Seaside Heritage Program Presents:

Managing Phragmites on Virginia’s Eastern Shore:
A Workshop for Landowners
Managing Phragmites on Virginia’s Eastern Shore

- Natural History and Ecology of Phragmites
- Abundance and Distribution of Phragmites on the Seaside of Virginia’s Eastern Shore
- Methods for Controlling Phragmites Invasions
- Sources of Assistance to Landowners
Phragmites australis

Natural History & Ecology
Physical Characteristics
(getting to know the enemy)

Grass 2-6 m tall

Sturdy vertical stalks

Yellow-green to gray-green leaves

Worldwide distribution

Photo by Larry Alain, USGS NRCS
Tan to purplish “fluffy” seed head
(July – September)
Extensive rhizome (underground stem) network

Vertical shoots regenerate from rhizomes
Grows in tidal & non-tidal wetlands

Fresh, brackish, or salty conditions

Prefers brackish to fresh habitats
Phragmites on dredge spoil site
In early 1800’s Phragmites was present in the mid-Atlantic region, but at relatively low abundance and not reported as invasive.
What Happened?

1. Introduction of European strain

2. New genetic strain (hybrid of native and introduced strain?)

3. Natural changes in marsh stability

4. Increased soil disturbance

5. Mechanical spread
Introduction of European strain is now considered to be the major explanation for recent rapid spread of Phragmites

- Strong competitor
- Rampant vegetative spread
- Rapid growth & maturity
- Superior physiological mechanisms
- Difficult to control / eradicate
- No / few natural predators
Remarkable rhizome biomass
Rapid rhizome growth after exposure to sunlight / air
Rapid, even shoot growth results in:

- Shading of competition
- Nutrient “hogging”
- Displacement of diverse native vegetation
Dense single-species stands
Air enters via Leaf sheath stomata

Venting gases

Old, dead culm

Young intact culm

Humidity-induced Convection
Wind blowing across dead, broken culms creates suction

Air enters via Short, broken culms

Tall, dead culm

Venturi – induced Ventilation

rhizome
Disturbance (fire / wind) in marshes increases Phragmites spread
Phragmites colonizing a recently burned area
Rhizomes are dispersed by waves/current during strong coastal storms
Phragmites reproduces by both rhizome and seed dispersal.
Native or Introduced?
Stem Characteristics

**Native**
- Red base
- Smooth & shiny
- Slightly crooked
- Somewhat flexible
- Lower stem density

**Introduced**
- Tan base
- Rough & dull – ribbed
- Straight
- Rigid
- High stem density
Native or Introduced?

Native

• Leaves yellow-green

• Loosely wrapped leaf sheaths, drop off at senescence

• Senesces mid – late September

• Sparse flower head

• May prefer less salty, brackish to freshwater sites

For more information go to

www.invasiveplants.net/phragmites