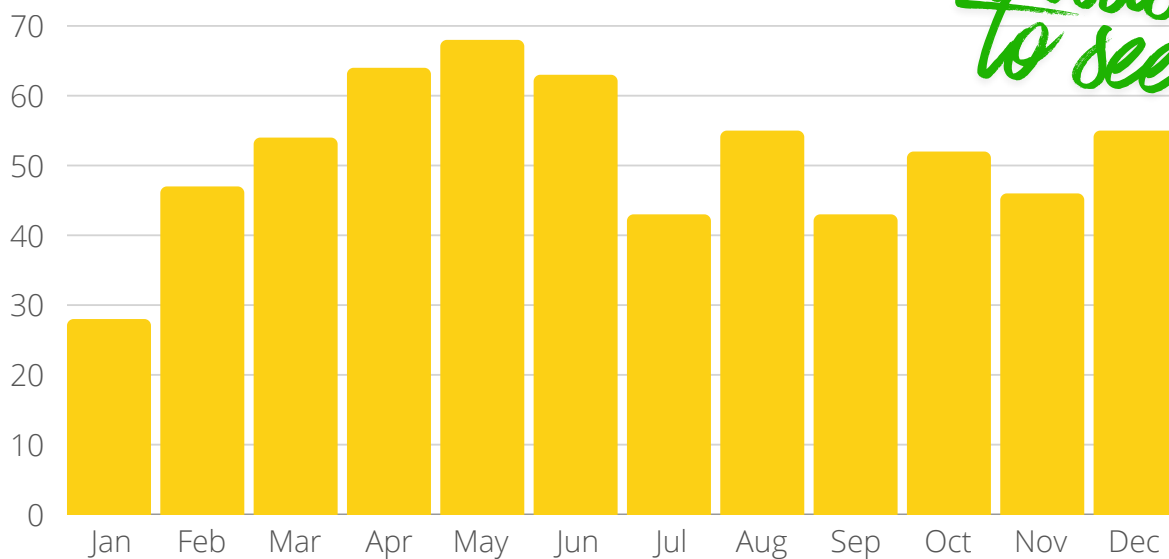
## USCRP Communication Highlights:

- **1100** members
- **12** monthly newsletters
- **17** blog posts
- **27k** social media reach



To date USCRP has supported **367** students. USCRP managed **32** active research projects in 2025. Through these projects, at least **31** Internal reports were written, **17** papers in prep or submitted, **31** external presentations, and multiple datasets, guidelines, or tools produced.

## Monthly Meeting Attendance in 2025



*it was great to see you!*

[Add 2026 to your calendar now!](#)



**USCRP**

2025 MONTHLY MEMBERSHIP MEETINGS

2:00-3:30 PM ET

JANUARY 7

**USCRP Program Updates**

FEBRUARY 4

**Dr. Bret Webb** (University of South Alabama) *Systems Engineering Approaches for Resilience to Coastal Hazards*

**Dr. Diane Henshel** (Indiana University) *Climate resilience and adaptation of communities to storm-related flooding in the US Great Lakes watershed*

MARCH 4

**Dr. Andrew Juhl** (Lamont-Doherty Earth Observatory of Columbia University) *A Multi-Decadal Re-Analysis of Water Quality and Health Risks In An Urban, Coastal Watershed With Changing Precipitation*

**Dr. Alberto Canestrelli** (University of Florida) *Identification of sources of fecal pollution in populated estuaries by a combination of monitoring and numerical modeling*

APRIL 1

**Dr. Jon Miller** (Stevens Institute of Technology) *Evaluating the Influence of Water Level on Wave Attenuation of Natural and Nature Based Features in Low-High Energy Environments*

**Dr. Reza Marsooli** (Stevens Institute of Technology) *Benefits of Vegetation for Preventing Coastal Flooding Induced by Failure of Seawalls*

**Dr. Tracey Mandel** (University of New Hampshire) *Observations of Sediment Overwash into Salt Marsh Environments with Implications for Coastal Resiliency in Colder Climates*

MAY 6

**Dr. Theresa Oehmke** (University of New Hampshire) *Scaling Transport in Nearshore Vegetated and Non-Vegetated Environments: Sediment, Seeds, and Stiffness*

