



# Strategic Plan

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## VISION

The North Carolina Water Resources Research Institute will continue to serve as a leader in the state, region, and nation by addressing immediate and long-term needs in water resource management through the facilitation and dissemination of sound science, educational programs, and professional training opportunities.

## MISSION

Through integrated research, community engagement, and outreach efforts, the North Carolina Water Resources Research Institute promotes understanding of critical water issues and supports the sustainable use and conservation of water resources to benefit communities, ecosystems, and economies.

## VALUES

NC WRRRI is committed to executing the program's mission based on the following core values:

- **Sound Research:** WRRRI supports sound science through merit-based peer reviewed research.
- **Workforce development** - WRRRI supports the development and training of the next generation of water resource experts across multiple disciplines.
- **Collaboration:** WRRRI understands that water-related challenges are complex; we embrace interdisciplinary and collaborative approaches that incorporate research, outreach, and education.
- **Unbiased Education:** WRRRI serves as a bridge between research and practice, educating stakeholders and transferring information in an unbiased and transparent manner.
- **Engagement:** Addressing complex challenges and meeting varied community needs requires a diversity of voices and experiences. WRRRI works with partners and communities to ensure the most pressing water concerns across the state are addressed.

## COMMITMENT TO DEIJA

As our state's population continues to grow and diversify, NC WRRRI recognizes that in order to maintain relevance, expand, innovate, and maximize effectiveness, we must embed **diversity, equity, inclusion, justice, and accessibility (DEIJA)** into organizational expectations and operations. We also recognize that societal barriers and challenges often prevent members of historically marginalized populations from fully engaging in research opportunities. Because of this, we must initiate intentional measures to address this gap. WRRRI commits to strive for diversity, equity, inclusion, justice, and accessibility.



### NC WRRI will:

- Proactively recruit, retain, and prepare a diverse workforce that reflects diversity across all levels of our organizational structure
- Engage and serve communities and partners that are representative of all North Carolinians
- Strive to create and facilitate research opportunities that equitably fund underserved universities, faculty, and students
- Fund research with real-world outcomes that benefit underserved communities

## INTRODUCTION

The North Carolina Water Resources Research Institute (NC WRRI) is a multi-campus center of the University of North Carolina system. It is located at North Carolina State University but serves public and private universities across the state, including minority-serving institutions. NC WRRI is supported through a federal-state partnership between the U.S. Geological Survey and the state of North Carolina and is one of 54 institutes across the nation federally authorized by the [Water Resources Research Act of 1964](#) to support, coordinate, and facilitate water resources research.

### What We Do

- **Support** faculty, student, and community-based research that addresses water-related issues and expands the understanding of water and water-related phenomena
- **Disseminate** research findings, tools, technologies, and water-related information through a variety of outreach, education, and training programs
- **Facilitate** collaboration and networking events engaging diverse partners

Since 1965, NC WRRI has supported research, extension, education, and training needs that address North Carolina's water resources priorities. NC WRRI successfully communicates science and policy information to a variety of partners, including governmental officials, industries, educators, and the public. These efforts result in significant environmental, economic, and educational benefits across the state.

### Why our Work Matters

North Carolina remains among the fastest-growing states in the nation, increasing by 9.5% between 2010-2020, with a population total of 10.4 million. North Carolina had the fourth largest population increase since 2018, growing at twice the rate of the national average. The state's population is projected to reach 14 million by 2050. This population growth will continue to stress the state's water resources and infrastructure.

NC WRRI is uniquely positioned to facilitate research, transfer technology advances from science to application, and deliver education and training opportunities that are critical to address growing water-related challenges locally, regionally, and nationally.



NC WRRI has close collaborations with two other state/federal programs based at NC State University, [NC Sea Grant](#) and [NC Space Grant](#). These partnership programs are distinct but have synergistic missions to NC WRRI, providing additional opportunities in research, extension, and outreach where applicable.

## STRATEGIC PLAN OVERVIEW

NC WRRI's strategic plan will guide the institute's investments to respond effectively to North Carolina's immediate and long-term needs in water resource management. NC WRRI's program direction, research, extension, and outreach priorities are regularly updated and informed by: state and federal resource management agencies, the NC WRRI Advisory Committee, academic institutions across North Carolina, local government and community leaders, industry partners, and non-governmental entities. Additional timely information is gathered through statewide surveys as well as evaluation feedback from event programming.

### National Research Themes

In collaboration with a committee of state directors of water institutes, the Water Resources Research Act Program within the U.S. Geological Survey's Water Resources Mission Area proposed **seven strategic focus areas**, including:

- Water scarcity and availability
- Water-related hazards and climate variability
- Water quality
- Water policy, planning, and socioeconomics
- Ecosystem and drainage basin functions
- Water technology and innovation
- Workforce development and water literacy

Feedback received from NC WRRI's Advisory Committee, team, and external partner input reflects that these focus areas are important at the state scale as well. Partners also recognized that the resources needed to address these focus areas are not available within current NC WRRI implementation funds. Thus, leveraging strong partnerships across the state continues to be essential. NC WRRI has program flexibility to identify a subset of priority areas to invest in, reflecting current state priorities as well as partner and program capacity. These four strategic priorities and associated goals are outlined in the "NC WRRI Strategic Priorities" section of this document.

## NC WRRI STRATEGIC PRIORITIES

In support of NC WRRI's mission and to continue to expand the institute's impact in supporting the water resource needs of North Carolina, **NC WRRI will:**

- Support responsive and inclusive research
- Facilitate collaborative partnerships
- Provide training and workforce development opportunities
- Increase environmental literacy

These strategic areas are closely integrated and actions within one area will likely advance success in multiple areas.

