

Great Lakes *Phragmites* Collaborative: Managing *Phragmites* with science on your side



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Michigan Wetlands Association Conference

14 September 2023



Phraggy: our native *Phragmites* mascot



Hobbies

Hanging out with diverse plant friends in his wetland home



Dislikes

His pushy cousin



Fun fact

His best friend is a Red-winged Blackbird who lives with him



Profession

Stabilizing soil, fighting climate change, and restoring wildlife habitat

Non-Native *Phragmites*: A Binational Issue





G R E A T L A K E S P H R A G M I T E S C O L L A B O R A T I V E



A partnership to link people, information, and action

www.greatlakesphragmites.net



Mission

The Collaborative was established to **facilitate communication** among stakeholders across the region and serve as a **resource center** for information on *Phragmites* biology, management, and research.



Core Team



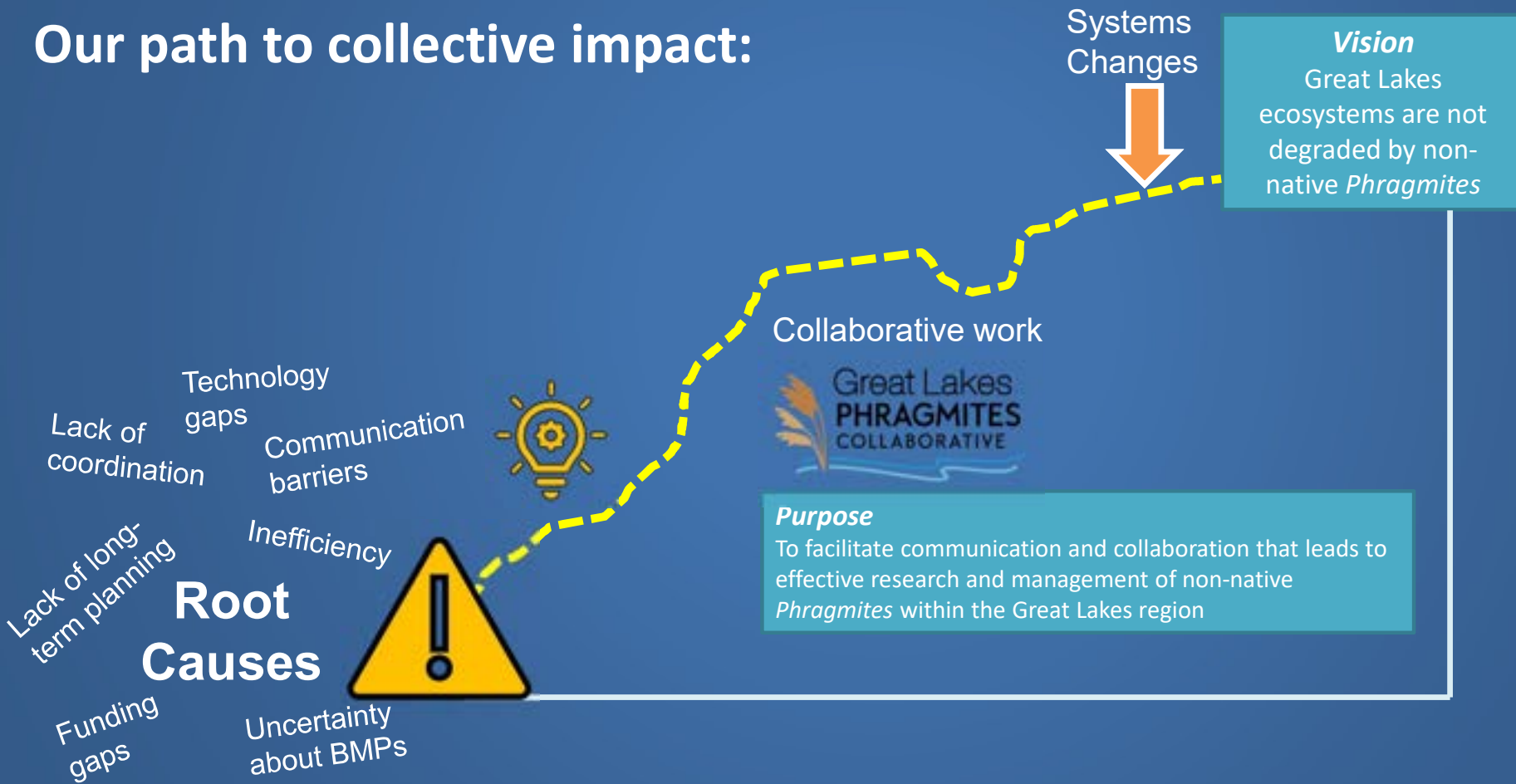
Advisory
Committee



Phrag
Community



Our path to collective impact:





Common Agenda

VISION GREAT LAKES ECOSYSTEMS ARE NOT DEGRADED BY NON-NATIVE PHRAGMITES

PURPOSE To facilitate communication and collaboration that leads to effective research and management of non-native Phragmites within the Great Lakes region

| FOCUS AREAS |  REGIONAL COORDINATION AND COLLABORATION |  BEST MANAGEMENT AND RESTORATION PLANNING |  ADVANCEMENT OF RESEARCH AND TECHNOLOGY |  FUNDING FOR PHRAGMITES MANAGEMENT |
|-------------------|--|--|--|---|
| MEMBER STRATEGIES | <ul style="list-style-type: none"> Facilitate informed decision-making to align investments and programs within and across jurisdictions Maintain a forum and network that is routinely used for sharing, discussing and accessing new and best available information Support consistent messaging and cross-jurisdictional communication and outreach efforts Encourage consistent use of online map tools to track regional distribution and inform early detection and rapid response efforts | <ul style="list-style-type: none"> Consolidate and share case studies, success stories, and existing best management guidance Identify obstacles and capacity gaps related to implementing best practices Promote program evaluation and adaptive management to improve decision-making and track progress Promote multi-year planning for management and restoration activities | <ul style="list-style-type: none"> Support and implement the Phragmites Adaptive Management Framework to improve understanding of the effectiveness of different management strategies Provide a forum for researchers to collaborate and communicate with managers Track the latest advancements in research and technology as well as share in an accessible format with the wider Phragmites community | <ul style="list-style-type: none"> Provide guidance to funding applicants and providers to facilitate consistency in requirements and approaches Communicate the importance of multi-year grants for Phragmites management and restoration programs Identify new sources and innovative approaches to funding the collaborative network and management programs Demonstrate the value of the GLPC and its outcomes to funders |

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The collage features several elements:

- Top Left:** A cartoon phragmite character wearing a white cap, safety glasses, and an orange life vest, holding a long-handled tool.
- Top Right:** A cartoon phragmite character holding a stack of blue folders, one labeled "SUCCESS".
- Bottom Left:** A cartoon phragmite character standing next to a presentation board with a pie chart and a laptop.
- Bottom Right:** A cartoon phragmite character sitting at a desk with a laptop, with the text "TAP TAP" above it.
- Background:** A collage of digital content including:
 - A website interface with a search bar and navigation menu.
 - A map of the Great Lakes region with a data overlay.
 - A "Research Round-Up" article titled "Phragmites Research Round-Up: April Edition" with a magnifying glass icon.
 - A tweet from @PhragmitesCollab with a headline: "EAST LAKE PHRAG HEADLINES: PHRAG'S JET-SETTING VAYCAY: 'JUST PASSING THROUGH' NEW SHORELINES".
 - A "Washburn County" contact information card with details like "State: Michigan", "City: Washburn", "Organization: Jackson, Lansing and Washburn COMB", "Contact Name: Shelia Singh", "Phone Number: (517) 295-2008", "Email: shelia@washburnmi.com", and "Website: Washburn.com".
 - Other smaller article snippets and icons.

www.greatlakesphragmites.net

Upcoming Work



Guidance Document



Consistency
Coordination
Available funding



Identify
research
gaps

Uncertainty
Wasted
resources



Native/Hybrid Mapper



The screenshot shows the 'Native/Hybrid Phragmites Mapper' web application. A central splash screen is overlaid on a map of the Great Lakes region. The splash screen features the organization's logo and the following text:

Welcome to the Native/Hybrid Phragmites Mapper

The aim of the Native/Hybrid Phragmites Mapper is to share the locations of identified Native, Non-native, and Hybrid Phragmites across the Great Lakes basin. The mapper allows researchers the ability to share their findings and collaborate with others for the advancement and protection of our Great Lakes ecosystems. You are encouraged to share your data with the Great Lakes Phragmites Collaborative. If you are interested in contributing your work to the mapper, please fill one of our 2 submission forms below.

Uploading Individual Locations

This form can be used to upload individual points at a time. The survey form has a series of questions that need to be completed for each individual Phragmites field point.

AND

Batch Data Upload

This form can be used to upload multiple points at a time. This form requires that the submitter submit the pre-formatted excel form for batch upload. Please follow closely all directions given in this form.

To exit this splash screen, click anywhere outside this box to close it.

