

NAGS HEAD

2024-2025 Annual Report

TOWN OF KILL DEVIL HILLS

OCTOBER 2025

The Nature
Conservancy 
North Carolina

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1.0 VISITOR SERVICES

Visitor services, especially through the summer months, continue to be an important component of Nags Head Woods Preserve (Preserve) management.

This year we have focused our efforts on trail improvements and efforts to improve our Pavilion building exhibits. Our vision for the pavilion project is to create multi-purpose space meetings as well as an open space for the public to learn more about Nags Head Woods Preserve and The Nature Conservancy's (TNC) work.

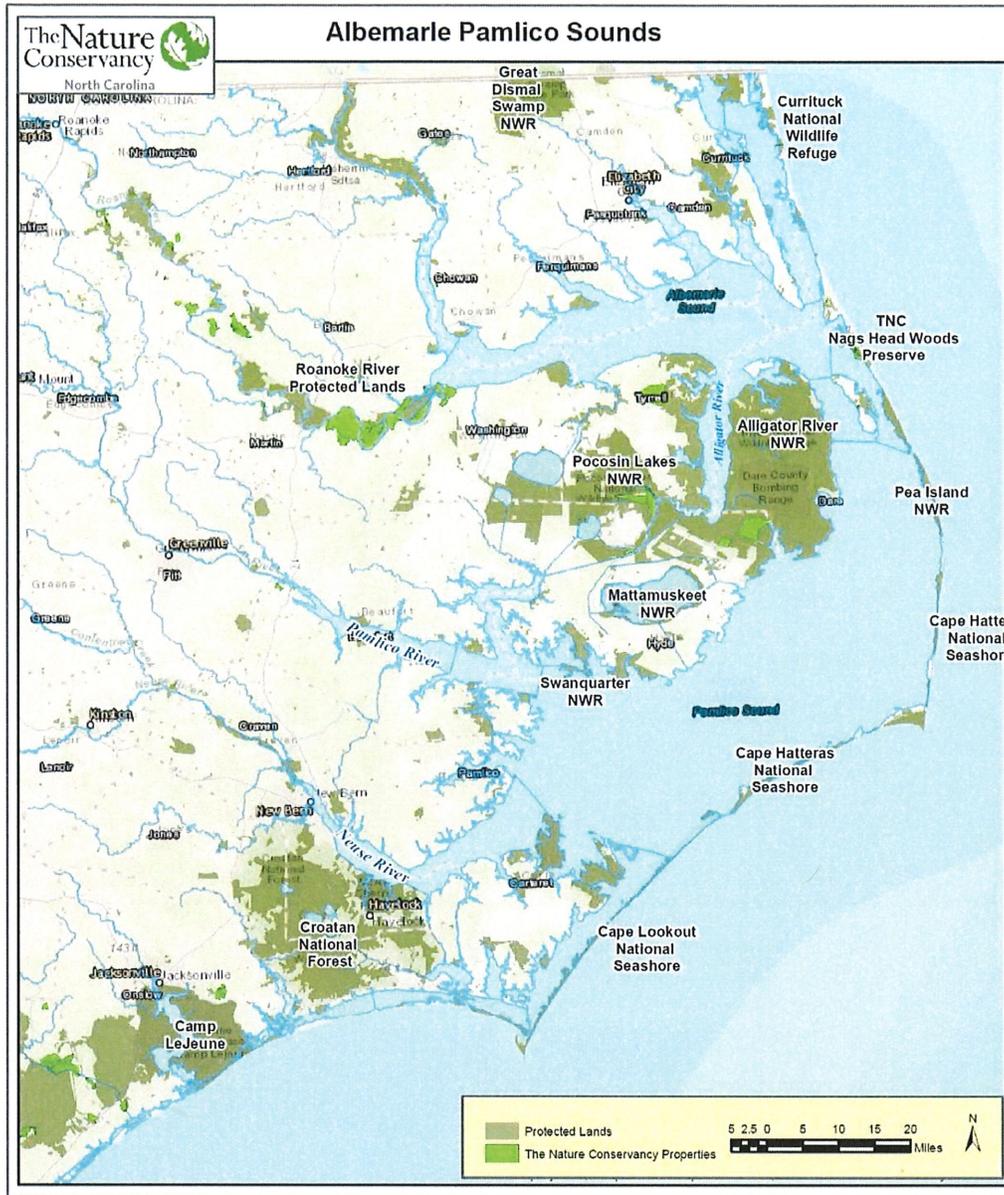
Indoor visitor reception is generally available most weekdays during normal business hours. Restrooms, drinking fountain and water bottle refill services, air conditioning, a few comfortable chairs and opportunities to interact with staff are often appreciated by hikers during the hot months.

