

# PHRAGMITES: Questions and Answers

## What is Phragmites? (*Phragmites australis*)

Non-native Phragmites, also known as common reed, is a perennial, aggressive wetland grass that outcompetes native plants and displaces native animals. Because of its height and its distinctive, fluffy seedheads, Phragmites is easy to spot, even by traveling motorists.



Genetic studies have confirmed that there IS a native variety of Phragmites along the Eastern seaboard of the United States. Native Phragmites stands have been found in a few New England marshes. However, native Phragmites has always been a rare, non-invasive species that grows in mixed wetland plant communities.

Today, invasive Phragmites can be found across North America and dominates along the Atlantic coast where few native Phragmites populations remain. For specific information on distinguishing native from non-native Phragmites, **view the Powerpoint presentation at <http://www.nps.gov/plants/alien/fact/pdf/phau1-powerpoint.pdf>**

**The rest of the information in this fact sheet refers specifically to non-native Phragmites.**

## How did Phragmites get here?

For further information, please contact:  
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<http://www.fws.gov/northeast/gulfofmaine>

In the early 19<sup>th</sup> century, the non-native variety, most likely European in origin, appeared in coastal ports in the eastern United States. The rapid spread of Phragmites in the 20<sup>th</sup> century was probably related to the construction of railroads and major roadways, habitat disturbance, shoreline development, pollution and eutrophication.



## Why is Phragmites a problem?

**Visual impacts:** Phragmites can grow up to eighteen feet tall, obscuring views for landowners, nearby residents and visitors.



**Recreational impacts:** Walking even a few feet into a stand of non-native Phragmites can be difficult because the growth can be exceptionally dense and tall, and the vegetation can cut your skin. Phragmites can also reduce native fish and wildlife populations, limiting recreational values for birdwatchers, walkers, naturalists, boaters and hunters.

### Fire danger for nearby residents:

Phragmites grows rapidly, and each fall, plant material dies back, creating large concentrations of tinder-dry vegetation that increase the



potential for fast-spreading fires that can threaten residential and commercial developments on surrounding uplands.

### Biological impacts:

Phragmites outcompetes and blocks out native salt marsh vegetation and provides little or no food or shelter for most saltmarsh-dependent wildlife. Phragmites can also eliminate small intertidal channels and obliterate pool habitat that offers natural refuge and feeding grounds for invertebrates, fish and waterbirds. Phragmites can create a dense jungle of vegetation that native salt marsh birds, furbearing mammals and even deer cannot penetrate. In addition, decomposing Phragmites can raise the surface elevation of the marsh more rapidly than would occur with slower-growing native salt marsh vegetation. Higher elevations reduce saltwater flooding, depriving the marsh of vital nutrients and salinity needed by native salt marsh plants and animals. A higher and drier marsh leads to less vigorous growth of native salt marsh vegetation, allowing Phragmites to gain a stronger foothold and continue its spread over the marsh.



## Where does Phragmites grow?

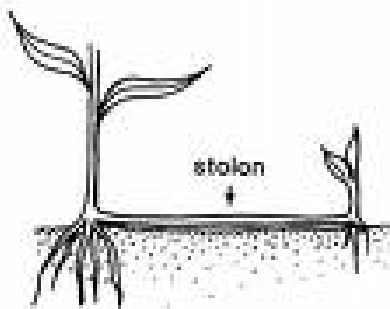
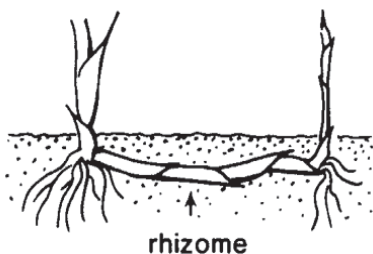
Phragmites grows readily in disturbed wetland areas, such as degraded salt and freshwater marshes and swamps, along streams, lakes, ponds and roadside ditches. Phragmites is usually an indicator of a wetland ecosystem that is out of balance. Undersized culverts, man-made ditches, remnant dikes, abandoned hay roads, transportation corridors and other large berms or fill on the marsh can alter the natural tidal regime and limit saltwater influence.



In addition, when commercial and residential landowners expand paved roadways and parking areas, establish large grass lawns, apply fertilizers, herbicides and pesticides, or destroy streamside buffers of native trees and shrubs, negative impacts can also be felt in downstream wetlands. Any of these seemingly small-scale individual management decisions by developers, landowners and

recreational users throughout the watershed can cumulatively reduce tidal influence, increase runoff, reduce water quality and encourage the establishment and spread of Phragmites.