**Dr. Kim de Mutsert & Dr. Kemal Cambazoglu** (University of Southern Mississippi) *Using a coupled modeling framework to evaluate how freshwater and nutrient input from Bonnet Carré spillway openings affects water quality, food webs, and fisheries in the Mississippi Sound and Bight*

**Dr. Timu Gallien** (University of California Los Angeles) *Analyzing and Modeling Hybrid Dune Resilience to Energetic Waves*

JUNE 3

**Dr. Morteza Derakhti** (University of Washington) *Sediment Transport Over the Nearshore Environment (STONE): Linking nonlinear wave effects across the shoaling and breaking zone*

**Dr. Christie Hegermiller** (University of Washington) *Long-wave and short-wave controls on nearshore sediment suspension and transport*

**Dr. Thomas Lippmann** (University of New Hampshire) *Biophysical Drivers of Sedimentation in Salt Marsh Environments with Implications for Coastal Resiliency*

# 2025 MONTHLY MEMBERSHIP MEETINGS

2:00-3:30 PM ET

## JULY 1

**Dr. Karl Kaiser** (Texas A&M University at Galveston) *Sources and Transport Pathways of Microplastics in a Coastal Estuary*

**Dr. Hussain Abdulla** (Texas A&M University-Corpus Christi) *Microplastic presence and circulation in Galveston, Corpus Christi, and Matagorda Bays*

**Dr. Alberto Canestrelli** (University of Florida) *Quantifying morphological changes driven by oyster reef breakwaters under different tidal and wave conditions to inform restoration strategies*

## AUGUST 5

**Dr. Natalie Nelson** (North Carolina State University) *Towards Real-Time Fecal Indicator Bacteria Monitoring in Coastal Waters*

**Dr. Antonio Rodriguez** (University of North Carolina at Chapel Hill) *Investigating oyster-reef morphodynamics to optimize nature-based infrastructure*

**Dr. Bret Webb** (University of South Alabama) *Augmenting Hurricane Sentinel Towers with Chemical and Biological Sensors*

## SEPTEMBER 2

**Dr. Justin Stopa** (University of Hawaii at Manoa) *An Investigation of Morphodynamic Long-Term Variability at Waikiki Beach*

**Dr. Silvia Newell** (University of Michigan) *Identifying At-Risk Habitats for Walleye, Yellow Perch, and Lake Whitefish in the U.S. Great Lakes Amid Aquatic Invasive Species Impacts*

**Dr. Christie Hegermiller** (University of Washington) *Automated sediment characterization to understand long-term coastal change in response to human interventions*

## OCTOBER 7

**Dr. Cary Troy** (Purdue University) *Quantifying and Understanding the Lake Michigan Shoreline Response Associated with an Extreme Water Level Increase*

**Dr. Katy Serafin** (University of Florida) *How colliding forces change: The influence of climate and geography on flood transition zones*

**Dr. Thomas Lippmann** (University of New Hampshire) *Coastal Resiliency in Salt Marshes and Marine Vegetated Environments*

## NOVEMBER 4

**Dr. Jennifer Irish** (Virginia Tech) *Physically Informed, Equitable, and Efficient Hurricane Surge Characterization*

**Dr. Ryan Mieras** (University of North Carolina Wilmington) *Breaking wave-induced rapid beach profile evolution in the inner surf and swash zones*

