

# ***Phragmites australis* Initial Identification Report, 2013.**

Florence County Land Conservation Department

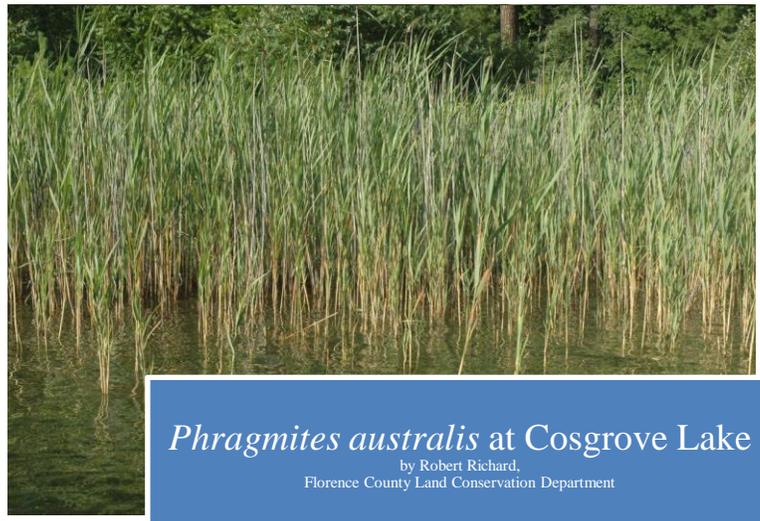
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## **Background:**

A population suspected to be the introduced variety of *Phragmites australis* was discovered on Cosgrove Lake. Mari Dallapiazza from the Wild Rivers Invasive Species Coalition reported *Phragmites australis* to be present at three locations on Cosgrove Lake (Map 1.), and estimated the population to be .12 acres. Data was collected to aid in the identification process and provide more information for the possibility of future treatment.

## **Methods:**

Data was collected from the largest population which is located on the island. Sample densities for dead standing stalks and living individuals were observed at three locations within the population. Densities were recorded per meter squared in the three plot locations both on shore and in the water. Specimens were taken and pressed, and are ready for identification. Identifiable characteristics were photographed, to provide a basic starting point.



## **Results:**

Living sample density averages were the highest on shore, and the dead stalk average was almost equal, but higher in the water (Table 1). On shore the average for living stalks was 30.7 per square meter and the average for dead stalks was 25.0 per square meter. In the water, the average for living stalks was 24.7 per square meter and the average for dead stalks was 26.7 per square meter. Many stalks were also observed on the ground, especially in the center of the population, but were not counted.

A general photograph of the suspected *Phragmites australis* was taken before the specimens were pressed (Image 1.). All characteristics observed indicate the introduced variety: persistent leaf sheaths (Image 2.), red color on base internode, and all other internodes green

(Image 3.), ligule length less than one millimeter (Image 4.), and no fungus present on culms (Image 5.). This information was derived from and compared with the classification guidelines by Swearingen and Saltonstall (2010)(Figure 2.). Additionally, approximately ten dried flowers were observed (Image 6.). The flowers are plausibly last year's and contained no seeds.

### **Discussion:**

The characteristics and densities observed on Cosgrove Lake indicate the introduced variety of *Phragmites australis*. The population is relatively small and present at three different locations around the lake. Since the population is largest and denser on the island, *Phragmites australis* may likely be spreading from there. The distance between locations does seem to indicate successful reproduction, but could be explained by drifting broken rhizomes. Due to the presence and abundance of dead standing stalks and stalks on the ground, the island population has plausibly been there for at least three years, but possibly longer.

### **Conclusion:**

The *Phragmites australis* present at Cosgrove Lake appears to be the introduced variety, with a residence time of at least three years. *Phragmites australis* does seem to be spreading through reproduction or vegetative growth. Treatment seems very likely to be successful due to the small presence on the lake.



**Map 1.** *Phragmites australis* populations present on Cosgrove Lake, provided by Mari Dallapiazza.

<b>Table 1. <i>Phragmites australis</i> Sample Density Data</b>				
	Water		Shore	
	Alive (per m <sup>2</sup> )	Dead (per m <sup>2</sup> )	Alive (per m <sup>2</sup> )	Dead (per m <sup>2</sup> )
Plot 1	17	10	17	12
Plot 2	38	58	39	28
Plot 3	19	12	36	35
Average	24.7	26.7	30.7	25.0

**Table 1.** *Phragmites australis* present at Cosgrove Lake at high densities.

<b>Table 2. Cosgrove Lake Data Compared with "Summary of Morphological Characters that Distinguish Native &amp; Introduced <i>Phragmites australis</i>", Swearingen and Saltonstall (2010)</b>		
Character	Native	Introduced
*Ligule length	>1.0 mm	<1.0 mm
*Lower glume length	3.0 –6.5 mm Most >4.0 mm	2.5 –5.0 mm Most <4.0 mm
*Upper glume length	5.5 –11.0 mm Most >6.0 mm	4.5 –7.5 mm Most <6.0 mm
*Adherence of dead leaf sheaths	Loose, drop off easily	Tight, remain on dead stems
*Growth form (stem density)	Typically in mixed communities, stem density may be low to high, dead stems less likely to persist to the next growing season.	Often grows as a monoculture, stem density is high, dead stems often persist to the next growing season.
Culm texture	Smooth, shiny	Dull or flat color, slightly ridged
Culm color	May be dark red at nodes and internodes, where exposed to UV. May be green as well.	Typically green, occasionally see some red color at the lower nodes
Spots on culms	May be present	Not present, mildew may be present
Leaf color	Lighter, yellow green to dark green	Typically darker green, but may be lighter in saline areas

\*Indicates most diagnostic features.

Highlighted category indicates characteristic observed on individuals present at Cosgrove Lake

**Table 2.** Identifiable characteristics indicate the introduced variety of *Phragmites australis*.



**Image 1.** Image of suspected *Phragmites australis* sample before being pressed.



**Image 2.** Leaf sheaths are persistent, which indicate the introduced variety.



**Image 3.** The red color was observed on the base internode of plants rooted in the water, but all other internodes green. This pattern is indicative of the introduced variety.



**Image 4.** The ligule length is less than one millimeter, which is a common trait of the introduced variety.



**Image 5.** Image demonstrates that mildew is present, but there are no spots indicative of native fungus and native variety of *Phragmites australis*.



**Image 6.** Approximately ten dried and seedless flowers were found at Cosgrove Lake. The flowers are likely from last year.

**Resources:**

Swearingen, J. and K. Saltonstall. 2010. *Phragmites* Field Guide: Distinguishing Native and Exotic Forms of Common Reed (*Phragmites australis*) in the United States. Plant Conservation Alliance, Weeds Gone Wild. <http://www.nps.gov/plants/alien/pubs/index.htm>

**Map:**

Unknown title. Unknown date. Scale undetermined. Dallapiazza, M.; “using Google Earth”. 25 July 2010.