## How does Phragmites spread?



Phragmites can be spread by wind or animal-born seeds, or by intentional introduction by people. Most commonly however, Phragmites spreads by horizontal above-ground stolons and underground rhizomes. (Stolons grow from an existing stem and are thin, horizontal structures that grow above-ground, sprouting new plants. Rhizomes are underground horizontal stems that also send out roots and shoots to start new plants). Stolons can grow dozens of feet annually, and new plants can sprout at nodes located every few inches along the stolon. Rhizomes, which create thick underground mats, can expand at the rate of 30 feet per year, with new plants sprouting all along the rhizome. In addition, tidal ice can scour and move live rhizomes to establish new stands of Phragmites.

Maintenance equipment used in a wetland with Phragmites must be carefully cleaned to avoid transporting Phragmites to new locations; it only takes a small piece of rhizome to start new plants. Phragmites has also been unintentionally introduced by people planting it as a garden ornamental, using it for floral displays, or camouflage for duck blinds. Even Phragmites that appears to be dead is likely to have viable seeds and rhizomes. Once well-established, Phragmites is difficult to control or eradicate.

## Is there anything good about Phragmites?

## How can we control the spread of Phragmites?



Some birds, such as yellowthroat, marsh wren, salt marsh sparrow and least bittern roost in Phragmites. Red-winged blackbirds and some wading birds have been documented to nest in Phragmites. Other studies suggest that due to its high productivity, limited ability to export litter, and slow decay rates, Phragmites might offset problems that rapid sea level rise could pose to many coastal marshes.

Landowners, locally-based conservation groups, and municipal, state and federal government staff can work in partnership to restore natural conditions by:

- removing undersized culverts and other tidal restrictions,
- breaching berms and old hay roads that cross wetlands,
- reducing the negative hydrological impacts of man-made drainage ditches,
- removing fill material dumped on wetlands,
- treating and removing Phragmites from wetlands, and
- helping people understand the importance of coastal wetland restoration activities, the negative impacts of invasive species, and the opportunities for individuals and communities to help limit the spread of Phragmites and other invasives.

Landowners can:

- eliminate or reduce fertilizer, herbicide and pesticide use,
- increase the width of riparian buffers by maintaining or planting native trees and shrubs,
- reduce pavement and lawn size,
- avoid planting Phragmites,
- avoid transporting Phragmites -- dead or alive, and
- educate friends and neighbors about best management practices in your watershed.

To control Phragmites, mowing or burning is generally unsuccessful, unless the work is repeated for multiple years. Physical removal of the entire plant, including the dense mat of underground rhizomes can also be tried, but it tends to be costly, the heavy machinery required to 'scalp' the marsh surface can have other negative impacts, and great care must be taken in disposing of the Phragmites to avoid introducing it elsewhere. Restoring full tidal flow to an impacted section of marsh may be effective in controlling Phragmites. However, once Phragmites is well established, it may be able to withstand restored high salinity levels. In addition, restoring full tidal flow can be impractical at locations where lowland development was allowed after tidal restrictions were installed. To-date, biological control has not proven to be successful, but continuing research into biological control agents holds promise for the future.

Careful and targeted application of specific herbicides by licensed applicators has proven relatively successful, especially when combined with other restoration techniques — restoring tidal flow, improving upland conditions to reduce negative marsh impacts, and mowing and mulching the dead Phragmites after herbicide application.

## Tell me more about using herbicides to control Phragmites

Licensed applicators apply approved herbicide directly to green Phragmites foliage, and the active ingredient moves through the plant tissues, where it kills Phragmites by de-activating a protein found only in plants. Treated plants will begin to yellow, turn brown and eventually die. The herbicide works by translocating the toxin throughout the plant, particularly into the stolons and nutrient-rich rhizomes, where vegetative reproductive capacity is stored. In most instances, a repeat application or two is needed to ensure that nearly all of the Phragmites is treated and killed. Herbicide application is generally most effective when combined with other control strategies that target landscape issues that caused the Phragmites to invade in the first place.

Herbicides used to treat Phragmites specifically target plants. Applicators must therefore be careful to spray only Phragmites, because the herbicide can kill all green plants. The effects of the herbicides on birds, fish, mammals and invertebrates have been found to be minimal. Moreover, the herbicide has low run-off potential because it quickly breaks down into non-toxic compounds that are absorbed onto soil particles and microorganisms in both water and sediment. Therefore, the Environmental Protection Agency has approved application of specific herbicides by licensed applicators to control Phragmites on sensitive aquatic sites.

## How can I learn more about Phragmites?

Visit the following website for many links to additional information on Phragmites:

<http://www.invasiveplants.net/phragmites/Default.htm>