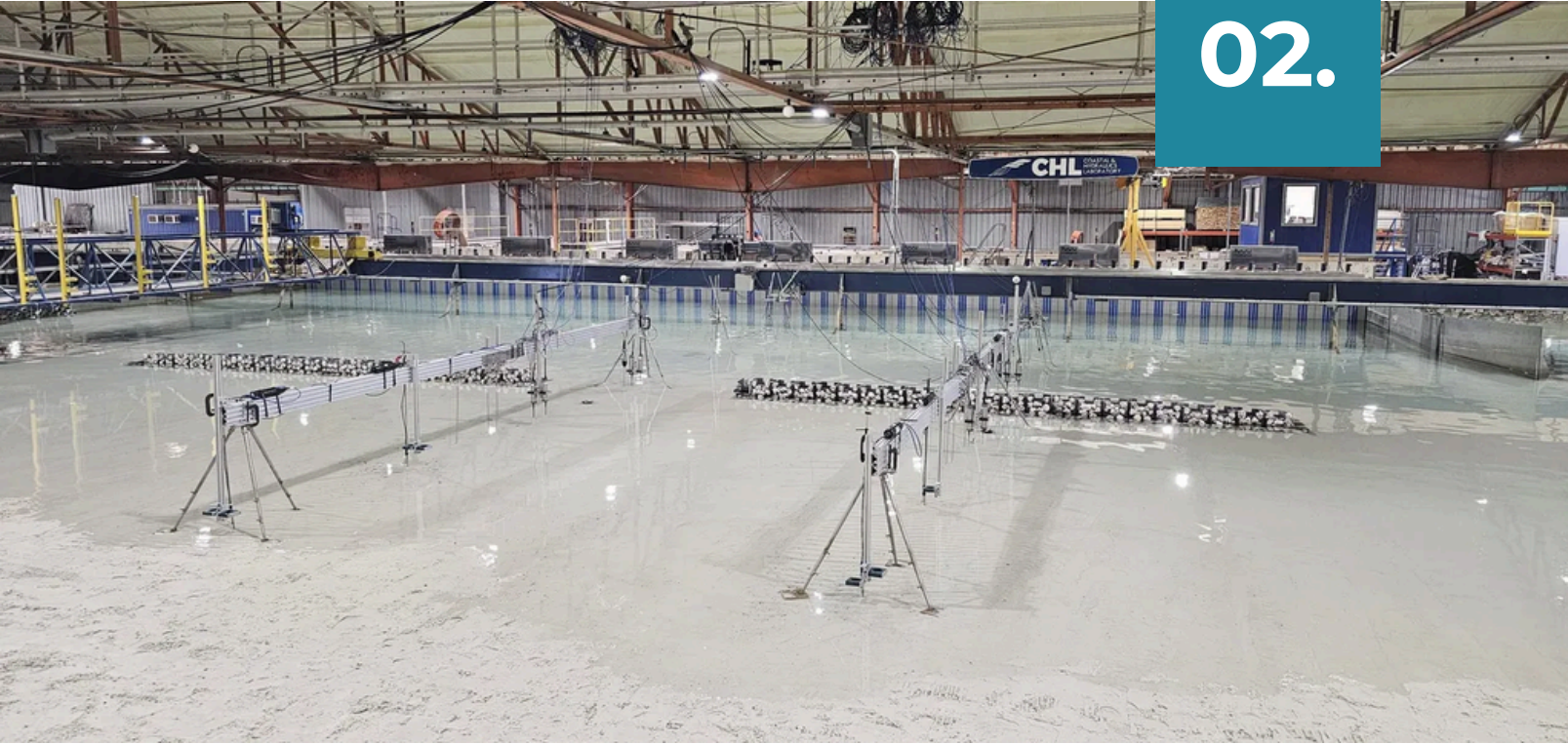
**Dr. Gabriele Villarini** (Princeton University) *Probabilistic predictions of rainfall associated with tropical cyclones over land*

## DECEMBER 2

**Dr. Felix Santiago-Collazo** (University of Georgia) *Assessing Compound Flood Impacts on Groundwater Levels in Coastal Urban Communities*

**Dr. Kendall Valentine** (University of Washington) *Implementing species-specific root traits into hydrodynamic and geomorphological models of marsh evolution to understand Blue Carbon dynamics*

**Dr. Nigel Temple** (University of South Alabama) *Performance Evaluation of Nature-based Retrofits for Hardened Shorelines and Impacts on Adjacent Properties*

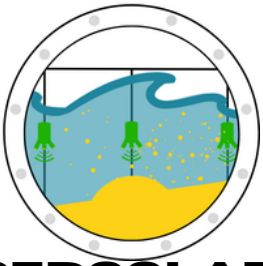


Setup of a representative “oyster reef” in the large wave basin at ERDC-CHL during SEDCOLAB.

