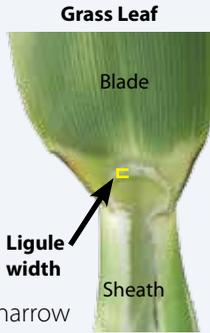


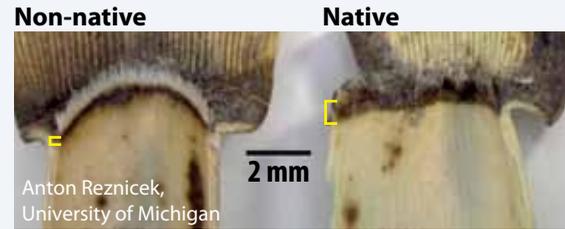
# Technical Characters:

## Ligules

The ligule is a membranous extension of the leaf sheath at the point where it meets the blade. This membrane may or may not be pigmented; the width of the membrane (not including the fringe of hairs at the top) is the critical measure.



Non-native phragmites has a narrow ligule that ranges from 0.1–0.4 mm, while the native has a wider ligule, ranging from 0.4–1 mm. Because the native phragmites is less sturdy in general, its ligule is more likely to shred and fray by midsummer.



## Glumes

Phragmites seedheads have many branches. Each branch has a number of spikelets, and each spikelet includes a number of florets. At the base of each spikelet are two bracts, called glumes.



Non-native phragmites' lower, shorter glume is usually 2.6–4.2 mm long while that of the native subspecies is longer at 4–7 mm.



# Native or Not

## Density and Size

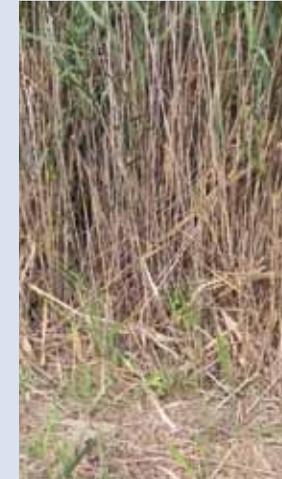
The invasive non-native phragmites forms dense monocultures, rapidly outcompeting native species. Its stems break down very slowly, forming a dense thatch. As seen in the photo on the near right, it blocks all light, excluding native vegetation. It can reach up to 6 m (20 ft) in height, often blocking shoreline views.

The native species is less robust. Typically it reaches 2 m (6.5 ft) in height and grows as scattered stems. It may grow taller and form dense colonies in response to nutrient enrichment, but the stems break down quickly and other species have enough light and space to grow beneath it, as seen in the photo on the far right.

In the photo below, the non-native form is taller than the native, with larger seedheads. The density of the native suggests nutrient enrichment on the site.



## Non-native



## Native



## Growing season

Like many invasive species, non-native phragmites begins growing earlier in the season and continues later in the fall than its native counterpart. In the photo to the left, the invasive phragmites is just beginning to senesce and still retains much of its color. The native, in contrast, is already dormant.

Photos of the two seedheads below were taken on the same day; the non-native is just beginning to expand, while the native is fully expanded.

## Non-native



## Native



## Catching it early:

At first glance, new invasions can resemble mature populations of the native species. This is particularly true when thatch has not yet begun to accumulate, and stems are shorter and widely spaced.

The stems of the young infestation below on the left are widely spaced like the mature native population on the right. However, they lack the seed heads present on most of the native stems. The red stems of the native are distinctive, also.

Early recognition is critical. Phragmites stores energy underground in its extensive network of rhizomes; the older it is, the harder it is to control. Recognizing the non-native form of phragmites early in its invasion increases the opportunity for successful eradication dramatically.

## Non-native



## Native



## Quick check:

- Are the leaf sheaths still attached?
- Are the stems dull tan or red and shiny?
- Do the stems persist over several years or break down quickly?
- Is this a new or mature population—do most stems have seedheads?
- How wide are the ligules? Glume length?

## Centimeters



## At first glance:

### Stem Color / Leaf Sheaths

Leaf sheaths of non-native phragmites cling tightly, covering dull tan stems with tiny ridges. The lower leaf sheaths of native phragmites fall off easily, exposing the stem below, which turns red in the sunlight.

The non-native subspecies has stolons (spreading horizontal stems) that can grow up to 50 ft or more in a season. Unlike the upright stems, they can be quite red and lead to confusion.