The background interface includes a map with a legend for 'Native' (green dot) and 'Hybrid' (orange dot). At the top right, there are buttons for '+ Batch Upload', '+ Add Location', and 'How to Use'. A 'Site Details' panel is visible on the right side of the map. The footer contains 'Great Lakes Commission', 'Report a Problem', and 'Copyright 2020 Great Lakes Commission'.



Visual Observation

For this section of the survey please go through each question to help you identify whether the phragmites display native or non-native traits. For more information on phragmites identification please visit our [Native vs Non-native](#) site.

Leaf Color

Leaves of the invasive non-native subspecies are a bluish gray-green, while those of the native phragmites are a yellowish green. This is easiest to see when they grow side-by-side.

Yellow-green (Native)

Blue-green (Non-native)

Height

The invasive non-native phragmites can reach up to 6 m (20 ft) in height, while the native species is less robust. Typically it reaches 2 m (6.5 ft) in height and grows as scattered stems.

Up to 2m (Native)

Up to 6m (Non-native)

Leaf Sheath Attachment

For the invasive non-native phragmites, most leaf sheaths are present and tightly adhering to culms, while the native leaf sheaths are missing or very loosely attached to culms.

Loose (Native)

Tight (Non-native)

Stem Density

The invasive non-native phragmites forms dense monocultures, rapidly outcompeting native species. Its stems break down very slowly, forming a dense thatch whereas the native species is less robust and grows as scattered stems.

Sparse (Native)

Dense (Non-native)

Stem Traits

Flexible, smooth, shiny, red-brown, fungal spotted (Native)

Rigid, dull, rough, ridged (Non-native)

Leaf Ligule

Non-native phragmites has a narrow ligule that ranges from 0.1-0.4 mm, while the native has a wider ligule, ranging from 0.4-1 mm. Because the native phragmites is less sturdy in general, its ligule is more likely to shred and fray by midsummer.

Longer (1.0-1.7mm) (Native)

Shorter (0.4-0.9mm) (Non-native)

Flower head/Panicle

Open/loose, smaller (Native)

Compact, longer (Non-native)

Seed Glume

Non-native phragmites' lower, shorter glume is usually 2.6-4.2 mm long while that of the native subspecies is longer at 4-7 mm.

Longer, 4-7mm (Native)

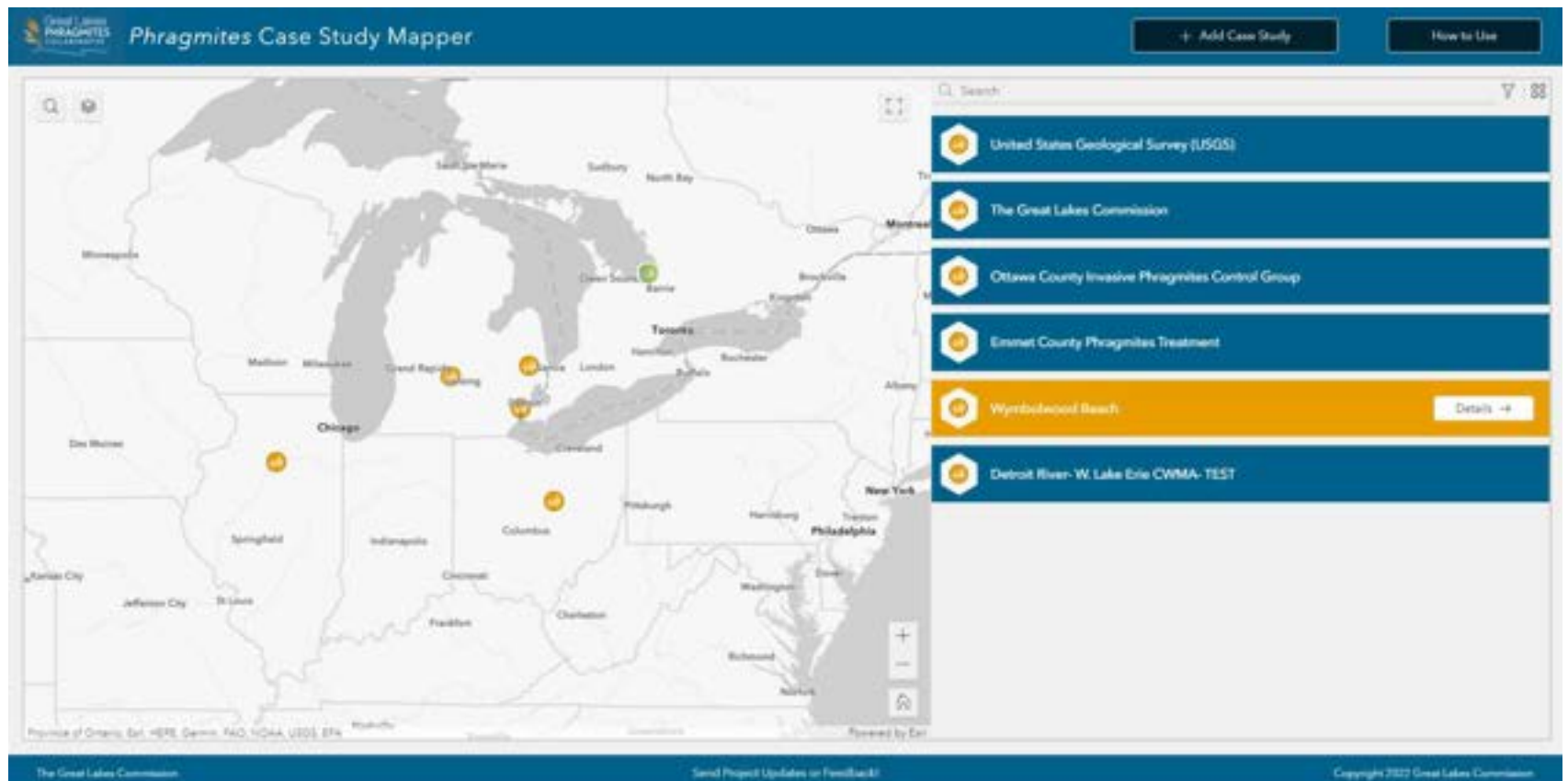
Shorter, 2.6-4.2mm (Non-native)