# EVENTS

The USCRP hosts events to engage members to further strengthen, coordinate, and address coastal research priorities. In 2025, USCRP hosted:

- the SEDCOLAB full experiment at ERDC-CHL

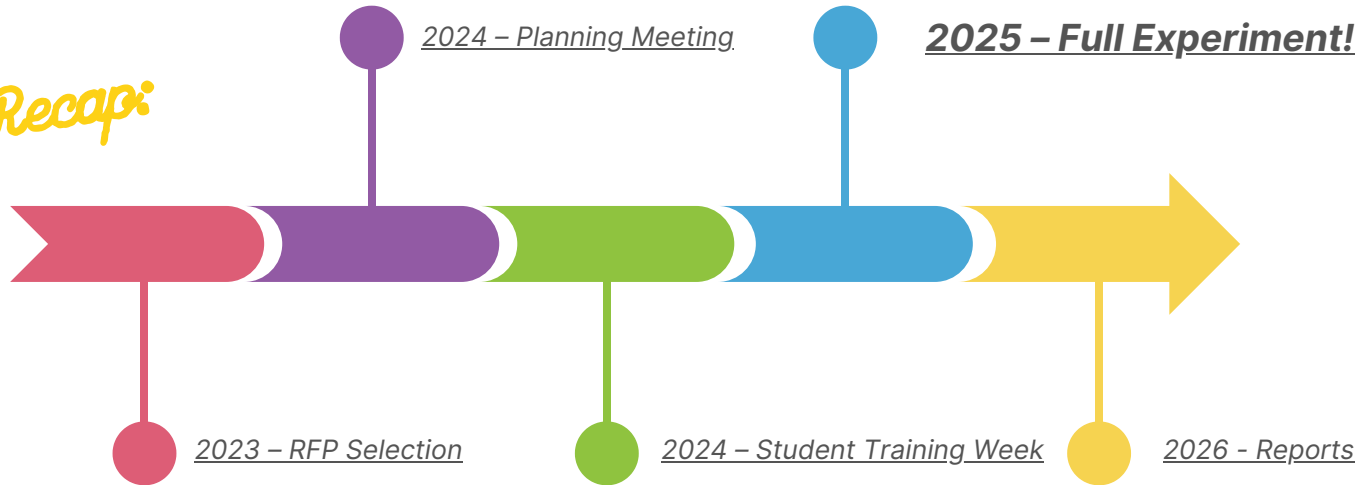


**SEDCOLAB**  
US Coastal Research Program

# SEDiment transport COLlaborative LABoratory experiment (SEDCOLAB)

This was the year of the much-anticipated, multi-institutional SEDCOLAB!

*To Recap:*



All of the coordination and planning came to realization, and teams representing 11 academic institutions, including 16 researchers and 22 students, conducted their full experiments at the U.S. Army ERDC-CHL in Vicksburg, Mississippi, focused on wave-induced changes on beaches, sediment transport in the nearshore, and how oyster breakwaters affect beach change.

To document the goals, impact, and lessons learned from SEDCOLAB, we:

- launched a dedicated USCRP [SEDCOLAB webpage](#)
- drafted an overview technical report to be published by USACE - stay tuned!



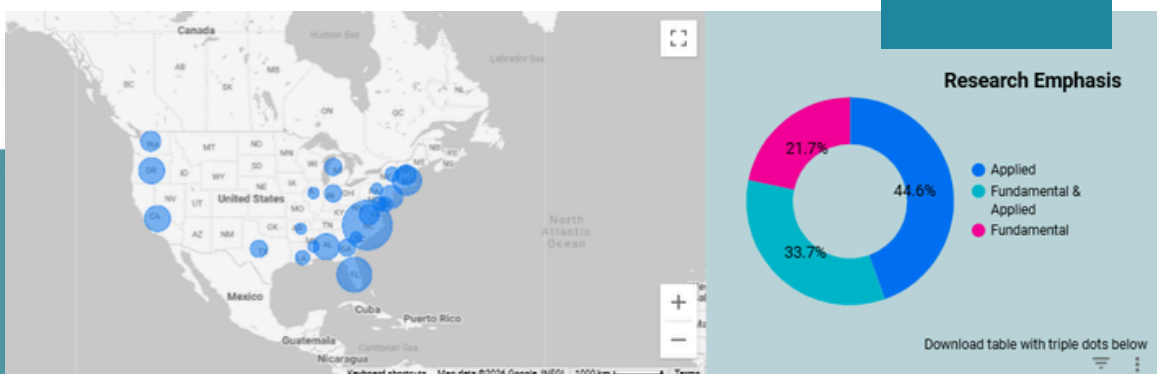
(Left) Researchers building a representative “oyster reef” in the large wave basin, and (right) a group of researchers from several universities collaborating in the wave flume at ERDC-CHL during SEDCOLAB.



