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Overview

The Rocks, a 736-acre wetland restoration site in New Castle County, Delaware, is part of a continuous tidal marsh community referred to as the Appoquinimink River-Blackbird Creek System that extends north and south for several miles. The site is owned by DNREC. Before restoration, *Phragmites* covered approximately 87 percent of the vegetated marsh plain. Restoration has added more than 529 acres of desirable plant species and has reduced the *Phragmites* coverage to less than 13 percent. Wetland enhancements and restoration efforts began in 1995, and were completed in 2000.



Goals

The goal of enhancement and restoration efforts for the site were to:

- Expand spawning and nursery habitat for aquatic species
- Control / eliminate the invasive plant, *Phragmites*
- Allow *Spartina* spp. and other desirable marsh plants to re-vegetate
- Preserve wetlands and upland buffer

Actions Taken

The EEP took the following actions to achieve the enhancement and restoration goals for the site:

- Utilized targeted aerial, ground and boat glyphosate-based herbicide treatments to control *Phragmites* and allow for *Spartina* spp. re-vegetation

- Studied 4 test areas to determine relative effectiveness of various treatments for *Phragmites* control / elimination

Accomplishments

As a result of actions taken by the EEP, the following has been accomplished:

- 736 acres of aquatic habitat has been restored in the Delaware Estuary
- More than 529 acres of *Phragmites*-dominated wetland vegetation has been replaced with desirable native vegetation

Other Enhancements

A number of additional enhancements to improve and enhance environmental education, public access and long-term use of the site exist, including:

- Parking area
- Boat launch

Continuing Activities

As part of the long-term commitment to the restoration of this site, the EEP continues to:

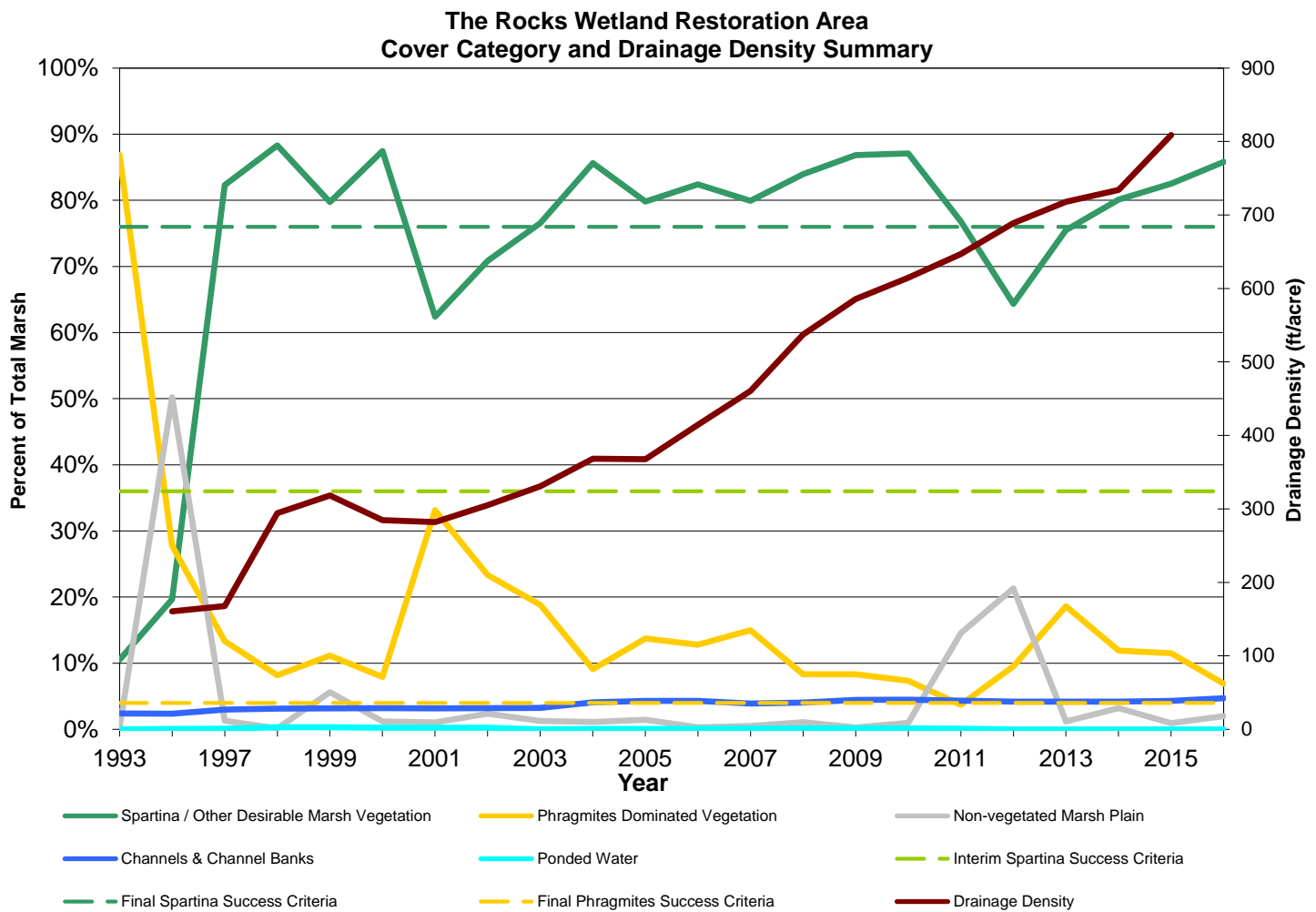
- Monitor biological communities
 - Monitor vegetation
 - Control *Phragmites*