1.1 Office

Our offices are routinely open during the regular work week. But some days during the regular work week, you may not see us due to a reduced staff who are still working flexible, hybrid work schedules and juggling field work. We strive to have both the Nags Head Woods Preserve administrative office and indoor visitor facilities open for visitors during the regular work week, Monday – Friday 9 am to 5 pm, especially during the summer months when visitor numbers are high.

1.2 Staff

Nags Head Wood Preserve is home base for The Nature Conservancy's Albemarle-Pamlico Sounds Office. We have four staff based here who live on the Outer Banks as well as our Coastal Scientist who is primarily based out of a home office in Edenton. Their work stretches from the Preserve to the lands and waters around the Albemarle-Pamlico Sounds which includes the five river basins – Pasquotank, Chowan, Roanoke, Tar-Pamlico, and Neuse – and six major sounds – Albemarle, Pamlico, Core, Croatan, Currituck, and Roanoke - spanning northeastern North Carolina and southern Virginia. See map 1 for region and protected lands.



Map 1. Protected lands in the Albemarle-Pamlico Sounds region

In January Kevin Zorc joined the team as our part-time Nags Head Woods Preserve Assistant. Kevin is at the Preserve 3 days/week, helping us with maintaining our trails and visitor services.

Kevin is a long time Outer Banks local with a wealth of knowledge and experience in public safety and emergency management, municipal fire service management, and wildlife resource work.

He previously worked for the Town of Nags Head for over 34 years, rising through the ranks to Fire Chief. In his past Town role, he was a critical supporter in helping The Nature Conservancy implement controlled burning in Nags Head Woods Preserve.

Living in Nags Head where he raised a family, he has dedicated his time to numerous community organizations such as The Elizabethan Gardens, Friends of the Mountain to Sea Trail and the American Red Cross.

This winter thanks to Kevin all our staff participated in CPR and First Aid training led by Frank Spruill, of OBX CPR Inc. Mr. Spruill generously donated an automatic external defibrillator (AED) to ensure first aid response and lifesaving resources are available at our Nags Head Woods Preserve.

We are so glad to have Kevin as part of the team!

Other staff at Nags Head Woods Preserve and part of The Nature Conservancy's Albemarle-Pamlico Sounds Office include:

- Aaron McCall is our Northeast Land Steward. Aaron has been a fixture at Nags Head Woods Preserve for the past 21 years but his work also includes management of the over 75 other large tracts of land owned or managed by The Conservancy in this region. He also oversees the planning, design, and implementation of ecological restoration projects such as building of shoreline oyster reefs or reconnection of floodplain and creek habitat along the Roanoke River.
- Lora Eddy is our Conservation Coordinator and Resilience Specialist. She supports stewardship activities and office management at Nags Head Woods Preserve this extends from maintaining our two pollinator gardens to support of our broader restoration and protection work across the A-P region. Her resilience work is focused on providing technical assistance to communities to facilitate their use of natural and nature-based strategies to manage their risk to coastal hazards and the impacts of climate change.
- Eric Soderholm, who is our Coastal Wetlands Restoration Lead, coordinates the restoration of peatlands and forested wetlands on both public and private lands in the Coastal Plain of North Carolina to improve their biodiversity, ecosystem function, resiliency, and climate mitigation potential of these incredible natural systems.
- Dr. Aaron Bunch is our Coastal Applied Scientist and leads our planning and coastal conservation work. He joined TNC in September 2024 and he is guiding our future projects and science that will advance the conservation and restoration of our important coastal habitats in NC.



Photo 1 Staff accepting AED donation from Frank Spruill

1.3 Preserve Visitation – Trail Counters

We continue to monitor the six infrared trail counters which were installed in Nags Head Woods Preserve in January 2021. This data helps us understand the use of the preserve for both trail and road traffic.

Our visitor center trail counter is still registering about 79 people per day, and since it's installation our annual average count of visitors who come to our main entrance is approximately 28,000. This does not capture all the use as some of our visitors are locals who routinely hike our trails bypassing our visitor center and counter. Since this counter was installed October 2023 we have counted 65,909 visitors.

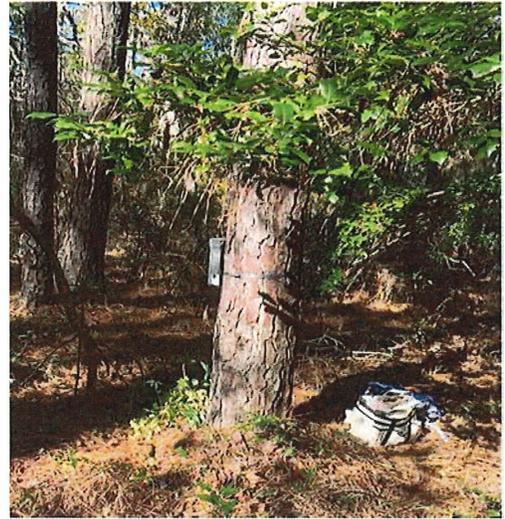
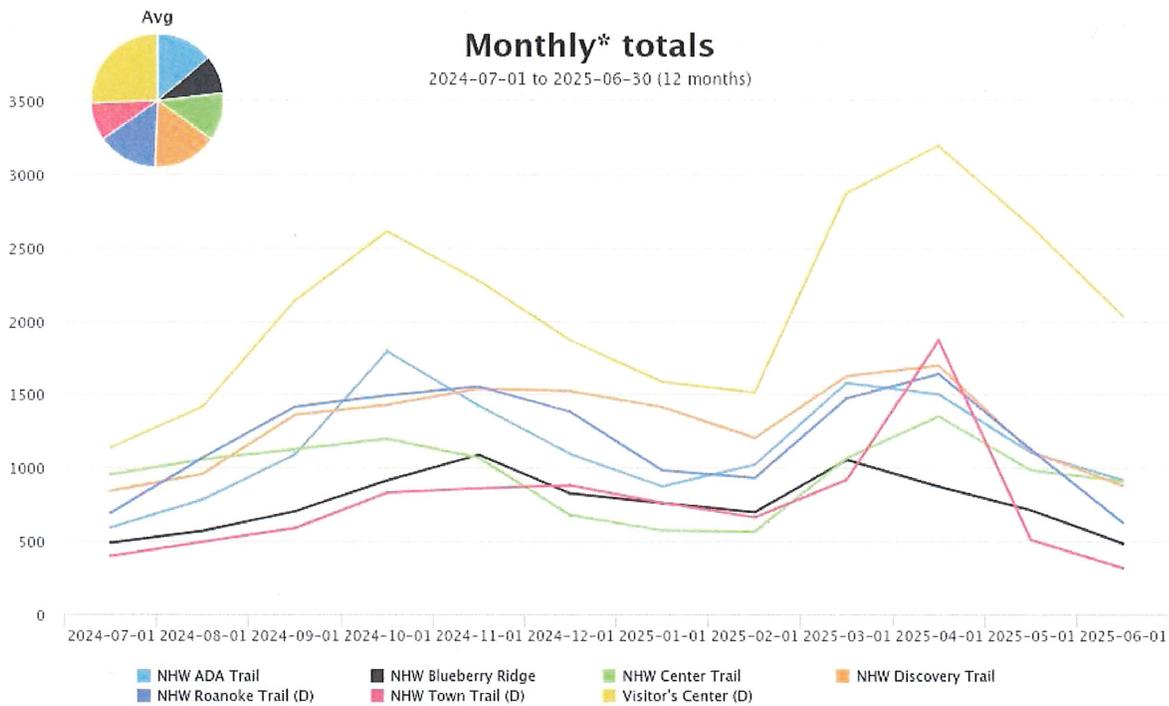
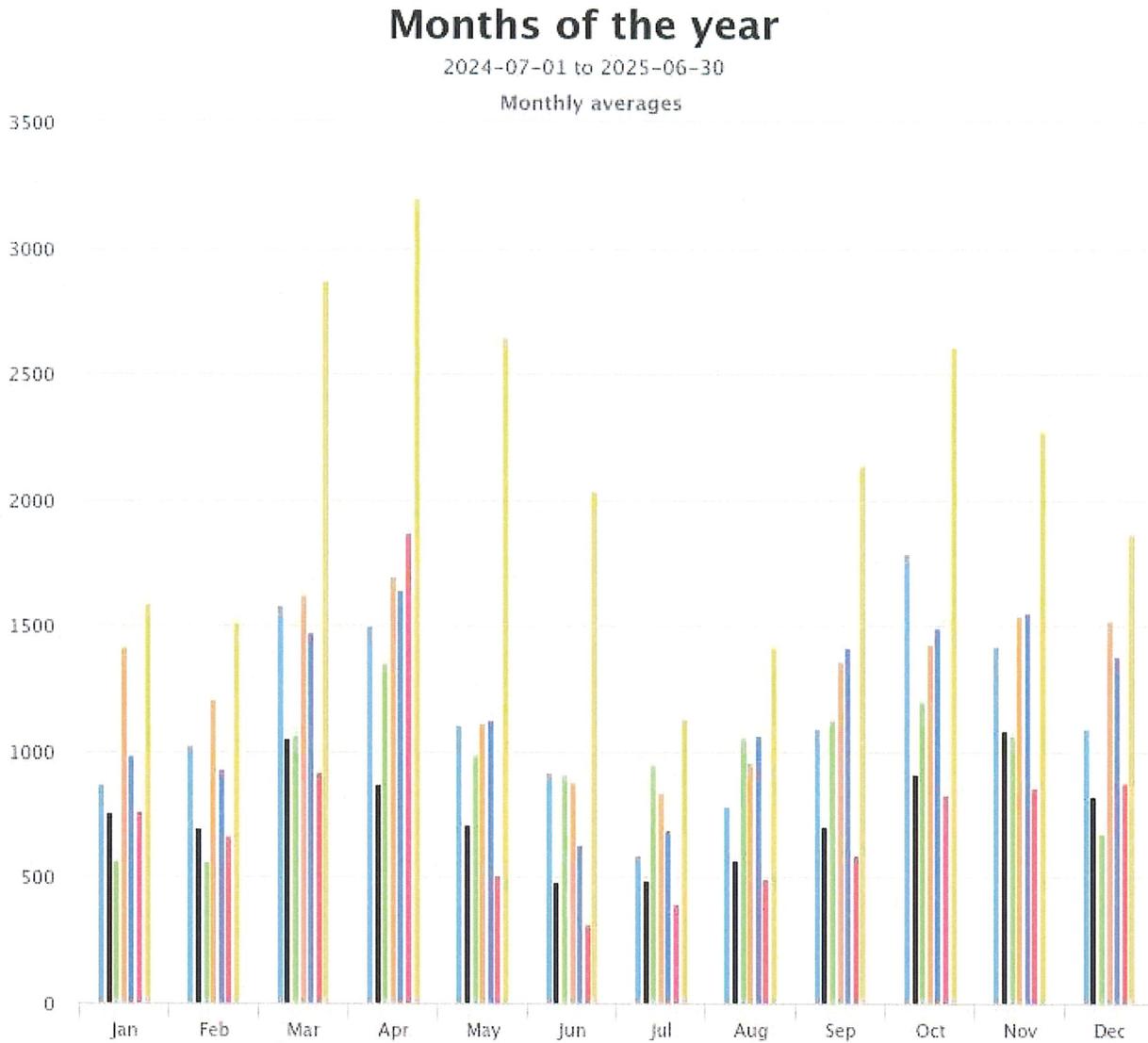


