

NERR or Far:

The Reserves Are Where You Are

Episode 6: Environmental Stewardship 101

So what does it mean to be an environmental steward? Erik Smith, reserve manager of the North Inlet - Winyah Bay **National Estuarine Research Reserve (NERR)** in South Carolina, says that **stewardship** is probably the most important thing that the NERRs do, and it embodies every aspect of what a reserve does. There are a lot of different definitions of stewardship, but his favorite embodies the notion of careful and responsible management of something that has been entrusted in your care. The coastal zone has been entrusted to us, and we need to responsibly care for and manage it because it is so very important!

You don't need to work at a reserve to be a steward of the coastal zone. We can all be caretakers of our environment! Some ways to be good environmental stewards at the reserves and also in your own community are by planting native plants in your yard, making sure that you're putting down the proper and appropriate amount of fertilizer at the right time, exercising proper catch and release when you're fishing, and respecting the space of wildlife. Native plants are very important for



pollinators, for migratory birds, and for many species of wildlife moving through the area and your landscape. Native gardens use less water, require less **maintenance**, reduce the spread of **invasive species**, and create a diverse, ideal habitat for native wildlife.

Fertilizer is great for yards, but if it washes off, it can be very harmful for the estuary and local waterways. Too much of a good thing can be a bad thing, and in this case, too many nutrients entering waterways from fertilizer runoff can lead to harmful algal blooms and negative impacts on local water quality. Definitely feed and take care of gardens, lawns and outdoor plants, but ensure that you do not use more fertilizer than you need and refrain from putting fertilizer down before or soon after it rains.

The coastal training program at the Apalachicola NERR in Florida offers a program called the “Stewardship Series”, an ecosystem studies program for residents and visitors to the reserve. One of their courses is focused on **bay**-friendly landscaping, an important topic for people who have recently moved to Florida. The state can be an entirely different world when it comes to caring for your yard. In many parts of Florida there isn't soil, there's sand, so this course is aimed at helping people understand

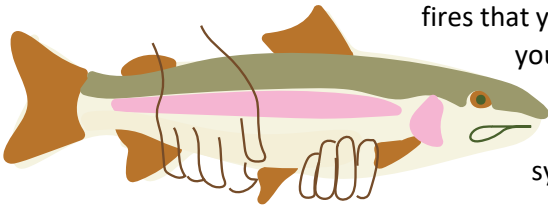
the very different environment they've come to and the value of it. A big part of the discussion is grass. Typical lawn grasses are difficult to grow in the Florida heat, especially on sand, and as a result it takes a lot of water. A lawn of native grasses and dollar weed is a more sustainable option. A lot of people enjoy the look of manicured lawns and end up spraying and fertilizing to keep the lawns, which if not done properly and thoughtfully can impact the bay. Many parts of Florida are trying to discourage these kinds of lawns so that it's more of a natural environment, especially when the state has many **migratory species** landing there, looking for sources of food and places to rest.



When you're fishing at reserves or locally where fishing may be regulated, make sure that you know how to exercise proper **catch and release** and protect the fish you reel in. You have an opportunity to engage with these animals for just a short time, and you don't want to harm them after they're released. This sort of ties into the overall idea of respecting the space of wildlife. If you see birds that are nesting or sitting on a beach, they're conserving their energy, and if people are disturbing them or impacting them in any way, it's going to affect their health and their fitness. Don't go past the **shorebird** signs if there are any posted, and if there are signs that say "no dogs", make sure to take your canine pal elsewhere. The presence of dogs can cause nesting birds to stress, reducing their willingness to **forage** or foraging efficiency, and some off-leash dogs may trample nests or even catch and try to eat birds, chicks, or eggs.



The NERRs are trying to balance people being on and enjoying reserve land while also allowing a safe space for wildlife and nice healthy habitat. So if there are signs or rules, please make sure you're following them! All reserve rules are easily displayed and easy to find on their websites, and they just ask that people minimize their impact and "**leave no trace**" when you're enjoying these beautiful places. What does it mean to "leave no trace"? This phrase means that whenever you're out in nature, all you should be leaving is your footprints! Take trash with you, put out fires that you start if you're camping, and don't take any natural objects that you find with you, snag a photo instead. Taking responsibility and being aware of the impacts that your actions can have on the environment is important to the health and future of these systems.