#### Non-native



#### Native



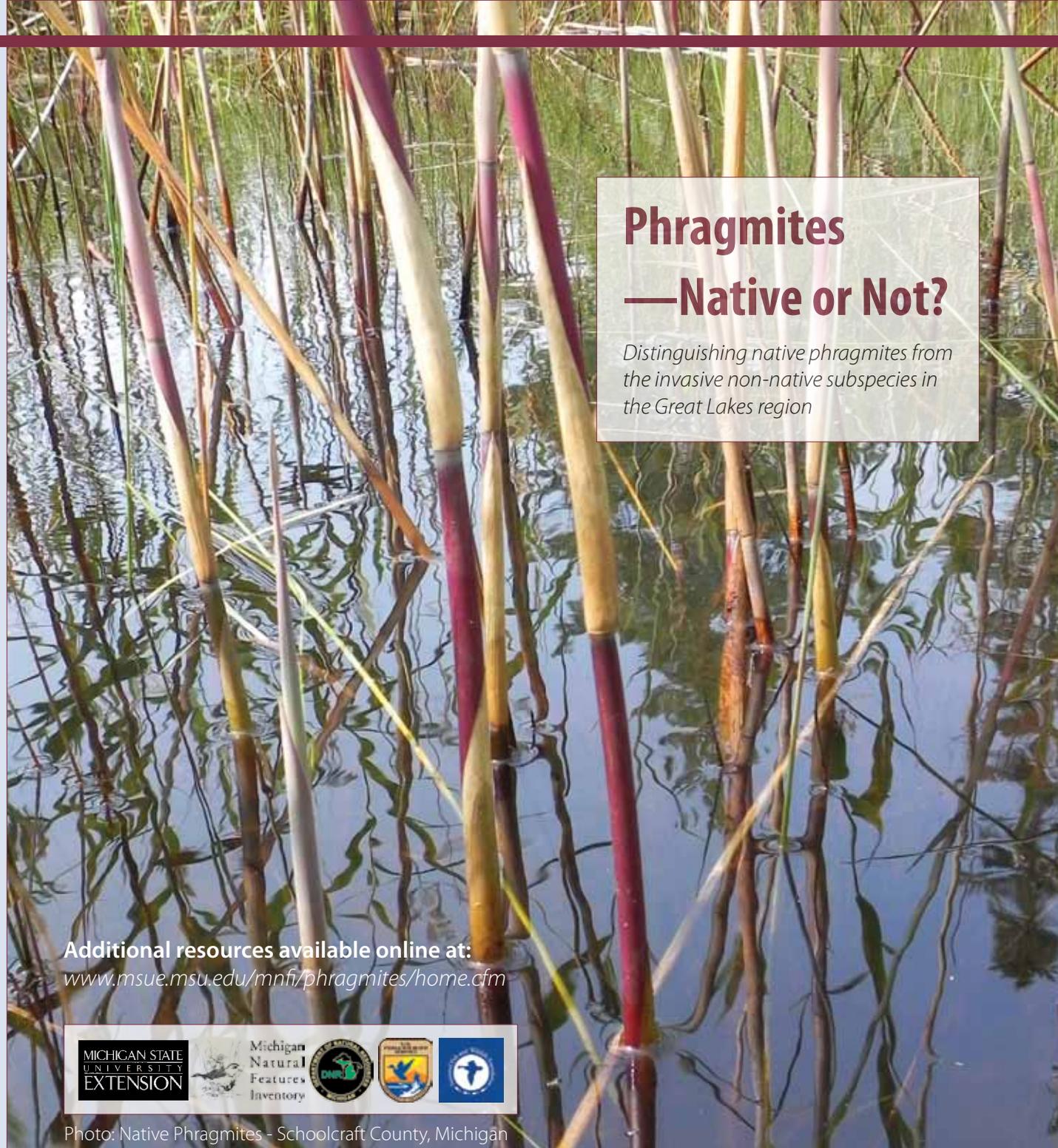
### Leaf Color

Leaves of the invasive non-native subspecies are a bluish gray-green, while those of the native phragmites are a yellowish green. This is easiest to see when they grow side-by-side

#### Non-native



#### Native



## Phragmites —Native or Not?

*Distinguishing native phragmites from the invasive non-native subspecies in the Great Lakes region*

Additional resources available online at:  
[www.msue.msu.edu/mnfi/phragmites/home.cfm](http://www.msue.msu.edu/mnfi/phragmites/home.cfm)



Photo: Native Phragmites - Schoolcraft County, Michigan

**P**hragmites *australis*, the common reed, is widely distributed around the globe. In Michigan, two subspecies are present—the native, subspecies *americanus*, and the invasive introduced form, subspecies *australis* (sometimes referred to as haplotype M).

The non-native subspecies was introduced to the east coast sometime between the late 1700s and the early 1800s and has been gradually expanding its range westward. It forms dense monocultures and is capable of dominating wetlands within a few years. It is most often found on disturbed sites, with altered hydrology, sedimentation, nutrient enrichment or high levels of salinity.

Recently, non-native phragmites has been spreading into high quality coastal wetlands. It is a particular scourge in southern Michigan, where it now dominates coastal marshes and wet prairie in Saginaw Bay and the St. Clair Delta.

Efforts are underway to map and treat the invasive non-native phragmites in northern Michigan, to slow further spread. Michigan's coastlines are home to numerous globally rare and vulnerable species and diverse natural communities, and non-native phragmites poses an enormous threat to their survival.

Since native phragmites is a component in other wetland plant communities, it is important to distinguish between the two subspecies before initiating control efforts.