Photo 2 - Trail counter

Therefore, we continue to look at our trail counters to estimate use. These counters are reporting 24 – 44 hikers per day or between 700 – 1,200 hikers per month on each of the trails. Our most popular trails continue to be our Discovery, Roanoke, ADA, and Center trails.



Graph 1. All Trail Counters by Month Line Graph



Site Name	Average	Median	STDV	Min	Max
NHW ADA Trail	1,148.3	1,092.0	341.0	592.0	1,792.0
NHW Blueberry Ridge	763.9	735.5	189.4	485.0	1,088.0
NHW Center Trail	960.8	1,020.5	234.4	566.0	1,353.0
NHW Discovery Trail	1,298.5	1,387.0	281.4	841.0	1,697.0
NHW Roanoke Trail (D)	1,199.2	1,254.5	327.5	627.0	1,640.0
NHW Town Trail (D)	757.3	712.0	385.9	316.0	1,870.0
Visitor's Center (D)	2,107.5	2,087.0	608.7	1,136.0	3,195.0

(D) = divide by 2 applied

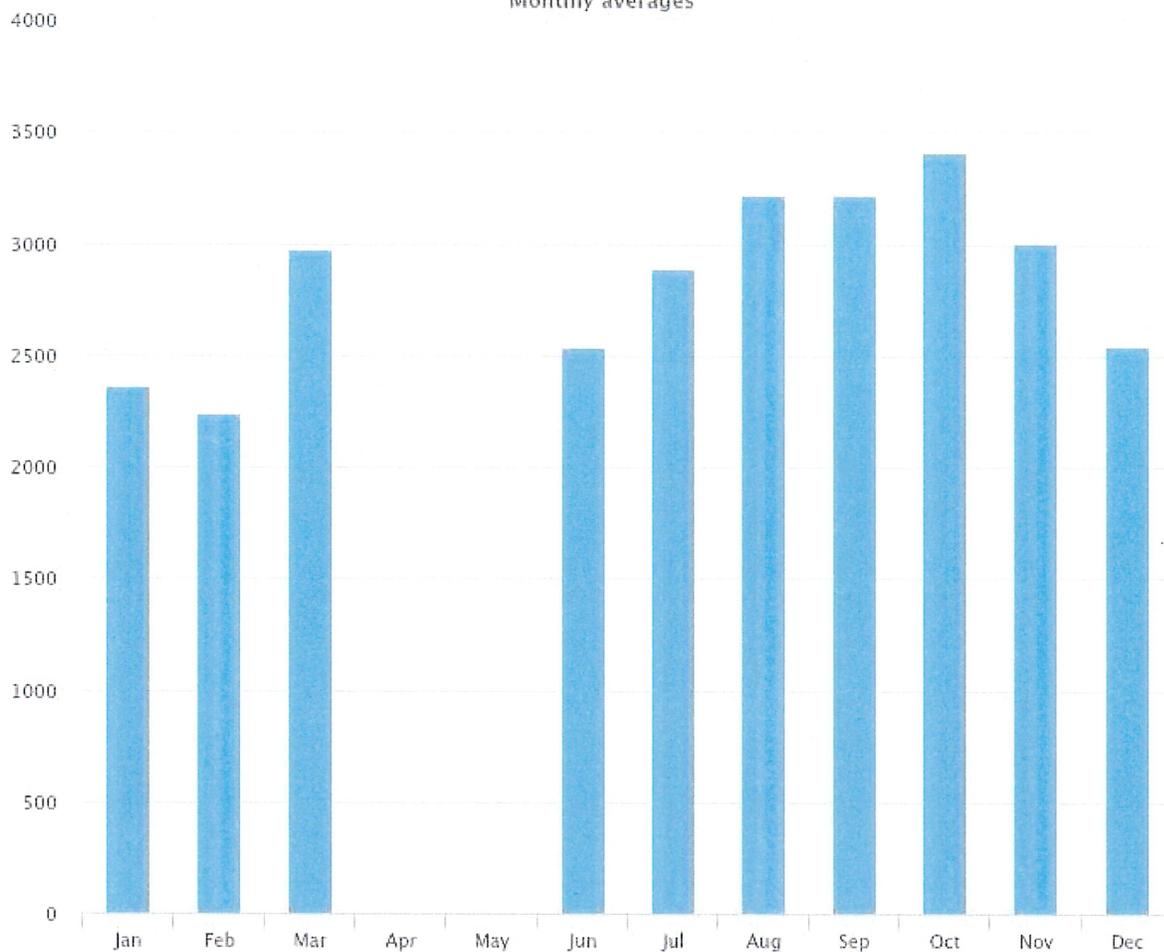
Graph 2. All Trail Counters by Month Bar Graph

Our roadside vehicle counter helps us capture some of the activity within the woods not documented by the trail counters. This reporting period our counter malfunctioned and we only have 10 months' worth of data. For this reporting period, we saw an average of 2,840 vehicles per month on Ocean Acres and Old Nags Head Wood Road.

Months of the year

2024-10-06 to 2025-10-21

Monthly averages



Site Name	Average	Median	STDV	Min	Max
NHW Vehicle Counter (D)	2,840.1	2,930.6	377.3	2,240.0	3,411.4

(D) = divide by 2 applied

Graph 3. Ocean Acres Vehicle Counter by Month

1.4 Signage

This year we continued to improve upon our way-finding signage. As a self-guided facility, signage is a critical part of our visitor services.

Past years we have reported on the installation of new larger directional signs at our trailheads as well as two new entrance signs. This year we replaced the YMCA trailhead informational sign, and we



Photo 3 - New YMCA informational signage, image credit: Lora Eddy

added new vinyl logos and a large vinyl trail map to the windows of our visitor center buildings to help improve the flow and guide our visitors. These improvements have greatly improved the visitor experience by enhancing their comfort, safety, and ease of access.

These projects were funded by the Town annual contributions as

well as a generous grant from the Outer Banks Community Foundation.

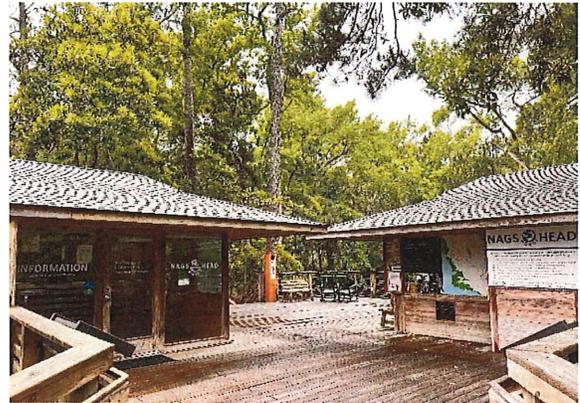


Photo 4 - New entrance signage – vinyl logos and larger trail map, image credit: Lora Eddy

1.5 Audio Tour

Since its debut in the summer of 2019, our audio tour has been well received. Summer camp programs and visitors can call in for access to a guided hike about the 18th century community that was present in the Woods. The tour is based upon audio interviews for the book “Everyone Helped His Neighbor: Memories of Nags Head Woods”.

The audio tour has a cumulative number of 1,343 unique calls.

In 2019 in partnership with Manteo Elementary School Dual Language Immersion teacher, Alejandra Oropeza we added a Spanish translation of the audio tour which was highlighted on our Facebook and Instagram social media posts during Hispanic Heritage month. During the reporting period our Spanish language version was accessed 25 times.

1.6 Facilities and Trails

Maintaining our over 8 miles of trails, 5 wooden bridges, 7 wooden benches, and 1,000 linear feet of wooden boardwalk on the ADA trail is a big part of the work at Nags Head Woods Preserve.

This year we completed repairs to our wooden decking on our ADA trail. Much of this project has been completed with assistance from App State over the last 3 years. Additionally, we completed a replacement of wooden decking on our Roanoke trail bridge and the two benches on this section of bridge which overlooks the marsh.

Staff and volunteers continue to work on replacing sections of our wooden boardwalks as needed.

Thanks to a generous \$25,000 grant from the Jandy Ammons Foundation, we have begun improvements to Refresh our unique Pavilion space. The Jandy Ammons Foundation is a North Carolina based public charitable organization whose mission is to improve local communities through grant projects that will enhance wildlife habitats, park settings, educational surroundings, artistic installations, or church mission projects.

Currently we are in the process of implementing some of the improvements to our Pavilion meeting space. With this funding we are adding a 3-dimensional model of Nags Head Woods Preserve, as a centerpiece for visitors' learning and exploration in this space as well as 75" interactive touchscreen display along our back wall.

We continue to seek funding for our Pavilion refresh project to complete our vision for this space.



Photo 5 – Dedicated volunteer Chip Walton working with App State volunteers completing our ADA Trail boardwalk repairs



Photo 6 – Repaired Discovery trail boardwalk decking and benches

Our next priority is improvements to the static displays and information on the perimeter wall. These improvements and educational exhibits will enable us to open this space as an indoor area for our visitors.

Our goal is to educate community members and visitors about the importance of Nags Head Woods Preserve and the benefits of conservation.

We are planning for a spring opening to the public and a Community Open House to publicize and promote the new preserve model and Pavilion exhibit improvements at Nags Head Woods. Stay tuned as we open this building to the public and continue to work on improvements to our Pavilion space and trails.

These projects help ensure a safe and educational visit for all kinds of visitors.

Photo Credits: Lora Eddy/TNC



Photo 7 – 3D model packaged ready for shipping from contractor

2.0 Partnerships, Volunteers, Community

In addition to everyday use of preserve visitors for hiking, birding or enjoying nature, the Preserve is an important resource to our communities. Staff engage with local visitors, volunteers and partner organizations to create successful outreach events, career development opportunities, and support science and research.

2.1 Interns and Volunteers

In the fall of 2024, we hosted 2 student volunteers from East Carolina University's Coastal Studies Institute Outer Banks Field Site Program. They helped with stewardship tasks around the Preserve such as trail maintenance and invasive species removal. We are again hosting interns from the Field Site Program, and this semesters students are focusing their capstone study on Nags Head Woods – stay tuned for their findings which will be presented at the Coastal Studies Institute on Thursday December 11, 2025 at 3 pm.

In March 2025, we hosted seven students from Appalachian State University at Nags Head Woods during their alternative spring break. With this small mighty crew, we replaced approximately 200 feet of wood decking on our ADA trail, conducted much needed invasive plan removal of thorny olive along Ocean Acres Drive within the Town of Kill Devil Hills tract, and replaced the 100 feet of decking and the two benches on our Roanoke trail bridge that crosses the marsh.



Photo 8 – TNC NHW Staff Kevin Zorc and Aaron McCall with 2025 App State Alternative Spring Break Group

We want to recognize our dedicated volunteer Chip Walton who for the past almost 4 years has been instrumental in these trail improvements he has been a great asset and mentored many of these student volunteers on basic carpentry and hand tools.

For our summer 2025, we welcomed 2 temporary staff as interns.

Amelia McDonald joined us for 12-weeks as a Duke Stanback intern. She reviewed information on submerged aquatic vegetation (SAV) restoration efforts along the North Carolina coast. She focused on identifying existing projects, compiling existing GIS mapping products, gathering data on restoration techniques, and highlighting the challenges to restoring this coastal habitat type.



Photo 9 - Intern Amelia McDonald, TNC Lora Eddy and conservation partner monitoring restoration project, image credit: Eric Soderholm



Additionally, Amelia helped us with monitoring our shoreline oyster reef restoration projects in the Pamlico Sound at Alligator River and Pea Island National Wildlife Refuges. Sites were sampled for oyster densities

as well as fish and invertebrates within the reefs.

Her findings have played a key role in our coastal planning process and will guide our future restoration work on oyster reefs and submerged aquatic vegetation both of which are critical coastal habitats.

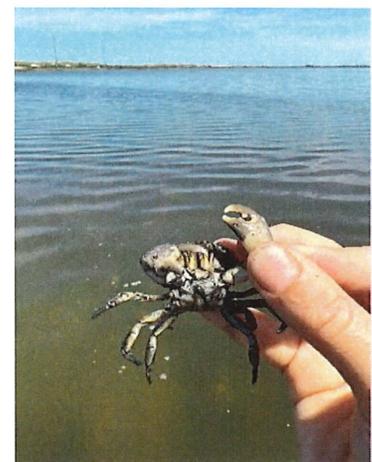




Photo 10 Anna Berg hosting visitors in the Pavilion.

Anna Berg joined the team for 8-weeks as our Visitor Services Intern to help with our seasonal influx of visitors. Anna primarily focused on advancing our Pavilion exhibits project as well as providing weekly guided hikes and open house to provide programming for our summer visitors. Additionally, she assisted with butterfly monitoring in the woods.

In total for our 2025 report period, we had over 798 Volunteer Hours logged at Nags Head Woods Preserve.

2.2 Education through Partnerships

We are happy to continue to support the Sea2Sound (S2S) program following Rhana Paris, NC Aquarium Outreach Coordinator's retirement. Rhana started this program over 5 years ago, and we are delighted that the new NC Aquarium Outreach Coordinator, Jenna Mercier picked up the torch.

This April 2025, she and NC Aquarium volunteers lead several 5th grade classes from First Flight, Nags Head and Hatteras Elementary's along our 1.5-mile Town Trail on a hiking exploration of the many ecosystems along this path from the Atlantic Ocean to the Roanoke Sound as part of the Aquarium's Sea2Sound (S2S) program. A total of 192 students participated this year.



Photo 11 – Lora Eddy on a guided hike

Throughout the year we offer guided hikes to small groups as staff time allows. For example, during this reporting period in our fall and winter months we hosted the Outer Banks Chamber of Commerce Leadership OBX and two field trips as part of the 2025 Friends of the Mountains to Sea Trail annual conference.

During our summer months when we have additional seasonal help, we offer weekly outreach programming

This summer our Kevin our part-time Preserve Assistant, and Anna Berg our Summer Visitor Service intern, led weekly guided hikes and open house events in June and July.

We also partnered with the NC Aquarium to host guided hikes for their summer camp program, and our local



Photo 13 – NC Coastal Reserve Summer Intern Sammy Suber at Open House event

North
Carolina
Coastal
Reserves
to provide

information about nearby reserve sites.

In total all these educational efforts reached over 440 visitors and students.



Photo 12 - TNC Intern Anna Berg leads summer visitors on guided hike image credit Kevin Zorc

3.0 Conservation, Management, Biology

3.1 Invasive Species

We continue to manage invasive plants within Nags Head Woods. This is hard work and a constant effort during the warmer months. The ecology of Nags Head Woods would be critically impacted without continued management and control of these invasive plants.

As mentioned above this year we focused on removing Russian/Autumn Olive from the Town of Kill Devil Hills tract along Ocean Acres Drive. This shrub is widely used by residents and commercial properties to create a border. The plant has thorns and a greyish green leaf that help distinguish them from other shrubs by the shimmery look of the silver scales found on it. It grows rapidly and has fragrant bell-shaped cream or yellow flowers that bloom in early spring.

Autumn olive is a problem because it outcompetes and displaces native plants. Invasive species like this thorny olive shrub are one of the major drivers for a loss of biodiversity.

Once this plant takes root, it is a prolific seed producer, creating 200,000 seeds from a single plant each year. Through fruit, birds will spread these seeds far and wide throughout pastures, along roadsides and near fences. Hand pulling autumn olive seedlings is an effective way to remove it. Attempting to

remove autumn olive by cutting or burning from can cause unwanted spreading, as the shrub germinates easily.

Thank you for doing your part in encouraging residents to not plant these species as many are commonly sold at smaller local and large landscaping stores. A good resource to check is the Invasive Plant Atlas of the United States: <https://www.invasiveplantatlas.org/>

See table below for detailed management and control practices:

Invasive	Management & Source
<p>Asiatic (common) dayflower - commelina</p>  <p>This Photo by Stefan.lefnaer is licensed under CC</p>	<ul style="list-style-type: none">• MANAGEMENT: Controlled by hand pulling• SOURCE: It comes in with the gravel for the roadways. It can spread aggressively and is resistant to herbicides. Seen along the roadway with blue/purple flowers and stems that are erect.

Invasive	Management & Source
<p>Bush Clover – lespedeza</p>  <p>This Photo by Katja Schulz is licensed under CC</p>	<ul style="list-style-type: none"> • MANAGEMENT: Controlled by hand cutting and herbicide • SOURCE: It comes in with the gravel for the roadways therefore very difficult to manage. It can form massive strips along the roadway with knee high long stems and small pea-like white flowers and seeds/spreads quickly.
<p>Russian Olive</p> 	<ul style="list-style-type: none"> • MANAGEMENT: Controlled by hand cutting and herbicide • SOURCE: Russian Olive is a popular ornamental sold extensively at local stores. Its seeds are brought in by birds, unknowing hikers, and vehicles.
<p>Oriental Bittersweet</p>  <p>Image via UGA Bugwood Center for Invasives</p>	<ul style="list-style-type: none"> • MANAGEMENT: controlled by hand cutting and herbicide • SOURCE: Once a popular ornamental and brought in by birds. It can form massive swaths of heavy cover in trees quickly.