## FUNDED PROJECTS

Navigate projects by filtering or clicking different elements. Select a project in the table to open its attributes at the page bottom. Project #s can be used in the other pages to search a project of interest.

User Lexicon



Screenshot of the newly released USCRP Funded Project Dashboard, showing the diversity and breadth of the coastal research outcomes.

# PRODUCTS FROM USCRP

The USCRP is committed to science translation and communication with members and the broader coastal research community about programmatic impacts, outcomes, and updates. In 2025, we achieved this with these USCRP products:

- Funded Project Dashboard
- Coastal Workforce Paper
- Special Issue of *Frontiers in Ecology and Evolution*
- Dedicated Issue of *Shore & Beach* (Spring 2026)

# New Funded Project Dashboard

The USCRP Funded Project Dashboard transforms information from USCRP's Funded Project Database into a publicly accessible, user-friendly resource for the coastal community. Anyone can now:

1. **Search for information** about USCRP-funded projects by keywords, region, lead researcher, project status, or research theme.
2. **Explore the types of data collected** through USCRP-funded research and where those data can be accessed.
3. **Discover tangible products and outcomes** from USCRP-funded work, including academic advancements, data and information, public outreach, and tools.
4. **Generate visually engaging "By the Numbers" infographics** summarizing USCRP-funded projects for specific audiences.

Designed to be interactive and easy to use, the dashboard includes tips and resources to support a smooth user experience. Together, the database and dashboard make project information more accessible for coastal management, collaboration, and addressing research priorities

The screenshot shows a web browser displaying the USCRP Funded Project Dashboard. The browser address bar shows the URL: [lookerstudio.google.com/u/0/reporting/5a20cd64-7b07-417a-9581-c5effd2cd61d/page/p\\_8nh0u7g8ld](https://lookerstudio.google.com/u/0/reporting/5a20cd64-7b07-417a-9581-c5effd2cd61d/page/p_8nh0u7g8ld). The dashboard features a left navigation bar with the following items: Landing Page (selected), Funded Projects, Project Data, Project Outcomes, Reports, and Additional Resources. The main content area has a header with the USCRP logo and the text "US COASTAL RESEARCH PROGRAM". To the right of the logo is a "FUNDED PROJECT DASHBOARD" section with four circular statistics: 27 US STATES WITH RESEARCH SITES, 322 STUDENTS SUPPORTED, 97 ACADEMIC INSTITUTIONS ENGAGED, and 15 US FEDERAL AGENCIES ENGAGED. Below the header is a large circular infographic showing "78 PROJECTS FUNDED 2016 to 2023". To the right of the infographic is a welcome message: "Hello and welcome, explore USCRP funded projects by clicking, zooming, or filtering. Pages are accessed with the left navigation bar. All tables can be downloaded/exported. There are 4 main pages, pages 2-5 with details below, and additional resources can be found on page 6." Below the welcome message is a list of page descriptions: 2) Funded Projects Page: project details by research topics and approach, researcher information and more. 3) Project Data Page: details about research locations and types of data associated with projects. 4) Project Outcomes Page: tangible and usable public resources produced by projects as resources. 5) Reports Page: explore reports that capture ways USCRP serves the coastal community. At the bottom right, there are "Quick Tips": 1) If dashboard bottom is cut off, reduce screen width. 2) If laggy, change browsers, close other windows, refresh, or clear filters. 3) Filters selected on one page do not carry to another, but are maintained if you change pages. At the bottom right, there is a contact link: "Direct any inquiries to [contact.uscrp@gmail.com](mailto:contact.uscrp@gmail.com)". At the bottom left, there is a footer: "Data Last Updated: 2/6/2025 10:58:46 AM | [Privacy Policy](#)".

