ALTERNATIVE APPROACHES FOR INVASIVE SPECIES MANAGEMENT IN BRIDGETOWN AND HOLLINGSWORTH PONDS

Tuckahoe State Park Wetlands

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Wetlands

Tuckahoe State Park

- The Delmarva Bays of Tuckahoe State Park are incredibly unique and home to many rare plants and animals.
- The park is home to two seasonal wetlands: Bridgetown and Hollingsworth Ponds.
- Management in these areas are challenging

Wetlands: Major Invasive Species

Common Reed
Phragmites australis

Japanese Stiltgrass
Microstegium vimineum

Sweet Gum*
Liquidambar styraciflua

Persimmons Tree*
Diospyros virginiana

Periwinkle
Vinca minor

Reed Canary Grass
Phalaris arundinacea

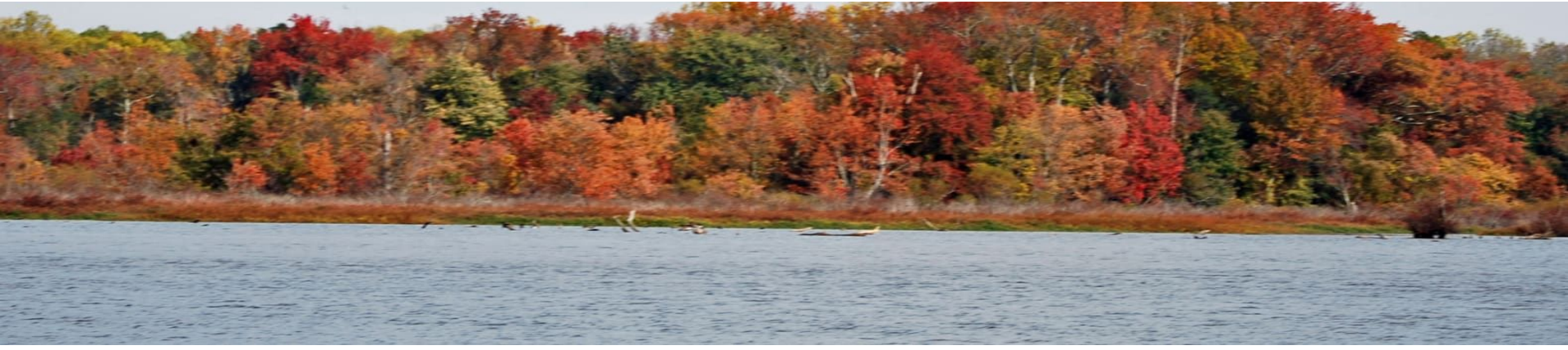
Red Maple*
Acer rubrum

Nuisance species*

Wetlands: Invasive Species Negative and Positive Impacts

- Negative impacts
  - Outcompete rare and native plants
    - Shading
    - Overgrowing
  - Decrease species richness
    - Allelotoxins
    - Shading

- Positive impacts
  - Creates more detritus
  - Traps more sediments
  - Provides habitat



Wetlands: Management Challenges

- Unique habitat
  - seasonal wetlands
  - rare and/or endangered plants and animals
  - sensitive area
    - trampling
    - heavy equipment

Wetlands: Possible Management Alternatives

- Plausible methods for invasive species management in Bridgetown and Hollingsworth Ponds:
    - Roundup Biactive®
    - Prescribed burns
    - Coupled management

Management Solutions: Roundup Biactive®

Roundup Biactive®

- was formulated for use in aquatic habitats (Taman, Moore, Becktin, and Shotter 2001).
- NOT available in North America yet (Relyea 2011).
- Found to be 100 times safer for frogs than the original Roundup formulation (Taman, Moore, Becktin, and Shotter 2001).

Management Solutions: Prescribed Burning

Pros:	Cons:
Reduce seed banks that are susceptible to burnings (Keeley 2006)	Can cause offsite smoke problems for traffic on roads and air quality. (Knapp et al. 2009)
lead to the increase of amphibian species richness over time (Schurbon and Fauth 2003; Flores et al. 2011).	Time consuming and labor intensive

Management Solutions: Coupled Management

Pros:	Cons:
Decreased Phragmites 3-fold (Ailstock et al. 2001)	Differs from species to species
Successful in high-nutrient wetlands (Elgersma 2017)	Detrimental in low-nutrient wetlands
Increase native plant species cover (Plentovich 2008)	More expensive; Same managing constraints

3-5 years

Summary


CAUTION
KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING
Roundup
BIACTIVE
Herbicide
GROUP M HERBICIDE
CONTENTS: 20 Litres