Stem (culm) ridges under leaf sheath

Not present (Native)

Present (Non-native)

Case Studies



Phragmites Case Study Mapper

Search: 83

- United States Geological Survey (USGS)
- The Great Lakes Commission
- Ottawa County Invasive Phragmites Control Group
- Essex County Phragmites Treatment
- Wyndolwood Beach** [Details →](#)
- Detroit River- W. Lake Erie CWMA- TEST

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*Phragmites Adaptive
Management Framework*



www.greatlakesphragmites.net/pamf

PAMF@GLC.org

Objectives

- Benefits of participatory science/ Adaptive Management programs
- Maximizing learning and data integrity through program design and evaluation
- Why you should join PAMF!



Participatory Science

Opportunities

- Cost effective
- Amount of data
- Variety of data
- Education/engagement
- Collective learning



Challenges

- Training participants
- Reproducibility
- Data quality

Why PAMF?



Herbicides



Mechanical



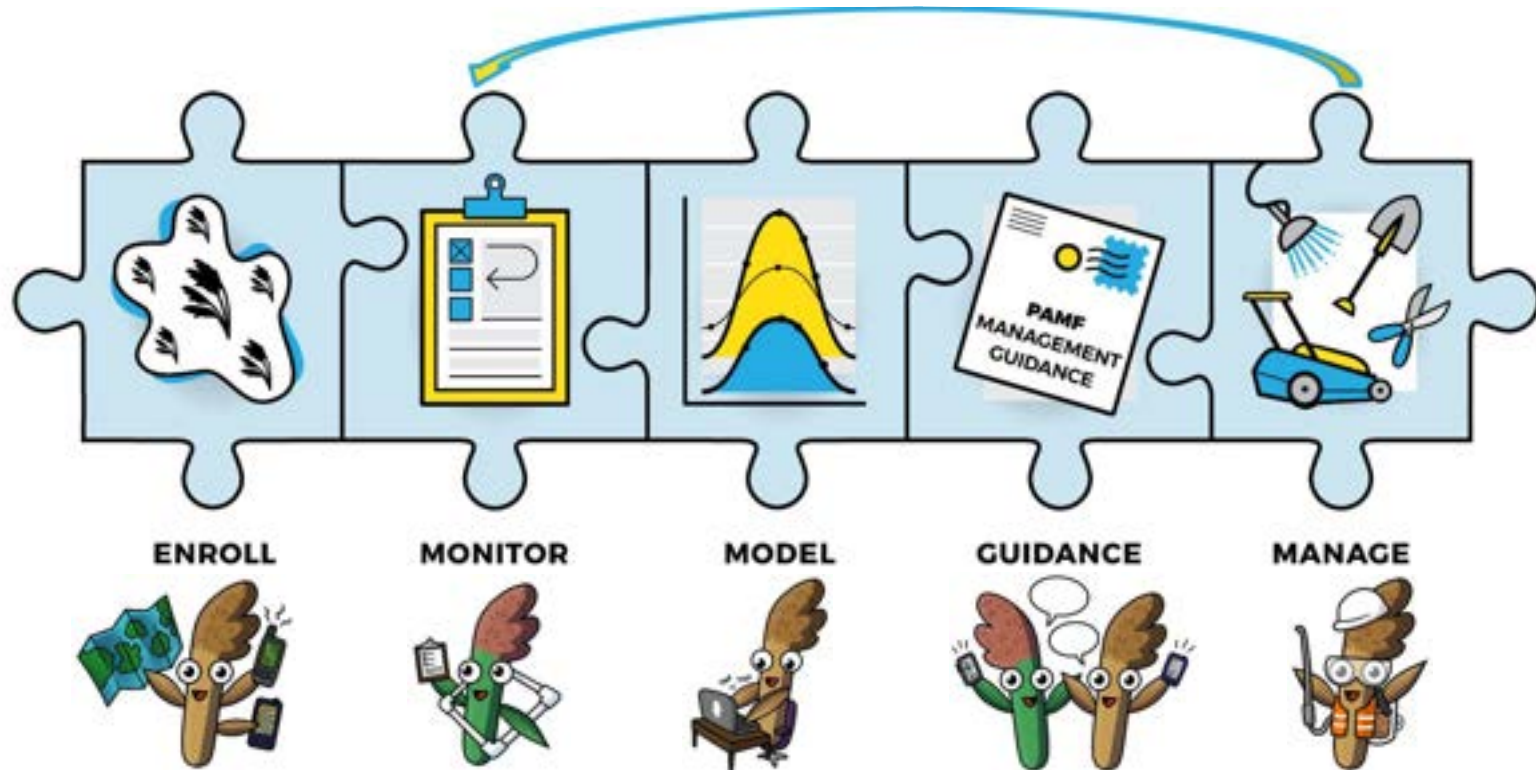
Prescribed burn



Hydrologic

- Variable effectiveness
 - Site-specific conditions
 - Implementation technique
- Minimal knowledge sharing
- Expert disagreement
- Resource intensive

