

Roebbling Park Freshwater Tidal Wetland Restoration Project Overview and FAQ's

The County of Mercer and the Mercer County Park Commission have partnered to organize a multiyear restoration of the freshwater tidal wetlands in Roebbling Park. The project's goal is to improve the Park's plant and animal diversity, restore the marsh's natural tidal function and improve recreational opportunities for the community by reducing the amount of invasive plant species including Phragmites in the Park.

Why is the marsh important?

History

Roebbling Park is a part of the Abbott Marshlands, the northernmost tidal freshwater marsh on the Delaware River. In 1959 Mercer County acquired the property for \$1.00 from the Broad Street Civic Association, under the condition that public use would be limited to passive recreation to preserve the park's natural and cultural histories. The land that is now Roebbling Park has a rich and diverse history. Archaeological investigations and studies document 13,000 years of Native American occupation of the property, and the Park's cultural resources include the Watson House (built in 1708), and the location of an amusement park known as White City, dating to 1907. Today, the park supports a large array of plant and animal life in its various habitats, while providing passive recreation opportunities for nature enthusiasts.

Natural Resources

One of the park's habitat types, freshwater tidal wetland, is also one of the state's most valuable habitats. Unfortunately, freshwater tidal marsh has experienced the highest percentage of loss and degradation of any wetland type in New Jersey. The freshwater tidal marsh in Roebbling Park hosts many rare wildlife and plant species. It is an important pit stop for migrating birds, a wintering ground for waterfowl, and host to important aquatic wildlife including American eel and many fish species. In addition to wildlife habitat, the marsh provides other important ecosystem services, such as managing storm water runoff, controlling flooding and safeguarding water quality. However, this marsh, like so many other wetlands has been invaded by a plant called Phragmites.

What is invasive Phragmites? Where did it come from?

Phragmites australis (aka common reed) is a species of grass that has a nonnative, invasive form that creates extensive stands in shallow water or on damp ground. It spreads very rapidly, out-competing other plant species and forming a monoculture and dense mat, leaving no space for other native plants to grow. *Phragmites* impairs the natural functioning of the marsh ecosystem by altering its elevations and tidal water levels, which negatively impact plant and animal communities. A less diverse plant community leads to fewer wildlife species as food sources diminish and natural habitat structure is compromised. *Phragmites'* dense growth also impedes recreational activities like canoeing and birdwatching.

Phragmites has been a part of our local wetland habitat since at least the early 1800's. However, this past century has seen a dramatic increase in the spread of the plant. There is some debate regarding the reason *Phragmites* has pervaded New Jersey's shorelines and marshes. Some attribute the invasion to man-made influences that have created favorable conditions for an indigenous species of *Phragmites* to proliferate. Others theorize that a non-native form of the plant was introduced from Europe or Asia to America accidentally in the early 1900's and has since dominated over the native flora.

How will the County get rid of the Phragmites?

The overarching goal of this project is to restore the function of the tidal freshwater wetlands, improve native habitat for wildlife and enhance recreational opportunities for the community.

This goal will be met through a multistep project that addresses the removal of the current invasive *Phragmites* and will create marshland conditions not suitable for it to recolonize. The replacement of *Phragmites* with a native plant community will enhance plant diversity, wildlife habitat, and the water itself. To this end, the project will result in the removal of approximately 40 acres of *Phragmites* from the Park.



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Herbicide application is the most effective method to kill large areas of *Phragmites*. Other methods have been studied, such as mowing, burning, flooding, solar burning and grazing. However, none has been shown to be effective alone without herbicide treatment (www.greatlakesphragmites.net). The County's primary goal is to improve the natural resources and make the park safe and more enjoyable for the public, and has therefore worked extensively with experts to choose an herbicide that is most effective in eradicating *Phragmites* while having very minimal impact to anything else. Imazapyr is the active ingredient in the herbicide that will be used to eradicate the *Phragmites* in this project.

Is it safe to apply herbicide to wetlands? Are there health risks?

Imazapyr has been extensively studied and when applied properly, has no impact on water quality, aquatic animal life, birds or mammals, including people. Imazapyr is a systemic herbicide that works by preventing plants from producing a necessary enzyme, acetolactate synthase (ALS), which is not found in animals, and therefore selectively works on plants. Imazapyr holds the EPA's lowest toxicity category to fish, invertebrates, birds and mammals. It does not bioaccumulate in animal tissues. Imazapyr is broken down in the water by light and has a half-life (the time it takes for half of the active ingredient to degrade) ranging from three to five days (Wisconsin DNR).

Herbicide will be applied by a NJ licensed and experienced pesticide applicator and only during safe, non-windy conditions. Specialized boats will be used to access and apply the product in the majority of the marsh, while handheld sprayers will be used to address small areas. Herbicide will NOT be broadcast throughout the entire marsh. Rather, application will be specific to the *Phragmites* only. The herbicide does not have a noxious smell. To track the locations that have been sprayed, blue dye is mixed with the chemical to make it visible. The blue dye is nontoxic and will dissipate with sunlight within a few days after treatment.

When will the herbicide application take place?

The Mercer County Park Commission will obtain all required permits for this work prior to the start. The first herbicide application is planned for October of 2018, pending permit issuance and will be completed in 3 weeks time. During herbicide applications, the park will be closed to the public to allow the restoration process to be carried out as efficiently as possible. It is anticipated that the majority of the herbicide needed for this project will be applied in this first year of restoration. Subsequent follow-up treatments may be needed, but on a much smaller scale.

What are the next steps?

After treatment, the dead *Phragmites* and its massive root layer will be removed from the marsh to begin restoring the marsh to its natural elevations. Some grading may also take place to alter the hydrology of the marsh plain to create conditions that will minimize the re-infestation of *Phragmites*. In following years, the emerging native plant community will be monitored in order to determine whether supplemental plantings will be necessary.

The County is anticipating that this entire project may span the duration of three to five years, as *Phragmites* is an extremely difficult species to eradicate. The beneficial impacts of this project may not be immediately visible, so we ask for patience as the marsh transitions to its new and healthier state. However, once complete, the treated areas within the park will be improved fish nurseries, bird breeding habitat, natural flood control and a source of unique outdoor recreation for County residents and the surrounding community.

For more information and updates, visit the Park Commission's website at:
<https://mercercountyparks.org/#!/activities/freshwater-tidal-restoration>