# COASTAL WORKFORCE DEVELOPMENT SUCCESS: THE U.S. COASTAL RESEARCH PROGRAM & THE KEYSTONE VARIABLE CONCEPT

In August, USCRP published in the international journal *Environmental Challenges*. The paper presented a broad overview of global coastal zone issues, overviews tactics for coastal workforce development, and highlights USCRP's approach in training the next generation of coastal scientists.

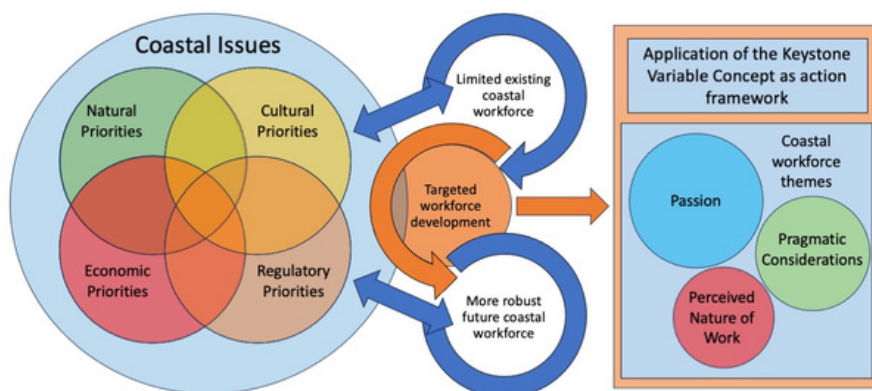
The paper looked at the number of students directly entering the workforce, new

resources and tools created for use by the workforce, and student trainings in the first five years of the program. In addition, current and previously funded students were asked to share their perspectives on entering the coastal workforce.

## SUCCESS

Results indicate students have a strong desire to enter the coastal workforce stemming from personal passion but they also look at the nature of the work and pragmatic considerations.

The USCRP supported over **250** students in its first 5 years. At the time of publication, **195** had graduated. **51%** or more of past students entered the coastal workforce.



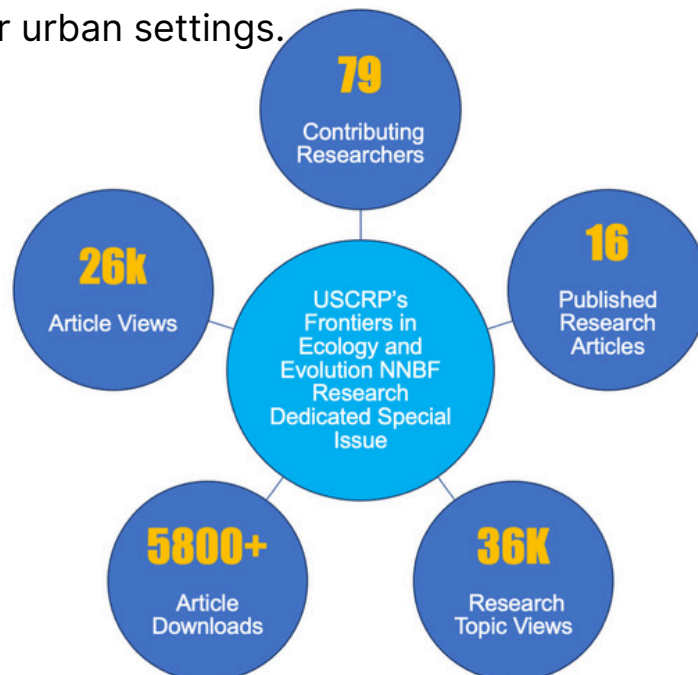
Graphical abstract of the coastal issues being addressed by the coastal workforce and how targeted development using the Keystone Variable Concepts can develop a more robust workforce.

Indirect support in the form of **550** new tool advancements, public outreach initiatives, academic advancements, and new data products contributed to the coastal workforce.