PAMF: An Adaptive Management Program



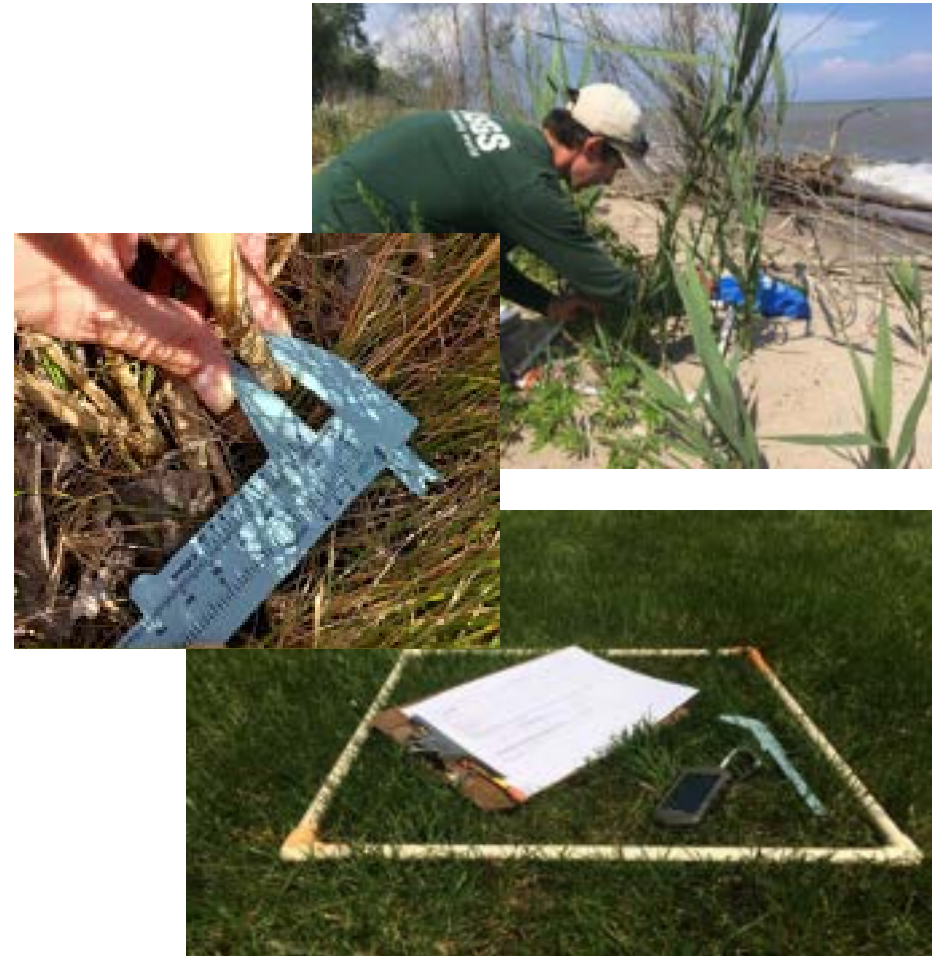
Enrolling



- ✓ Accessible
- ✓ Simple design

Monitoring

- Evaluated different measures
 - Stem height, percent cover, above ground biomass, water levels, soil pH, soil nutrients, etc.
 - Stem density and percent establishment
