

# Narragansett Bay Research Reserve – Stewardship 2025



*Responsible management of upland and coastal resources*

## Narragansett Bay National Estuarine Research Reserve (NBNERR)

The Reserve is part of the National Estuarine Research Reserve System (NERRS), a network of 30 coastal sites designated to protect and study estuaries – places where rivers meet the sea.

NBNERR is a partnership between the National Oceanic and Atmospheric Administration (NOAA) and Rhode Island Department of Environmental Management (RIDEM) and collaborates with numerous community agencies and organizations. We are based in the geographic center of Narragansett Bay in Rhode Island with various research and education programs focused on four islands: Prudence, Patience, Hope, and Dyer.

For more information, visit [www.nbnerr.org](http://www.nbnerr.org) or email [Jonathan.Mitchell@dem.ri.gov](mailto:Jonathan.Mitchell@dem.ri.gov).

## 2025 HIGHLIGHTS

- **Southern Pine Beetle Monitoring** showed a spike in numbers, initiating a rapid response protocol.
- **Prescribed Burns** were conducted over three days covering more than 40 acres.
- **Forest Health** projects to restore the oak forest and enhance the pine barrens began.
- **Osprey Monitoring** observed 14 successful nests with at least 20 fledglings.
- **Ticks** are still here... including a species new to the island, found by Dr. Sam Telford.



### NBNERR Mission

To preserve, protect and restore coastal and estuarine ecosystems of Narragansett Bay through long-term research, education and training.

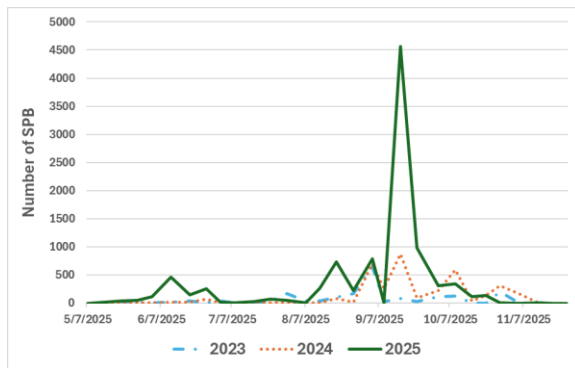


# Southern Pine Beetles on Prudence Island

The Southern Pine Beetle (*Dendroctonus frontalis*) (SPB) is a pest native to the Southeastern U.S. which has moved north into our region (NJ, NY, CT, MA, and RI) over the past 20 years. The beetles are small (2-4 mm), about half the size of a grain of rice! When their populations spike, they are capable of decimating hundreds of acres of pine trees, such as the pitch pine (*Pinus rigida*) that dominates the pine barrens on Prudence Island (PI). The pine barren ecosystem is a globally rare habitat occurring in very few locations in the northeastern U.S. It supports a variety of unique and rare plants, birds, and invertebrates.

NBNERR monitors SPB on PI using two traps throughout the spring, summer, and fall. In late summer 2025, we noticed an unprecedented spike in SPB numbers, indicating a potential infestation in the pine forest. Working with partners at RIDEM, US Forest Service, and University of Rhode Island, we surveyed pine trees on the island, identified trees attacked by the beetles, and then treated the attacked trees. The beetle larvae are only able to survive the winter in the bark of the tree; after the tree is taken down, we “score” (open) the bark, or chip the tree, which kills the larvae through exposure to the cold air. Our rapid response will help partners to develop methods to respond to future SPB attacks across the state and region.

However, it is not all bad news! In addition to the SPB, the traps also catch other flying bugs and insects. Two new beetle species were found in this year’s beetle traps: *Hypothenemus miles* and *Narthecius grandiceps* – both new to Rhode Island and one only seen twice before in New England!



You may see our SPB traps in the pine barrens!



An infected tree on PI. Note the pitch tubes, or clumps of sap. This is a defense response by the pine tree.

This graph compares SPB numbers from 2023, 2024, and 2025. → Notice the huge spike in 2025!