Another way to get involved and make a difference no matter where you are is by participating in **citizen science** projects. If you're near a reserve, you can help out with projects like the oyster monitoring and butterfly monitoring network at the GTM NERR in Florida, the new saltwater Adopt-a-Stream program at the North Inlet-Winyah Bay NERR in South Carolina, or volunteer or **intern** any of these reserves sites in the southeast. More information on the different site opportunities can be found on the NERR or Far podcast web page or the websites of any of these reserves. There's a ton of other citizen science programs out there. Even literal programs such as apps you can get on your phone!

eBird is a program that helps you identify bird species and log your bird sightings. This is a useful tool because it also gives scientists an understanding of how birds are using a variety of habitats and

how that use may be changing over time. There's also **iNaturalist**, a program where people can not only record and identify birds, but they can also record reptiles, amphibians, plants, bugs, all sorts of life! Apps like iNaturalist and eBird are great because they build a huge **database** that then becomes very powerful in understanding the **distributions** and the timing of different species at broad scales. This data is super useful for scientists not only at the NERRs, but also scientists across the country. In addition to actively collecting data that will help us better understand plant and wildlife distributions, you are also becoming more familiar with identifying species, which is a great skill and fun experience!

The NERRs of the southeast are incredible stewards of the coastal zone. You too can be an environmental steward at the reserves and in your communities. Get involved in conservation outreach if you're interested, and always remember to "leave no trace" when you're out in nature!

QUESTION TIME

1. What are some ways that you can plan or modify your landscape so that it is better for wildlife and water quality?

By planting native plants and grasses in your yard and making sure that you're putting down the proper and appropriate amount of fertilizer at the right time!

2. How can human disturbance impact nesting birds on beaches?

If you see birds that are nesting or sitting on a beach, they're conserving their energy, and if people are disturbing them or impacting them in any way, it's going to affect their health and their fitness.

3. Why is it important to obey "no dogs" signs at the reserves?

The presence of dogs can cause nesting birds to stress, reducing their willingness to forage or foraging efficiency, and some off-leash dogs may trample nests or even catch and try to eat birds, chicks, or eggs.

4. In your own words, what does it mean to "leave no trace"?

The definition given in the article is: "leave no trace means that whenever you're out in nature, all you should be leaving is your footprints! Take trash with you, put out fires that you start if you're camping, and don't take any natural objects that you find with you, snag a photo instead."

5. How can where you live impact the best ways to care for a lawn?

Typical lawn grasses are difficult to grow in the heat and especially on sandy soil, so if you live in a place that has this sort of environment (like Florida), it can take a lot of water and fertilizer to maintain a traditional lawn.

6. What are the benefits of citizen science programs and apps like iNaturalist and eBird?

In addition to actively collecting data that will help scientists better understand plant and wildlife distributions, you are also becoming more familiar with identifying species, which is a great skill and fun experience!

7. Good environmental steward or not?

Derrick spots a group of birds resting along the shoreline during his family's beach day. He decides to run at them, causing the birds to flush (fly away).

Emiah uses circle hooks when she goes fishing, making it easier to remove hooks and increasing survival chances of her catch.

Eloise and her family plant a garden of native plants in their backyard.

Kate sprays fertilizer on her lawn in the evening before she heads to the dentist. The sky looks particularly cloudy.

Marcus and his friend Gabe go on a weekend hike. Before leaving the trail, they decide to carve their initials into a large tree to commemorate the trip.

Answers: **not** (not giving wildlife space, threatening shorebird health and fitness), **good steward** (proper catch and release), **good steward** (planting native plants for pollinators and native wildlife), **not** (the rain will wash the fertilizer into local waterways, potentially causing a harmful algal bloom or at least impacting water quality), **not** (they did not "leave no trace")

ACTIVITIES

- Students design a flyer, sign, or piece of virtual media that tells others how to be good environmental stewards at the reserves or in their community.
- Service opportunity! Students research local citizen science projects and/or ways to get involved at a local reserve and plan a class volunteer day!