## **STRATEGIC PRIORITY 1**

### **Support Responsive and Inclusive Research**

The Water Resources Research Act directs state programs to plan, facilitate, and conduct research to solve state water challenges. Efficient use of our state's water resources requires new scientific information as well as effective translation of research results to decision-makers and communities.

#### **NC WRRRI will:**

- Engage with water users, managers, policymakers, and communities to listen and understand multidisciplinary research needs that will inform development of priorities for competitive student and faculty funding opportunities.
- Increase university engagement and success in funding competitions for students and faculty from Minority Serving Institutions, including Historically Black Colleges and Universities.
- Increase university engagement and success in funding competitions for students and faculty from institutions located in western North Carolina.
- Strengthen research investments that occur in, or are applicable and transferrable to, rural communities.
- Provide informational webinars designed for students and faculty in order to support awareness and participation in competitive funding opportunities.
- Support faculty, student, and community member research co-production.
- Provide extension training opportunities for faculty and students.
- Collaborate with partners to support place-based watershed research programs that demonstrate innovative watershed management approaches.
- Seek additional financial resources and joint funding opportunities to further support water research across the state.

## **STRATEGIC PRIORITY 2**

### **Facilitate Collaborative Partnerships**

NC WRRRI is a facilitator of a broad range of partnerships that support science-informed management decisions. Through a multi-faceted approach, NC WRRRI-supported



partnerships result in co-production of research activities, strong research and information sharing, and professional networking.

**NC WRRI will:**

- Expand the state’s annual water conference participation of: scientists, federal, state, and local governments and municipalities, non-profit organizations, industries, and local citizens.
- Increase participation of students and faculty from Minority Serving Institutions in the NC WRRI Annual Conference, WRRI funding opportunities, and other programming.
- Seek opportunities, in collaboration with partners, to develop and deliver informational and networking events and programs focused on Western North Carolina water interests.
- Strengthen and expand collaborative efforts with in-state, regional, and national U.S. Geological Survey and National Institutes for Water Resources programs in support of [Water Resources Research Act priorities](#).
- Strengthen and expand engagement with North Carolina's Department of Environmental Quality through sharing of research results and extension and educational opportunities.
- Support and expand [NC Sedimentation Control Commission](#)’s research, education, and technology transfer programs to protect land and natural watercourses from erosion and sedimentation impacts, as outlined under the state’s Sedimentation Pollution Control Act of 1973.
- Partner with [North Carolina’s Water Resources Association](#), the state section of the American Water Resources Association, to coordinate educational and professional development workshops for its membership and other water resources professionals.
- Lead North Carolina’s [Watershed Stewardship Network](#), a collaborative initiative that supports people working to protect and restore their local waters by providing opportunities for sharing successes, skill building, and networking among peers statewide.
- Facilitate and expand the Urban Water Consortium, a group consisting of 12 of NC’s largest water and wastewater utilities, which sponsors research, development, and technology transfer needs in support of urban areas and water utilities statewide.
- Facilitate and expand the Stormwater Consortium, currently consisting of 9 municipal stormwater programs, which sponsors research and technology transfer on urban stormwater and management issues.

- Develop and facilitate regular discussion forums aimed at addressing difficult water issues in North Carolina.

### **STRATEGIC PRIORITY 3**

#### **Provide Training and Workforce Development Opportunities**

NC WRRI is committed to supporting the next generation of water professionals. Employment of underrepresented minorities (URM) and women in the geosciences, life, physical, and social sciences continues to lag whole population demographics (3). While degrees awarded to URM students and women in science and engineering have increased moderately over the past decade (4), there is significant room for improvement including providing opportunities for professional and workforce development and exposure to a range of future professional paths. Additionally, continuing education opportunities for current and future water resources management professionals are critical for expanding expertise and technical applications needed to address new and emerging challenges.

#### **NC WRRI will:**

- Expand undergraduate and graduate student research funding opportunities.
- Expand networking and professional development opportunities for students throughout the year including at the annual water conference.
- Increase funding of students from underrepresented backgrounds and Minority Serving Institutions.
- Host workshops and trainings, and partner with other organizations to offer professional development hours or credits for professionals, including but not limited to: engineers, surveyors, geologists, landscape architects, and soil scientists.
- Coordinate with and support the NC Department of Environmental Quality's Division of Energy, Mineral, and Land Resources planning of annual workshops for local government erosion and sediment control programs.

### **STRATEGIC PRIORITY 4**

#### **Increase Environmental Literacy**

NC WRRI's contribution to environmental education and water literacy efforts across the state is growing. Engaging young people in water-related educational programming and environmental stewardship increases awareness and opportunities for civic engagement and opens up potential career pathways and future opportunities.



**NC WRRI will:**

- Strengthen access to research results and education programming through a range of communication platforms in order to expand awareness, technical transfer, and environmental literacy.
- Increase contribution of WRRI-funded faculty and staff technical expertise to relevant state and local decision-making committees.
- Partner with organizations to raise awareness and interest among K-12 students about water related careers, including focusing on URM populations in science, technology, engineering, and mathematics.
- Support and collaborate with education partners to engage K-12 students, teachers, and informal educators with lessons and activities in the classroom and field.
- Expand public access to research findings, technologies, and impacts arising from funded projects.

## Communicating Results

The North Carolina Water Resources Research Institute is committed to supporting timely water resource research and outreach. Program results are available to help state and local decision makers, industry practitioners, and the public address pressing water resources needs and take action. In collaboration with many partners, NC WRRI works to deliver effective water resource management information resulting in significant environmental, economic and educational benefits across the state.

## References

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4. National Center for Science and Engineering Statistics. 2021. *Women, Minorities, and Persons with Disabilities in Science and Engineering: 2021*. Special Report NSF 21-321.