

NERR or Far!

The Reserves Are Where You Are

Episode 1: Welcome to the NERRS

The **National Estuarine Research Reserve System (NERRS)** is a system of 30 coastal sites, spanning 1.4 million acres in 24 states and Puerto Rico, created to protect and study estuarine ecosystems. The word **estuarine** describes an environment where freshwater meets saltwater, most often an area where a river meets the sea. Administered by the **National Oceanic and Atmospheric Administration (NOAA)** under the **Coastal Zone Management Act (CZMA)**, these sites are living laboratories where scientists and stakeholders collaborate to



develop place-based solutions to understand, conserve, and restore coastal areas so they can benefit local communities for generations. They do this through various projects and initiatives related to research, education, coastal training, and **stewardship**. These are the four pillars, or focuses, of the reserve system.

In this series, we will be looking at 7 NERR sites in the southeastern U.S. located across 4 states: North Carolina, South Carolina, Georgia, and Florida. The first site is the NCNERR, which consists of four separate NERR sites: Currituck Banks, the Rachel Carson Reserve, Masonboro Island, and Zeke's Island. It also hosts six other state-protected sites across North Carolina's coastline. The next two sites are located in South Carolina: the North Inlet - Winyah Bay NERR in Georgetown, SC, and the ACE Basin NERR in Charleston, SC. Georgia hosts the Sapelo Island NERR, and Florida has three NERR sites: the Apalachicola NERR in Eastpoint, FL, the Guana Tolomato Matanzas (GTM) NERR close to St. Augustine, FL, and the Rookery Bay NERR in Naples, FL.



Two common **misconceptions** about the NERRS are that the reserve system is the same as the National Park Service, and on the other end of the spectrum, that the two are so different that the reserves don't want the public visiting reserve lands on their own. These are both untrue! According to the NERRS Science Collaborative, the mission of the National Estuarine Research Reserve System is "to practice and promote stewardship of coasts and estuaries through innovative research, education and training using a place-based system

of protected areas". The mission of the National Park Service is "to preserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education and inspiration of this and future generations".

Though they may seem similar, what sets the NERRS apart from parks at the national and state level is this focus on "place" and the idea of a strong working relationship with the local community. There isn't as much of a focus on preserving the sites exactly as they are.



Instead, these reserves are a sort of living laboratory where scientists can study and monitor estuarine systems, students and visitors can learn hands-on, and all kinds of coastal decision makers can discover ways to better manage coastal resources through various trainings. You can even use reserve lands recreationally to get out into the estuary and go kayaking, bird watching, fishing; the options are seemingly endless. Both parks and the NERRs have numerous programs to help foster environmental stewardship and to manage protected lands. When it comes to the NERRs though, goals and initiatives, whether they be stewardship related or more research-focused, are crafted specifically with coastal areas and estuaries in mind, as well as the associated local economies. The NERRS truly earns the title "locally significant, nationally impactful" through its work to address priority issues unique to the reserve coastal communities as well as common threats across the NERRS. Some of these threats include coastal development, a changing climate, managing **invasive species** and changes in **biodiversity**.

So what do staff within each of the reserve pillars (stewardship, research, coastal training, education) do to address reserve priority issues and to help ensure happy, healthy estuaries on our southeastern coast? Stewardship staff at the reserves focus on **initiatives** that will help keep the estuary in its best shape, like invasive species monitoring, overseeing **controlled burns** at the reserve, performing trail maintenance, and coordinating volunteer days. Research staff at the reserve study estuarine species, from small plankton to large mammals, monitor water quality and weather, create data-rich reserve maps, and more. The information they collect can be used to help improve conservation and resource management locally and nationally!

Coastal training staff works to promote scientific understanding amongst a variety of different decision-making audiences in coastal communities. They present data from the reserve to a wide range of **decision-makers**: elected officials, city and local planners, people from the water management district, people who issue permits, realtors, even ecotour operators. By hosting programs at the reserves, the coastal training program is able to get information in professionals' hands that will help them better understand how they also have the ability to protect our coastline. Last but not least, educational staff serve both children and adult visitors through hands-on lab and field experiences, create virtual educational materials, and lead other various environmental outreach initiatives in coastal communities! Through stewardship, research, coastal training, and education, the NERRs are working to create more

resilient and better-informed communities on our coasts in the face of a changing world and climate.

QUESTION TIME

1. What are some of the issues that NERRs in the southeast are working to address?

coastal development, a changing climate, managing invasive species and changes in biodiversity

2. What is one difference between the NERRs and the National Park Service? A similarity?

Difference: 1) with the NERRS, there isn't as much of a focus on preserving the sites exactly as they are, 2) the reserve is a "living laboratory", 3) the NERRS are very place-based / goals and initiatives, whether they be stewardship related or more research-focused, are crafted specifically with coastal areas and estuaries in mind, as well as the associated local economies.

Similarity: 1) both parks and the NERRs have numerous programs to help foster environmental stewardship and to manage protected lands, 2) you can use their lands for recreation.

3. The mission of the NERRS is "to practice and promote stewardship of coasts and estuaries through innovative research, education and training using a place-based system of protected areas". How do each of the reserve's pillars practice and promote stewardship?

Stewardship staff - focus on initiatives that will help keep the estuary in its best shape, like invasive species monitoring, overseeing controlled burns at the reserve, performing trail maintenance, and coordinating volunteer days.

Research staff - study estuarine species, from small plankton to large mammals, monitor water quality and weather, create data-rich reserve maps, and more.

Coastal training staff - works to promote scientific understanding amongst a variety of different decision-making audiences in coastal communities.

Educational staff - serve both children and adult visitors through hands-on lab and field experiences, create virtual educational materials, and lead other various environmental outreach initiatives in coastal communities

4. There are a number of recreational opportunities at the NERRS and chances for hands-on learning. How do you think experiencing the outdoors for yourself impacts your feelings of stewardship towards it?

No right answer. Hopefully after being outdoors, they want to be better environmental stewards!

5. What are some examples of coastal decision-makers?

elected officials, city and local planners, people from the water management district, people who issue permits, realtors, ecotour operators, etc.

6. What NERR sites are closest to you? Research a reserve of your choice. What are some specific things that this reserve studies or programs that they provide to visitors that you find interesting?

Depends upon where you're at and student preferences! Selected reserve sites and locations are listed at the beginning of the article.

7. Match the projects below with the reserve pillar that would likely be responsible for it!

Carefully removing kudzu and other non-native plants found on reserve lands	_____	Stewardship
Leading a class for commercial seafood dealers on shell recycling and other sustainable practices	_____	Education
Leading guided exploration hikes for all ages at the reserve.	_____	Research
Completing a vegetation survey twice per year to observe changes in the dominant salt marsh plant species	_____	Coastal Training

ACTIVITIES

- Your class has been recently employed as NERR staff!
 - Groups can be assigned a NERR pillar to represent and brainstorm a project they could do as that pillar to address the reserve threats mentioned in this article.
 - Groups are assigned one of the issues and have to come up with an example for each pillar on how to potentially address it.
- Students create short presentations on one of the 7 NERR sites either with a partner/group or individually. At the minimum, students should share where the

reserve is, an interesting fact about the region, and a detail about their stewardship, research, coastal training, and education programs. This builds upon question 6.