 - Inform the PAMF model
 - Easy to measure
 - Few tools
- ✓ **Accessible** – No background education needed
- ✓ **Simple design**
- ✓ **Simple data collection protocols**

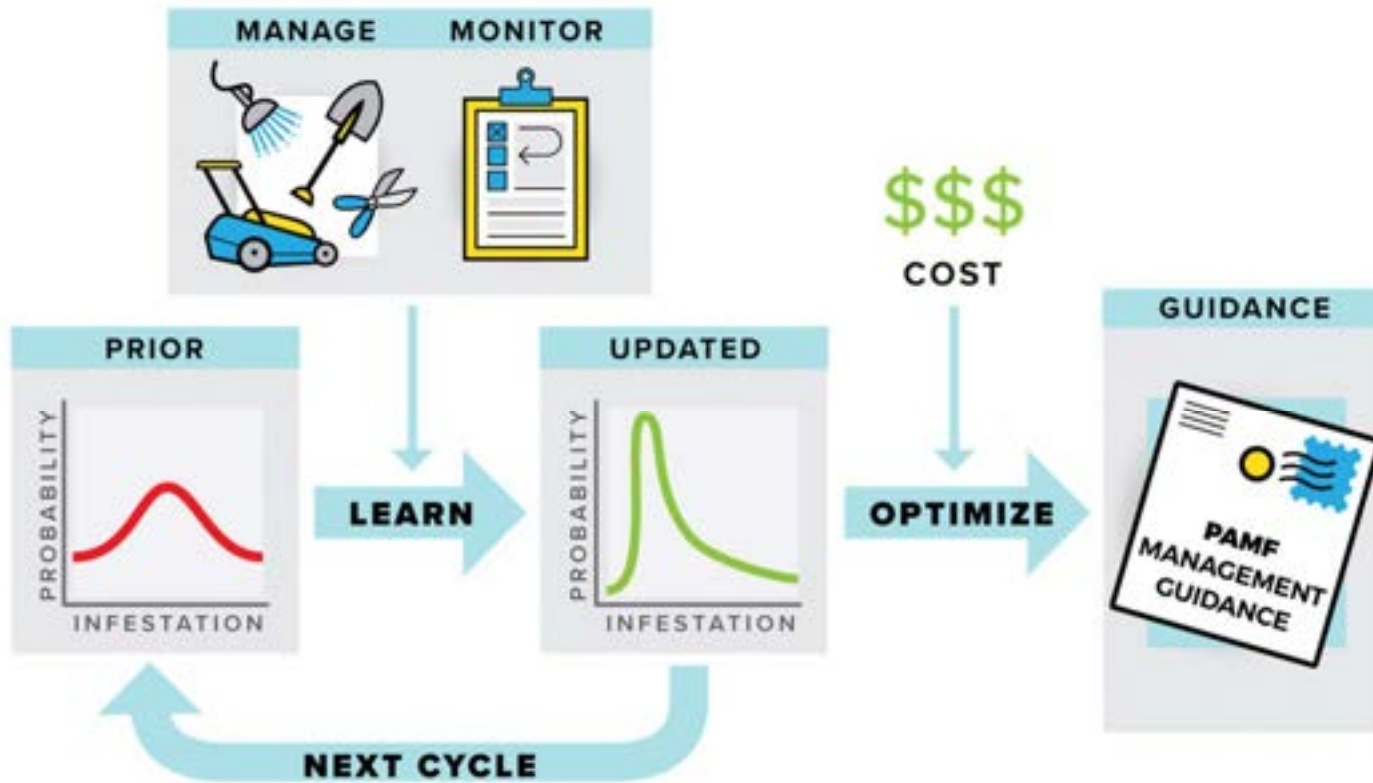


Data submission

- Central database
- Summary of management history
- ✓ **Accessible**
- ✓ **Simple design**

