Phragmites Management Workshop
Continuing Conversations Activity
September 4, 2024

For this activity, participants split into groups to rotate through three topics with 7 minutes for discussion at each station. A facilitator took notes on flip charts at each station. After the rotations, the facilitators provided 3 take-aways that stood out during their topic discussions. Virtual attendees participated in a similar exercise and their comments are included in the notes below.

Topic 1: Marsh Management Barriers and Solutions

Description: Marshes are managed in a variety of ways depending on land management goals, capacity, available funds, engagement with landowners, etc. This discussion will identify challenges and barriers (both experienced and perceived), and also look at potential solutions. Additional conversation can be had regarding technical assistance resources, funding, and connecting with landowners.

Discussion Notes:

Barriers

- Staff and equipment
    - Turnover
    - Training
    - Expertise
    - Knowledge transfer
- Funding for management and monitoring
- Permitting (timing, effort, complexity, time of year)
- Public access, perceptions, and willingness
    - Negative public perception of management actions
- Competing priorities (internal and inter-agency)
- Monitoring
    - Need longer grant windows
    - Need to include adaptive management
    - Pre-monitoring
    - Better mapping
- Logistical limitations
    - Protected resources
    - Public users/hunters
- Regulations, public and managers willing to include *Phragmites* in management plans
- Conflicting/limited land use (areas to restore)

- Site variability
- Short management time windows
- Limited Federal drone use for herbicide applications
- Adjacent land use conflicts (i.e. residential)
- Difficulty setting up burns on Federal land
- Difficulty getting access to the machines that are needed to plow down *Phragmites*
- Communication gap between researchers and managers about what the most effective management techniques are
- Funding!

Solutions

- More funding for specialized equipment, workshops, trainings, drones for application
- Monitoring requirements should be included by funders
- More public education
- Better internal and inter-agency coordination
    - Improve communication with partners and coordination for burning
- Use drones for site evaluation, mapping, monitoring
- Sharing and documenting results and lessons
- Use integrated pest management and a variety of herbicide application methods
- Petition for a policy change for drone use or to create a program to get contractors certified to be safe drone operators
- Have more workshops to brainstorm more solutions
- Tackle *Phragmites* with partners as a landscape scale invasive species effort

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Topic 2: Emerging Topics and Opportunities in Tidal Marsh Science

Description: Marsh science and management are constantly evolving and research and experience have shown us that we still have a lot to learn. This discussion will help to identify topics for further consideration, research and trial.

Discussion Notes:

- Further understanding of *Phragmites* pros and cons as they relate to ecosystem services and site/variable-specific variations
- Better understanding of animal behavior in relation to *Phragmites*
    - Marine organisms (fish, invertebrates), migratory birds (e.g., swallows), nesting birds, mammals
- Living with *Phragmites* - using it to meet management goals of adapting to sea level rise, etc.
- Understanding *Phragmites* burn risks and solutions at the wildlife urban interface

- Alternative *Phragmites* management strategies
    - Hydrological alterations
    - Salt applications - further tests in tidal marshes, useful in freshwater marshes?, can salt work if used in a different method (ways to get it drilled into the soil so it won't leach out)?
    - Sugar as an herbicide/pesticide treatment
- Optimizing herbicide use
    - Observations of overuse and 'drift' beyond intended targets
    - What are the exact surfactant-herbicide mixtures used in the most successful applications? Is it situational?
    - How are herbicide applications impacting wildlife? Other ecosystem services?
    - Are there herbicide-resistant strains of *Phragmites*?
    - The use of drones in mid-size *Phragmites* stands.
    - More work on the timing of herbicides and burns for an integrated pest management strategy. Could we spray at a different time than previously considered?
- Strategies and solutions for minimizing coastal squeeze (requires social, economic, policy solutions)
- Understanding when and where various kinds of interventions will work or not
    - Can existing (but underutilized/under-shared) monitoring data be gathered and leveraged to understand situations when a specific strategy can be expected to give the desired outcome
    - This concept was thought to be ripe for a new potential NERRS Science Collaborative (or other venue) proposal yielding important publications and recommendations for cost-effective management strategies and guiding future research
    - Are there set metrics we can follow to tell whether a site with *Phragmites* should be treated or preserved for sea level rise?
- More frequent, productive workshops and meetings between researchers, land managers, policymakers to discuss challenges, solutions (like our workshop)
- *Phragmites* as a biofuel (see work in Asia) or biochar - reuse mowed *Phragmites*
- Using biochar as a soil amendment for carbon and nitrogen storage services in addition to other projects like thin layer placement and living shorelines
- Farmland "retirement" - seed mixes and strategies that prevent *Phragmites* takeover once a farm is abandoned/converted
- Is there crossbreeding between native and invasive *Phragmites?*
- Coastal blue carbon and what part Phragmites plays in carbon storing capacity

Topic 3: Phragmites Pros and Cons

Description: *Phragmites* management is a controversial topic and is based on many factors including location, funding, resources, and management goals. This discussion will dive into the pros and cons of *Phragmites*, including both positive and negative impacts of management vs. living with it.

Pros	Cons
Great camo for hunting (can be used for waterfowl blinds, etc.)	Visibility corridor / Blocks view of marsh and waterways
Erosion control, capturing sediment, platform stabilization during storm surges	Homeowner concerns, property value impacts, safety
Lower post-storm impacts in areas with *Phragmites*	Fire hazard (fuel source)
Leaving some can prevent over-management	Hunting - can't see what you're hunting
Good windbreaker	More ticks and chiggers present in *Phragmites* (anecdotal reference)
Keeps up with sea level rise	Stagnant pools in *Phragmites* create mosquito breeding habitat
Can protect back bay marshes	Reduced habitat for species of concern / Monocultures of *Phragmites* are not suitable for at-risk and listed wildlife
Carbon, nitrogen and heavy metal sequestration / Turns nitrogen to gas (better water quality)	Difficult to walk through
Roosting/habitat value for some wildlife	Shields field markers and hinders navigation for monitoring efforts
Fitter than native plants	*Phragmites* wrack smothers other vegetation and can smother native dune grasses
Good for phytoremediation	Drainage alterations and blockages
Nutrient uptake	Can prevent dune migration
	Could impact terrapin migration
	Conflicts with native plant cover / Outcompetes native marsh vegetation
	Takes up valuable forest/marsh ecotone space
	Fragments marsh/beach habitat for native nesting birds
	Expensive to control and difficult to eradicate