The Rocks Wetland Restoration Site Vegetative Cover Summary Chart

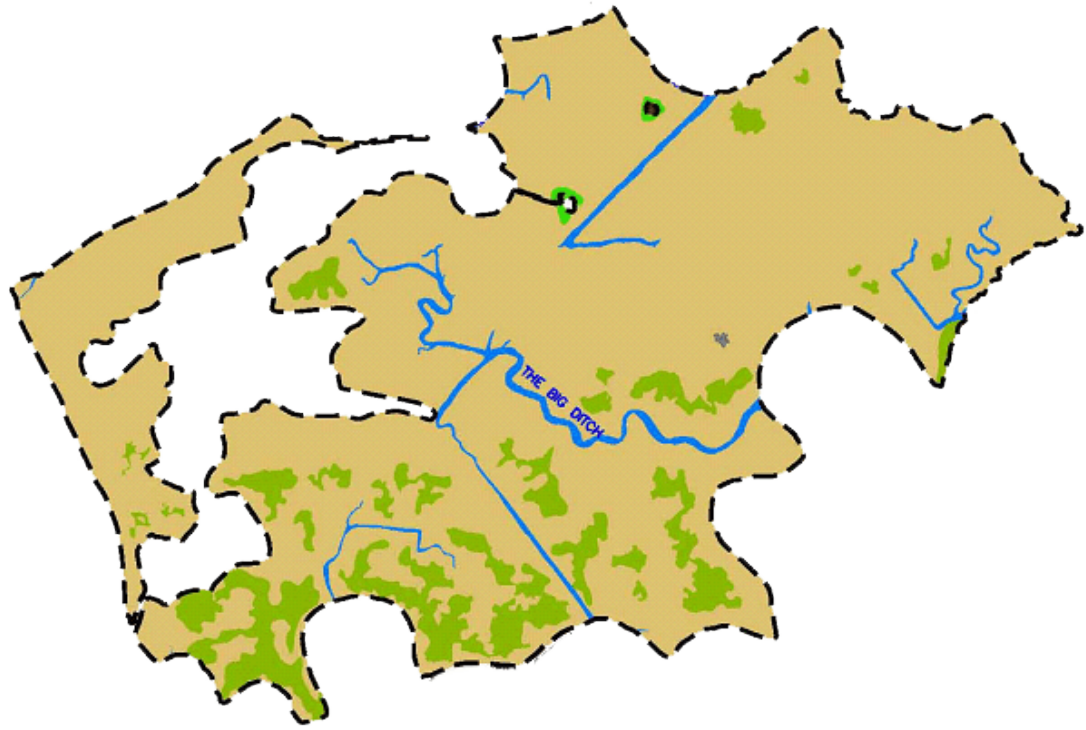
Prior to restoration activities, *Phragmites* (yellow line) covered 87% of the site; *Spartina* (green line) was present in very limited areas. After herbicide applications, *Phragmites* coverage decreased, and was replaced by *Spartina* and mixed stands of desirable species. *Spartina* and other desirable marsh vegetation now dominates more than 70% of the site. The red line (linear feet of channel per acre) indicates the increased aquatic habitat at this site.





The Rocks Site – 1993

As shown by the tan shaded area, The Rocks *Phragmites*-dominated Wetland Restoration Site was dominated by *Phragmites* prior to restoration activities. Only scattered areas of *Spartina* and other desirable marsh vegetation (green shaded areas) were initially present. Small tidal channels were absent.



The Rocks Site – 2016

After treatment, the *Phragmites* (tan shaded areas) population declined. With improved drainage, *Spartina* (green shaded areas) increased, and now dominates the site.