The screenshot shows the PAMF (Phragmites Adaptive Management Framework) Management Unit Homepage. The page features a navigation menu at the top with links for Home, Branches, View Management Unit, Create a Management Unit, View Management Guidelines, Submit Phragmiting, Users, Reports, Administrative Controls, About, Contact Us, and Project Team Privacy. The main content area is titled "Management Unit Homepage" and includes a list of links for Branches / Inter-marsh Unit, such as View Field Reports, Phragmite Monitoring Sheet, Report Monitoring, Report Management Action, Management Guidance, Request 180-Cycle Forecasting Guidance, Images & Documents, Deactivate Unit, and Reactivate Unit. Below this is a "Data Submission Tracker (2022 - 2023)" section with a dropdown menu set to "Annual Report Year - 2022". The tracker lists several report types: "Translocating Phase Management Report", "Disturb Phase Management Report", "Disturb Phase Management Report", and "Annual Monitoring Report Year - 2023". To the right of the text is a satellite map showing two purple polygons overlaid on a wetland area, with a "Map" and "Satellite" toggle at the top left of the map interface.

Learning Model



Guidance

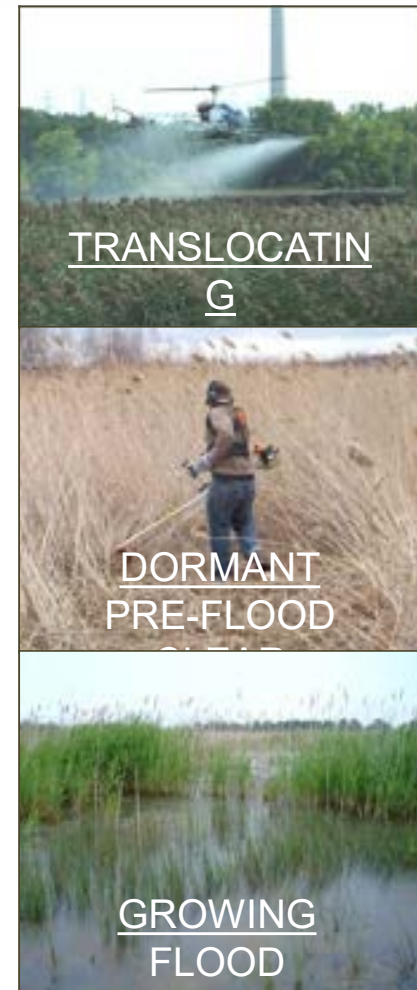
- Multiple guidance options (timing and combinations)
- Guidance does not tell the participant what application techniques they must use
- Flexibility in application and flexibility in timing

- ✓ **Accessible**
- ✓ **Motivate/incentivize participation**

| Management Unit | Translocating | Dormant | Growing |
|-----------------|---------------|-----------------|---------|
| Optimal | Glyphosate | Pre-Flood Clear | Flood |
| Near-Optimal | Spading | Rest | Spading |
| Near-Optimal | Glyphosate+ | Rest | Rest |

Program Design: Management

- Limited number of management combinations
- Flexible
 - Do not have to follow model guidance
 - Endless implementation options
 - ✓ **Accessible**
 - ✓ **Simple design**