Invasive	Management & Source
<p>Japanese Stilt Grass</p>  <p>UGA2308019 Image via UGA Bugwood Center for Invasives</p>	<ul style="list-style-type: none"> • MANAGEMENT: controlled by herbicide • SOURCE: It comes in with the gravel for the roadways therefore very difficult to manage. It can form massive swaths of ground cover vegetation quickly.
<p>English Ivy</p>  <p>Image via Flickr by James St. John</p>	<ul style="list-style-type: none"> • MANAGEMENT: controlled by hand cutting and herbicide • SOURCE: English Ivy also a popular ornamental for ground cover. brought in by birds, hikers and vehicles. Some English Ivy may have been planted by members of the Nags Head Woods community in the 18th and 19th century and by the company that had planned to develop the Woods in the 1970's.

3.2 Deer Management

Since 1995 we have coordinated with the North Carolina Wildlife Resources Commission to manage the Nags Head Woods deer population through a registered bow hunt. The bow hunt helps manage the deer population to alleviate nutritional stress and lessen the probability of further declines in herd health.

The bow hunt offers affordable, important heritage and consumptive recreation for local citizens who hunt. Many hunters provide important feedback about the Preserve.

The regular bow hunt season ran from September 7, 2024, to January 1, 2025, with an extended Urban Archery season which closed February 16, 2025. A total of 45 hunters registered for the 2024-2025 season, with a total of 4 deer harvested.

Hunter's requirements:

- A current North Carolina hunt permit,
- Attend an orientation session at Nags Head Woods,
- Complete registration forms including vehicle information,
- Pay a \$50 fee,
- Display a registration card in their vehicle while hunting, and
- Complete a year-end survey.

3.3 Management Challenges - Public

As land managers of a nature preserve our main goal is to care and steward the land and its unique plants and animals in order to achieve the long-term conservation of Nags Head Woods Preserve and its biodiversity. At Nags Head Woods we are balancing public use in certain areas and restricted use for areas that host/may host endangered or otherwise sensitive species. Because the foremost objective of The Nature Conservancy's work at Nags Head Woods is to protect and maintain the ecological integrity of the forest, public use of the preserve must be compatible with this intent.

As our community has grown and our tourism season has extended, we have seen more use on our trails. Our eight self-guided trails are available for public use for hiking, birding, photography, hunting, and exercising pets on the pet-friendly trails from dawn to dusk. Our trails are not open to bikes or Other Power-Driven Mobility Devices (OPDMDs) (utility vehicles, Segways, golf carts, etc.). We restrict use and access because the trails are narrow, and soil is delicate – just sand with a thin layer of organic material and this heavy more destructive recreational use is not compatibility with the preserve's conservation goals.

We have seen an increase in bike and e-bike trespass on our trails and along the powerline right-of-way that runs through the preserve. This has impacted trails and created greater disturbance to our delicate sandy soils causing erosion, compaction, exposing roots and creating ruts. Because most of our trails run through sensitive areas and uneven terrain this use unsafe for the ecosystem and the public.



Photo 14 – Evidence of bike use on our Town Trail

We have also had two critical emergencies on Old Nags Head Woods Road. The town-maintained graveled roadway is two direction single-lane road with pull-off spots, sharp curves, blind bends, and steep narrow sections thus we caution visitors about these factors when driving the road.

We appreciate our partnership with the Towns who maintain the graveled roadway that runs the length of the property. We are setting up meetings with town public works staff about right-of-way maintenance activities and our Preserve Assistant Kevin Zorc has spoken with town public safety officials about these incidents. We understand the challenges with public use and are glad to work together to keep the public and our Preserve safe. Thank you for supporting us and your staff in this.

4.4 Preserve Rules

We post our rules on our website:

nature.org/nagsheadwoods and they are posted at our visitor center.

- Always stay on designated trails. Dawn to dusk use only.
- Walking/hiking, birding, and fishing are allowed on our designated trails.
- Bikes, horses, and motorized vehicles are only allowed on graveled roadway.
- Pets are permitted on leash and only on pet-friendly trails. Please clean up after your pet.
- Catch & release fishing by permit in certain areas.
- No alcohol.
- Photo and video shoots are not allowed at the preserve.
- No weddings or unauthorized events are permitted.
- Bus parking is not available.
- No overnight parking.
- Research that takes place in Nags Head Woods must be permitted.
- Do not damage or remove any plants, animals or artifacts.
- Hunting is allowed by permit only and this use/activity is restricted to specified zones within the preserve. Hunting zones are mapped and posts/signage in place along the graveled roadway to mark these areas.



Photo 15 – Posted rules sign at Preserve Visitor Center



We are very grateful for the Town of Kill Devil Hill's support both this year and in past years!