# Colonization of wetland habitat: Succession in restored habitats

### Merel Soons and Jos Verhoeven Utrecht University

Dennis Whigham Smithsonian Environmental Research Center Mary Leck (Rider University) Dispersal potential of a tidal river wetlands: Colonization of a created tidal freshwater marsh on the Delaware River, USA

Metthea Yepsen (University of Maryland) Andrew Baldwin (U. MD), Elizas McFarland, Marina LaForgia and Dennis Whigham (Smithsonian Environmental Research Center) Vegetation patterns in prior converted, restored, and reference wetlands in the U.S. Mid-Atlantic Coastal Plain

Karin Kettenring (Utah State University)

Eric Hazelton (Utah State), Sally Gallagher (U. Wisconsin and SERC), Heather Baron (Oregon State University and SERC), Melissa McCormick and Dennis Whigham (SERC) Reproduction, dispersal, emergence, and establishment of *Phragmites australis* in disturbance in Chesapeaek Bay tidal wetlands

> Susan Galatowitsch (University of Minnesota) Barriers to colonization of sedge-dominated wetlands

• Created: no historical wetland at restoration site degraded (altered) wetland Restored: at site • Enhanced: natural wetland present but dominated by invasive species

#### Prior converted wetland Eastern Shore, MD

### Restored wetland Eastern Shore, MD

### Tidal freshwater wetland Patuxent River , MD



### Rhode River, MD Brackish tidal wetland 1970

# Rhode River 2009



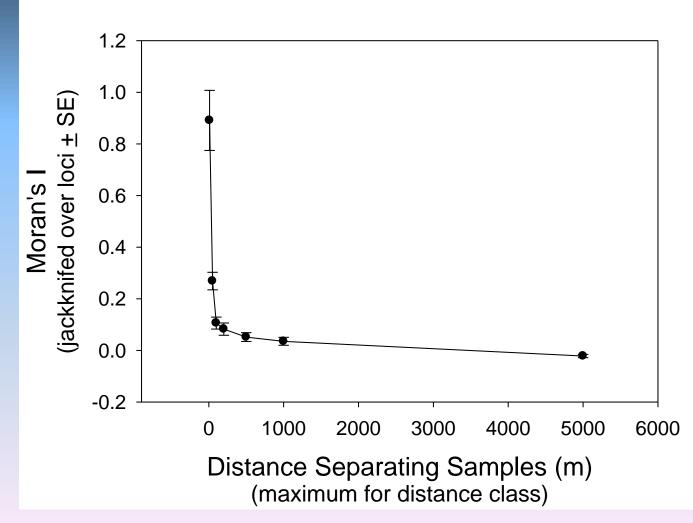
Does the amount of organic matter present at the time of restoration influence vegetation patterns, including colonization?

#### Is a seed bank present at the time of the restoration?



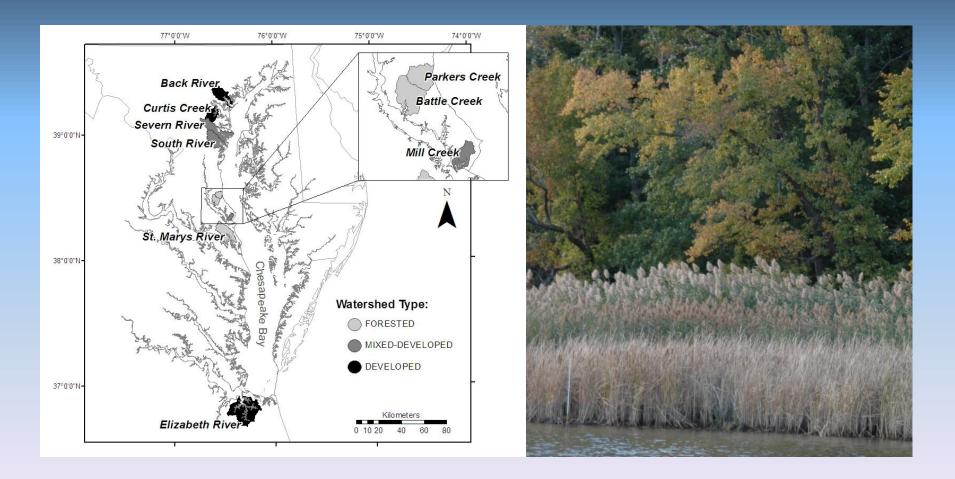


## Dispersal of seeds and vegetative propagules



McCormick, Kettenring, Baron and Whigham. J. Ecology. 2011

#### Substantial genetic variation within and among patches: 91% of patches had >1 genotype



McCormick, Kettenring, Baron, and Whigham. 2010. Wetlands





Platanthera lacera

Ragged fringed orchid

Spiranthes ovalis var. erostellata

October Ladies' Tresses

Mary Leck (Rider University) Dispersal potential of a tidal river wetlands: Colonization of a created tidal freshwater marsh on the Delaware River, USA

Metthea Yepsen (University of Maryland) Andrew Baldwin (U. MD), Elizas McFarland, Marina LaForgia and Dennis Whigham (Smithsonian Environmental Research Center) Vegetation patterns in prior converted, restored, and reference wetlands in the U.S. Mid-Atlantic Coastal Plain

Karin Kettenring (Utah State University)

Eric Hazelton (Utah State), Sally Gallagher (U. Wisconsin and SERC), Heather Baron (Oregon State University and SERC), Melissa McCormick and Dennis Whigham (SERC) Reproduction, dispersal, emergence, and establishment of *Phragmites australis* in disturbance in Chesapeaek Bay tidal wetlands

> Susan Galatowitsch (University of Minnesota) Barriers to colonization of sedge-dominated wetlands