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***Phragmites australis*: Ecology and Management in
Virginia**

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Management**

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Evidence that Phragmites is native to North America

- Described in the late 18th century by Thomas Jefferson
- Found in peat cores 3,000 year old tidal marshes in Connecticut
- Identified in archaeological investigations of Anasazi sites in Colorado dated to 880-900 A.D.
- Identified in archaeological investigations of Red Bow Cliff Dwellings in Arizona dated to 1300 A.D.

Phragmites australis

Seedy-head

Seed head





WILLIAM & MARY

MARINE SCIENCE

Leaves off

Spartina cynosuroides

Big Cordgrass

Seed head



Leaves on





Kirk J. Havens, VIMS

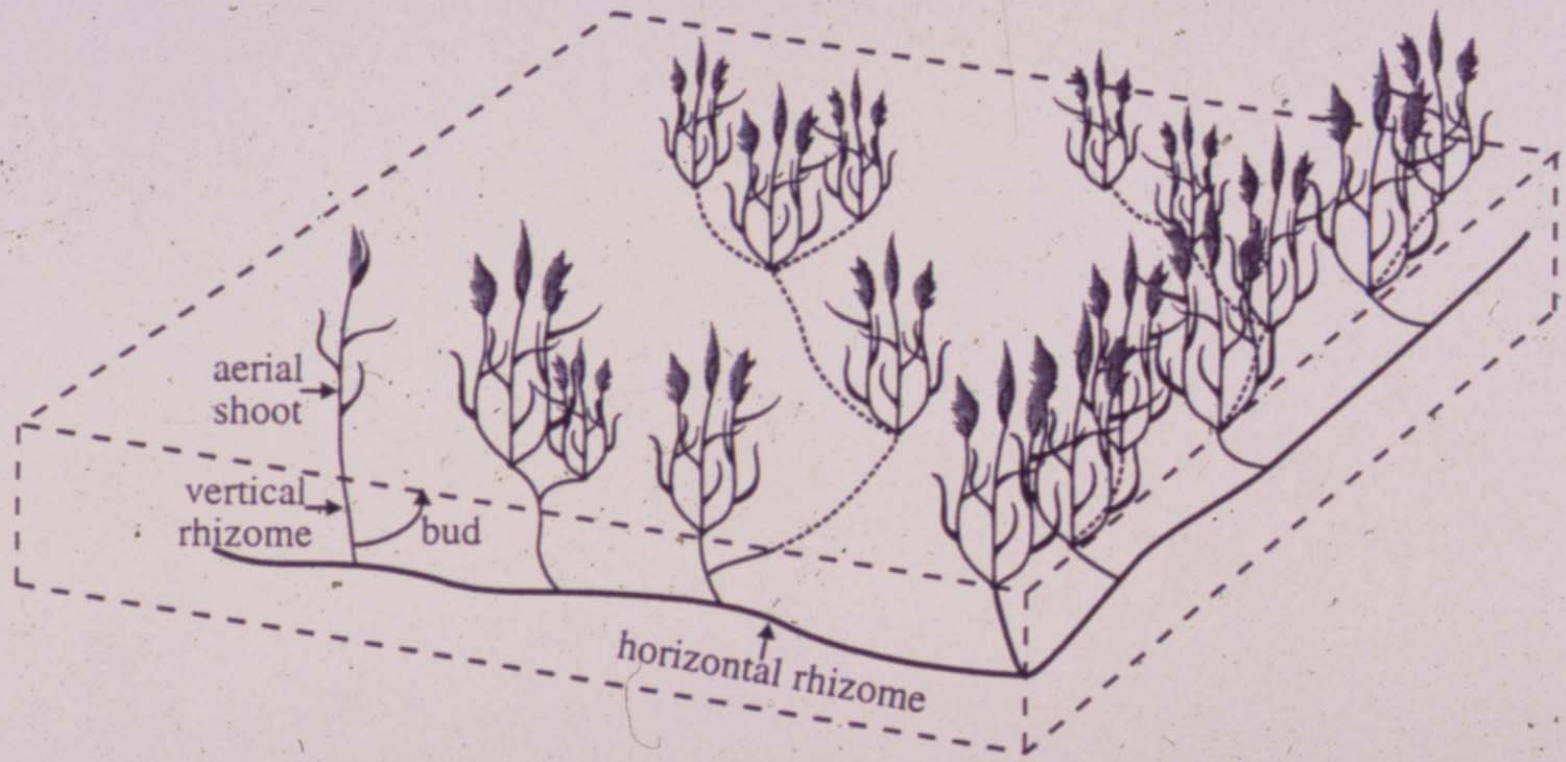


Figure 6. Vegetative propagation of *P. australis* (modified from Haslam, 1969).