# Special Issue of Frontiers in Ecology and Evolution

Continuing USCRP’s year of publications, another special issue with the journal Frontiers in Ecology and Evolution was undertaken. Led by USCRP’s ORISE Fellow, Dr. Bianca Charbonneau, the cross agency editorial team put forth the topic, “[Coastal Adaptation through Nature: Natural and Nature Based Features \(NNBF\) Research](#)”. The team included representation from USACE with Dr. Amanda Tritinger who leads the Engineering with Nature (EWN) Program, Dr. Stephanie Dohner who is a geomorphologist with the U.S. Naval Research Laboratory (NRL), and Dr. Mariko Polk who represents NOAA via North Carolina Sea Grant and is also a past USCRP funded student.

The research topic became a special issue in April with its tenth accepted submission and ultimately solicited **16** publications for the issue. The call for submissions was limited to research funded by USACE through programs such as USCRP (**6 articles**) or EWN. The research in the collection spans topics affecting or relating to NNBF with research across terrestrial and marine coastal habitats in natural, developed, or urban settings.

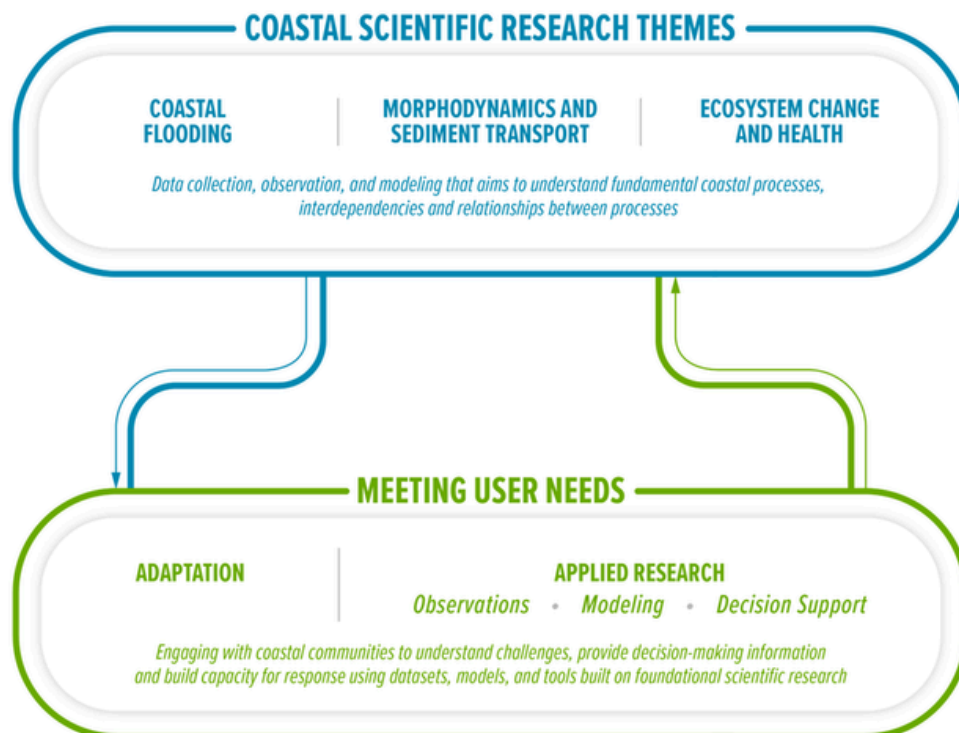


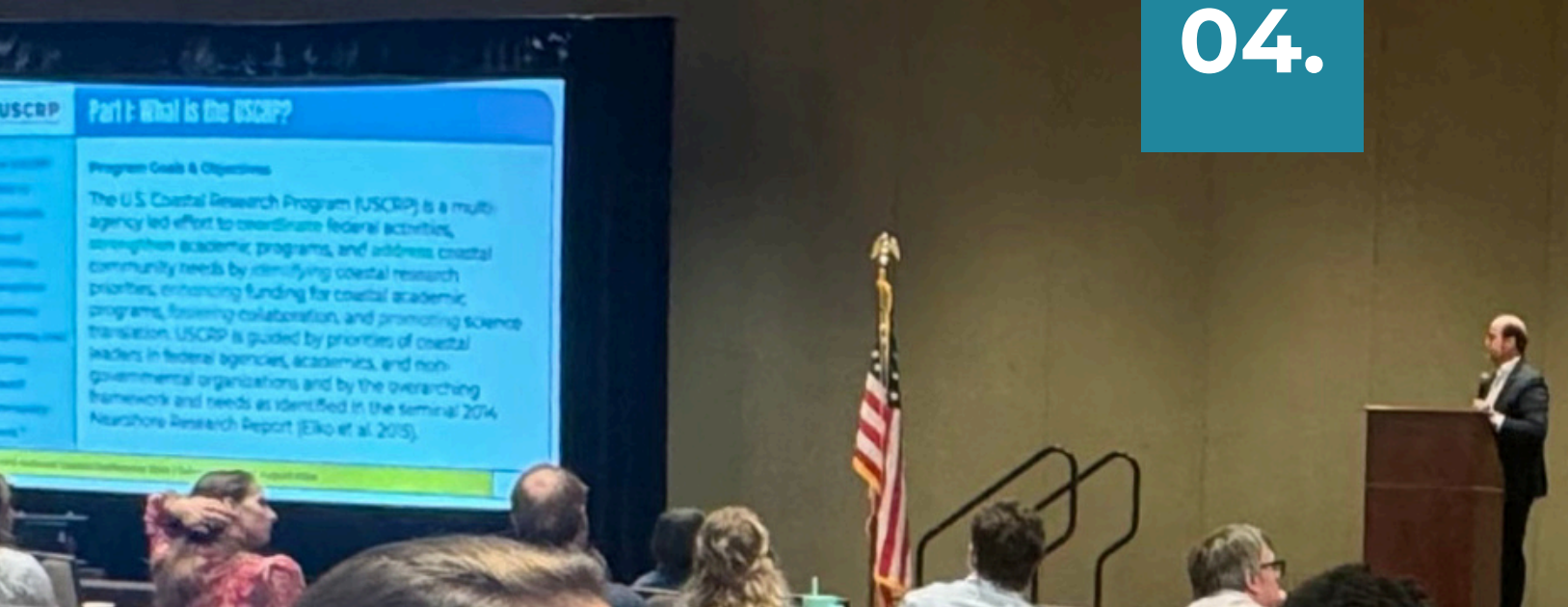
## Dedicated Issue of Shore & Beach

In 2025, the USCRP coordinated authors and writing teams as they complete reports summarizing outcomes from the 2024 Decadal Visioning Workshop. Leaders from the coastal research and practitioner community synthesized input from more than 150 academics, federal representatives, and stakeholders in the coastal community, into two reports:

- “The Future of Coastal Processes Research Part 1: A Community-Driven Vision for the Next Decade of Coastal Science”
- “The Future of Coastal Processes Research Part 2: State of the Science”

These will be published in a USCRP Dedicated Issue of Shore & Beach in spring 2026, alongside a retrospective on the history of coastal research and additional workshop insights. Together, they will provide a shared foundation to guide future research, strengthen collaboration, and advance solutions for coastal communities.





USCRP Co-Executive Director, Bret Webb, presents on USCRP outcomes from the 2024 Decadal Workshop at the American Shore and Beach Preservation Association's National Coastal Conference.

# USCRP IN THE COMMUNITY

USCRP attends **conferences** and **coastal community events** to stay engaged with members, researchers, students, and communities. We enjoy the opportunity to **learn** about your work, **share** the USCRP mission more broadly, and continue to **connect** societal needs with opportunities for academic investigation. In 2025, USCRP attended:

- ASBPA National Coastal Conference



# 05.

## SUMMARY

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In conclusion, 2025 was a year of coordination and planning for USCRP. Our staff looks forward to engaging with you at conferences or meetings and continuing to learn from your research in 2026.

Want to get involved, learn more, or share an event for 2026?  
Email us at [contact.uscrp@gmail.com](mailto:contact.uscrp@gmail.com)