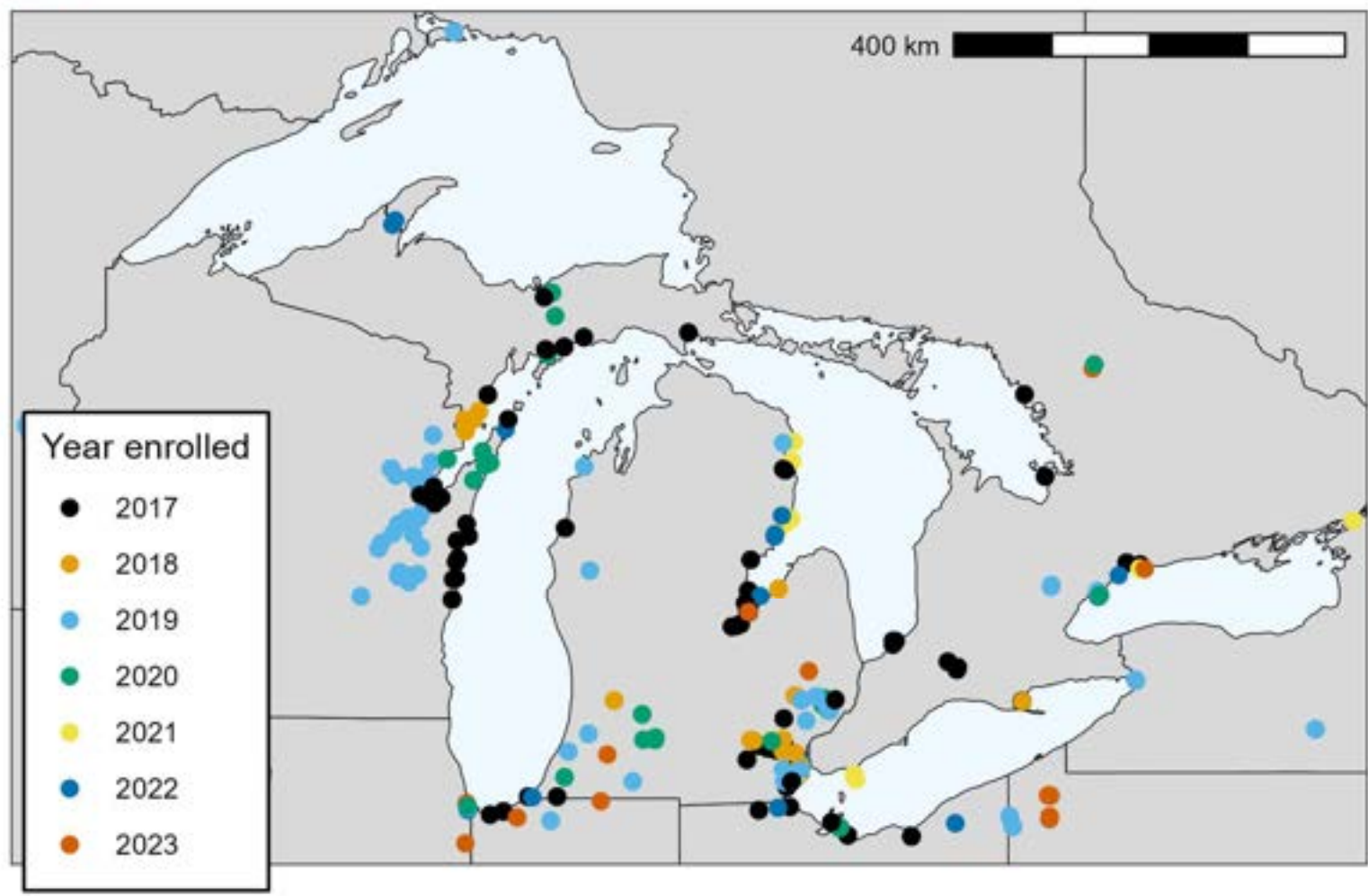
Program Design: Supporting Resources

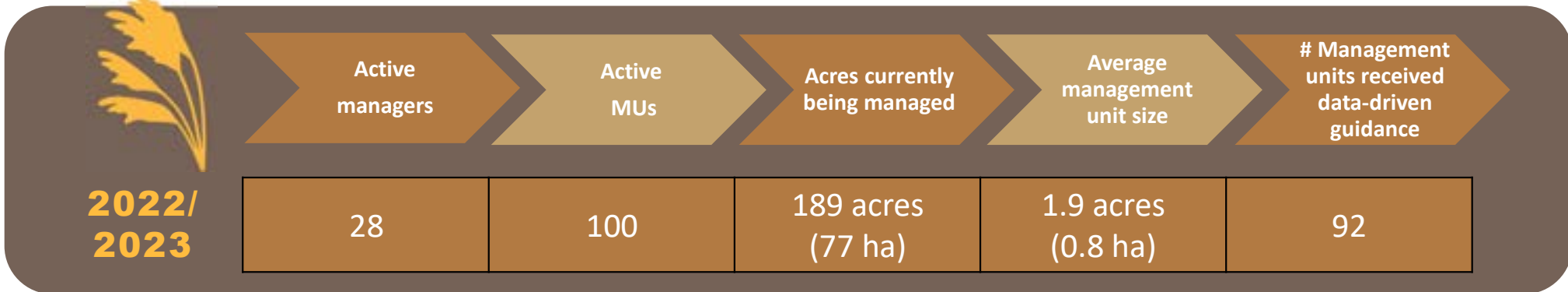
- Field assistance
- Training opportunities
 - In-person
 - Virtual (live and self-paced)
- Written and visual resources
 - ✓ Accessible
 - ✓ Simple design
 - ✓ Participant trainings
 - ✓ Open lines of communication



Benefits of PAMF









GREAT LAKES PHRAGMITES COLLABORATIVE

Get involved today!

www.greatlakesphragmites.net

Questions?



This material is based upon work supported by the U.S. Geological Survey under Grant/Cooperative Agreement No. G23AC00436.