Invasion from berm



Perimeter ditching



Upland construction berm













Function

- Erosion Control
- Nutrient Cycling
- Wildlife Habitat
- Fish Habitat
- Biodiversity

Human Value

- Protection of property from erosion
- Aesthetics
- Privacy
- Wastewater treatment

Human Uses

Roof Thatching,
matting, weaving



Cigarettes



Food



Candy,
cereal,
flour



Arrow shafts



Edible Phragmites

Young stems, while still green and fleshy, can be dried and pounded into a fine powder, which when moistened is roasted like marshmallows. The tiny reddish seeds can be ground into flour or made into gruel. The rhizomes can be crushed and washed to obtain flour.

Roasted Phragmites Rhizomes

12 Phragmites rhizomes (6 - 8" long)

Wash thoroughly. Bake in oven at 350F for 25 to 30 minutes. Taste like baked potato jackets.

Boiled Phragmites Shoots

14 Phragmites shoots

Gather emerging shoots in the spring. Peel off covering layer until you reach the center of the stalk. Add to small amount of boiling water. Cover, lower heat, and cook 10 minutes or until tender.

Phragmites Gruel

1/2 cup seeds of Phragmites
2 cups boiling water

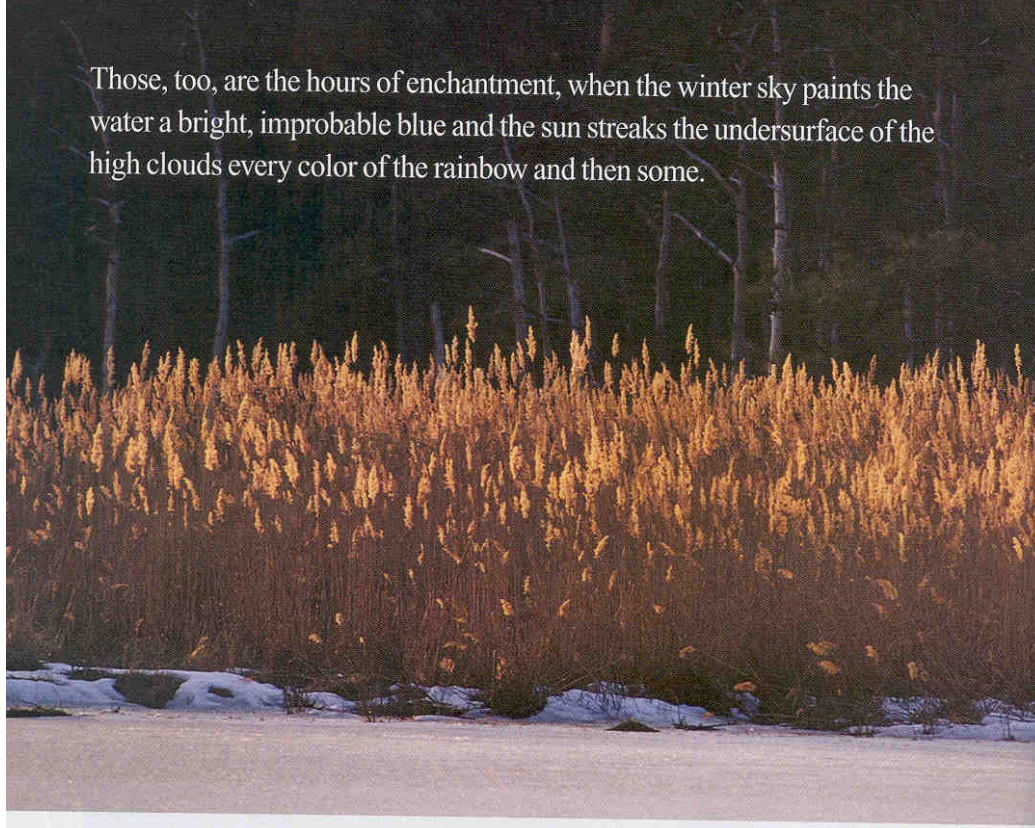
Collect a dozen or so seed heads. Remove the seeds and crush. Add to boiling water. Cover and cook slowly until a thin, red-colored gruel is formed. Cool and eat. Milk and maple syrup compliment dish.

Phragmites Greens

1 cup young, unfolded leaves

Collect, wash, and add to small amount of boiling water. Cover and cook over low heat for 10 minutes. Serve plain or with butter and salt and pepper.

Those, too, are the hours of enchantment, when the winter sky paints the water a bright, improbable blue and the sun streaks the undersurface of the high clouds every color of the rainbow and then some.



their characteristic honking mimics the crowd noise that drifts out of a fully packed stadium.

Blackwater manages both crop fields and freshwater impoundments to provide food for the migrants, and the efforts are well rewarded. Lesser snow geese, mallards, pintails, black ducks, teal, and many more annually flock to the refuge along with the Canada geese. "It is outstanding from the birder's perspective," says Glenn, "because you've got a large diversity of waterfowl and other migrant species as well. Plus, there may be as many as 200 bald eagles here on the refuge at any one time during January. It's pretty astounding. I had several friends come visit from some of the more Southern refuges just after I moved here, and they were amazed at the amount of wildlife. Not very many places have the opportunity for people to see and interact with wildlife as closely as they can at Blackwater."

The refuge's 5-mile Wildlife Drive affords

best access to that diversity. It crosses the Little Blackwater River, then scallops along the northern shore of the Blackwater River, riding atop a dike that divides freshwater from tidal. It cuts through forest and marsh, linking with two short hiking trails—one that explores the marsh and the other woodland habitat. But even if you never leave your car, the views can still be spectacular, making bird watching exciting and easy for neophytes and even children.


"Go in the early morning or late afternoon," urges Glenn. "That's the feeding period for most of the birdlife here, so they're going to be active and moving around more. And if you get here fairly early in the morning, eagles are almost as easily seen along the Wildlife Drive as Canada geese. It's very, very, very rare to take the Wildlife Drive and not see a bald eagle, but you need to go early. That's just the way it is in the natural world. If you want to see wildlife,



Kirk J. Havens, VIMS

Concerns:

- **Reduction of Biodiversity in areas of:**
 - Rare, threatened, endangered species**
 - unique habitat**
 - extremely diverse systems**
- **Invasion of:**
 - Constructed wetland sites**
 - Areas managed for specific goals**

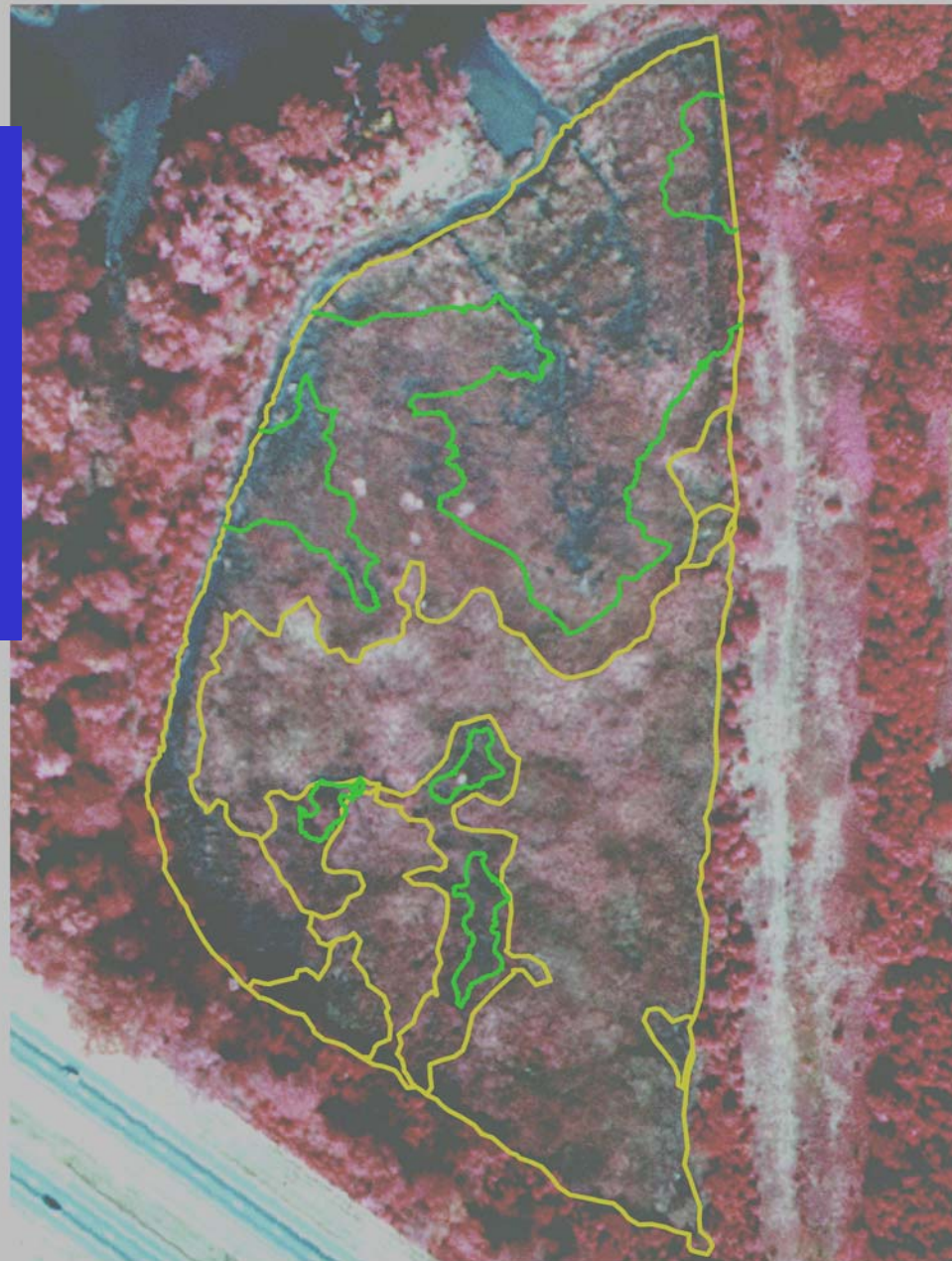


In 1994, 15 constructed wetlands sites were surveyed. Total area = 68.3 acres, Total Phragmites within the sites = 8.6 acres (12.6%). Sites ranged in size from 1.2 acres to 13.2 acres and in age from 1 year to 12 years.

In 2000, Total Phragmites within the sites = 12.3 acres (18.0%) Sites now range in age from 7 to 18 years.

**Percent
Phragmites in
1994 = 36.9%**

**Percent
Phragmites in
2000 = 72.3%**



Goose Creek

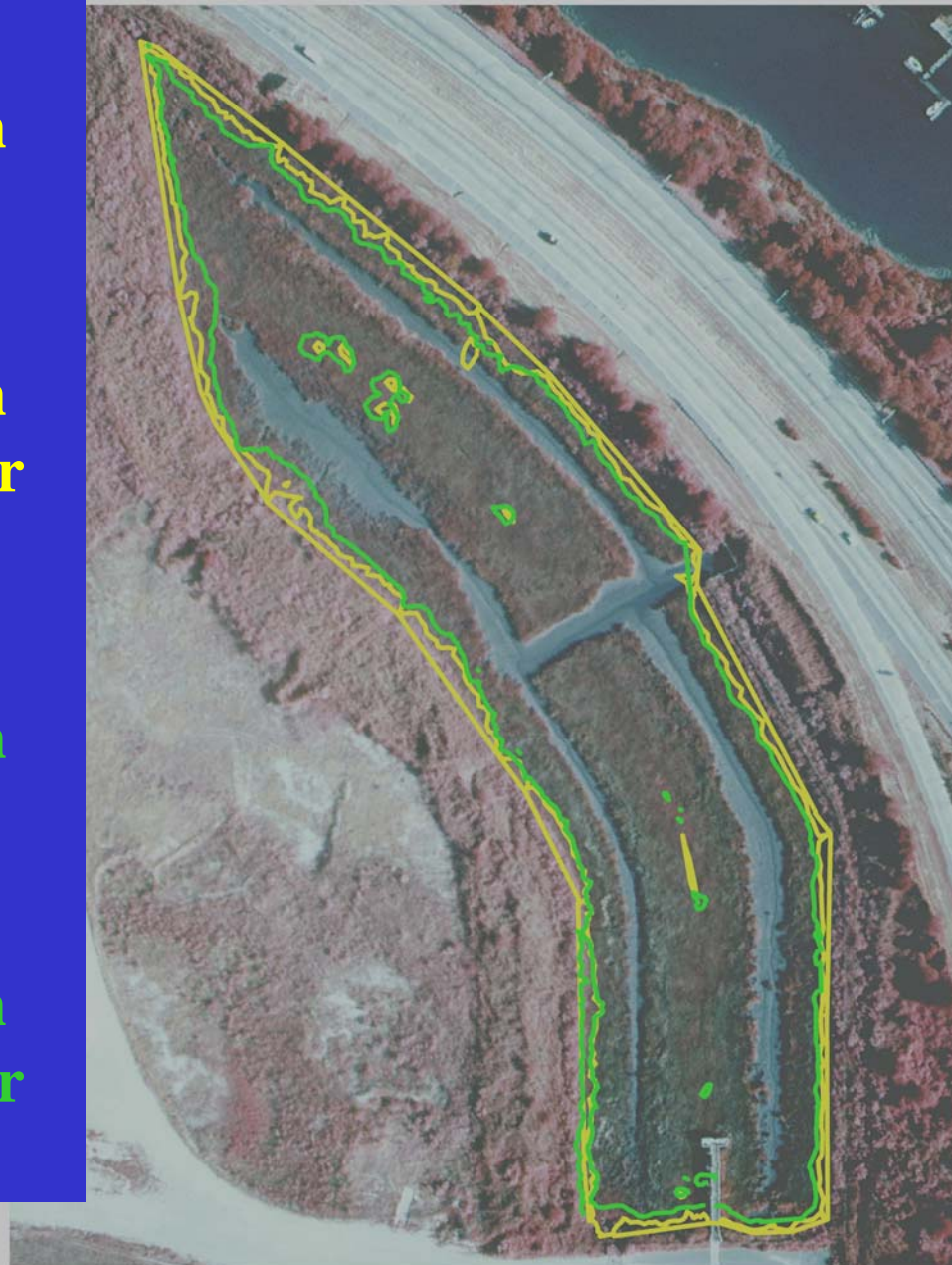
— 1995
— 2000

**Percent
Phragmites in
1994 = 9.3%**

**Percent
Phragmites in
marsh interior
= 1.0%**

**Percent
Phragmites in
2000 = 16.8%**

**Percent
Phragmites in
marsh interior
= 0.9%**



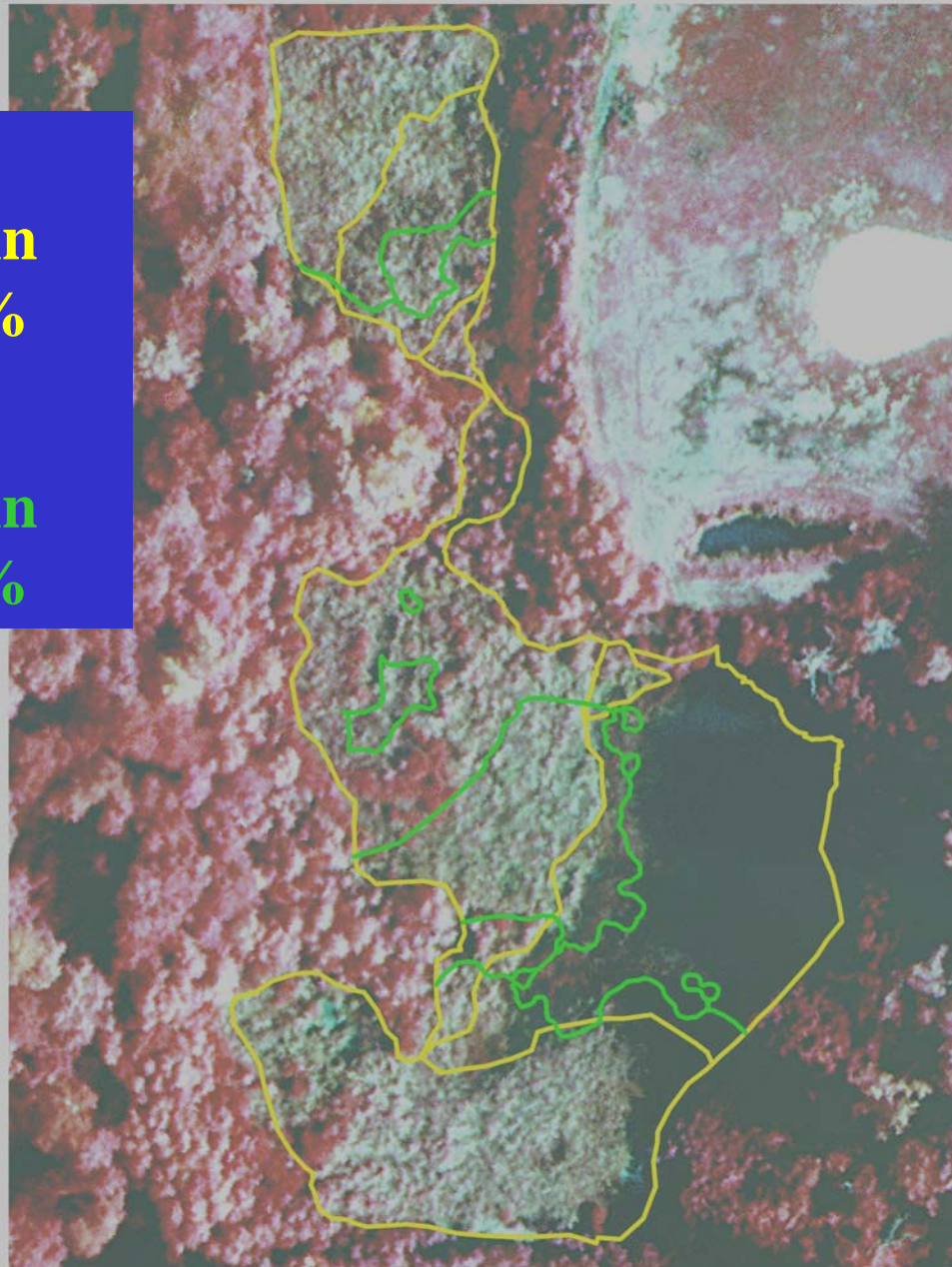
Monkeybottom

1995
2000

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**Percent
Phragmites in
1994 = 62.8%**

**Percent
Phragmites in
2000 = 55.3%**



McDonald

— 1995
— 2000

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Percent
Phragmites in
1994 = 4.7%

Percent
Phragmites in
2000 = 1.1%



Salt Ponds

— 1995
— 2000

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A surveying instrument, possibly a total station or level, is mounted on a yellow tripod. The tripod is positioned on a wooden deck with a blue railing. In the background, there is a coastal landscape with tall grasses, shrubs, and a body of water under a cloudy sky. The text is overlaid in yellow on the image.

1. Perimeter ditching in brackish and saltwater systems

2. Attention to elevation in brackish and saltwater systems

3. High density planting of vegetation

4. Planting of mature scrub/shrub species along upland berms

Control Mechanisms

- **Cutting**
- **Flooding**
- **Burning**
- **Herbicides**
- **Covering with black plastic**
- **Tilling**
- **Excavation (Mechanical removal)**

Biological Control

Insect herbivores of Phragmites

- Shoot and root-boring moths - larvae feed on shoots and rhizomes and some species can feed on shoots below the water level. Attacks result in wilting and stunted growth.
- Shoot and root-boring flies - flies attack the growing meristem of shoots, stunting growth.

From Blossey and McCauley (2000)



Please enter your data below and click the submit button.

Last Name:

First Name:

Phragmites Coordinates - Lat:

Long:

Comments:

Submit