## Management practices to help reduce the risk of SPB decimating the pine barrens:

- Trapping beetles & surveying trees – by monitoring SPB and surveying trees, we can respond more quickly to an infestation.
- Prescribed burns – fire-adapted ecosystems, like pine barrens, respond well to low- and medium-intensity fire.
- Thinning – by removing select trees, remaining trees are healthier & the next generation of seedlings are able to grow in the understory.

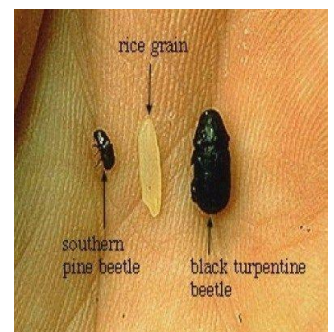


Photo: National Park Service, Southern Forest Insect Work Conference Archives

## Prescribed Burns

Thanks to leadership from DEM Forest Fire Program and the support from PI Volunteer Fire Department, three prescribed burns were conducted in 2025.

Prescribed burns are a versatile tool primarily implemented to restore and maintain certain habitat, such as pine barrens, oak woodlands, and grasslands, that are dominated by fire-adapted species. They also assist in removing invasive species and minimizing the risk and severity of wildfires.



Pre-burn



Post-burn

## Forest Health Projects

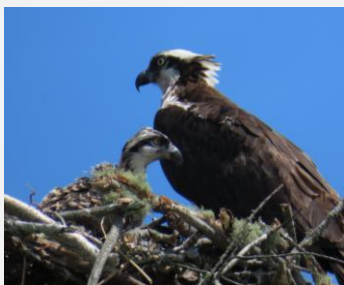
Multiple forest health projects began at the end of 2025 to address habitat concerns in response to invasive species and drought:

- Thinning pine barrens – to promote overall health & resiliency
- Salvaging oaks killed by spongy moth & drought (2016-2018) – to open up habitat for new growth

From these projects, firewood and wood chips have become available to islanders and a slash wall has been created to help restore the Heritage property oak forest and protect it from deer foraging.

## Osprey Monitoring

NBNERR, in collaboration with the Audubon Society of Rhode Island (ASRI), monitors osprey nests on PI from March to October as a part of their Osprey Nest Monitoring Program. The program was started by RIDEM in 1977 to monitor the then 13 nests in RI due to the harmful impacts of DDT on their populations. The program was passed on to ASRI in 2010. Currently, the program monitors over 360 nests across the state with the help of over 100 volunteers!



Prudence Island 2025 Data	
# of Adult Osprey	42
# of Nests (Total)	21
# of Successful Nests (Fledglings Observed)	14
# of Fledglings	20

# New Species on Prudence Island

Three new species have been found on PI while monitoring for SPBs and ticks.

Two new beetles were found in our SPB traps: *Hypothenemus miles* and *Narthecius grandiceps*. Both are a type of bark beetle native to the U.S. and have never been seen before in RI. This is only one of three records of *H. miles* in New England!

The invasive Asian longhorned tick (*Haemaphysalis longicornis*) was found on PI by Dr. Sam Telford, a researcher and professor at Tufts University. It is the first known record of this species on PI. It was first reported in New Jersey in 2017, and its range has been expanding in the northeast. This species is known for posing significant health risks to livestock and domestic animals; health experts are still studying their potential effects on humans. Generally, it is advised to prevent all tick bites by avoiding tall grass, wearing treated clothing/repellent, and regularly conducting thorough tick checks.



Photo: Marc DiGirolomo,  
U.S Forest Service

*Hypothenemus miles*  
Found on June 26, 2025  
Size: 1-1.2 mm



Photo: Marc DiGirolomo,  
U.S Forest Service

*Narthecius grandiceps*  
Found on July 8, 2025  
Size: 2-2.5 mm



Photo: U.S. Centers for Disease  
Control and Prevention

Asian Longhorned Tick  
Found on June 17, 2025  
Size: 2-4 mm

## Our 2026 Priorities

- Diamondback terrapin monitoring
- Continued forest health projects
- Planting and seeding in the oak forests of the Heritage property
- More prescribed burns
- Monitoring presence of rare flowers in grasslands



Photo: Zilla, Wisconsin  
Herpetological Association

For more information, visit  
[www.nbnerr.org](http://www.nbnerr.org) or scan the QR code:

