

Great Lakes *Phragmites* Collaborative Update



Samantha Tank
Great Lakes Commission
2 June 2022
Great Lakes Panel

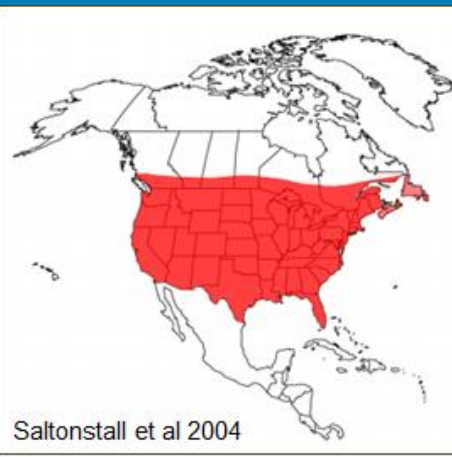
Non-Native *Phragmites*: A Binational Issue

10 years
of the
GLPC!

Great Lakes
PHRAGMITES
COLLABORATIVE



Great Lakes
RESTORATION



A partnership to link people, information, and action

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.



The Advisory Committee

Federal Government Agencies

- Josh Booker, US Fish and Wildlife
- Heather Braun, ECCC
- Joshua Unghire, USACE
- Brian Smith, Federal Hwy Admin
- Desiree Robertson, National Park Service
- Rochelle Sturtevant, NOAA/ MI Sea Grant

State/Province Government Agencies

- Natalie Boyd, Ontario MTO
- Jennifer Dunn, New York DEC
- Francine MacDonald, Ontario MNDMNR
- Rich Rezanka, Minnesota DNR
- Mark Witt, Ohio DNR
- Kevin Walters, Michigan EGLE
- Amy Kretlow, Wisconsin DNR

Academia

- Andrea Locke, Buffalo State University

Non-profit Organizations

- Janice Gilbert, OPCC/OPWG
- Jason Hill, Ducks Unlimited

Tribal

- Alex Wieten, Gun Lake Tribe
- Travis Bartnick, GLIFWC
- Gabrielle VanBergen, Red Cliff Band of Lake Superior Chippewa

Core Team

- Samantha Tank, GLC
- Theresa Gruninger, GLC
- Patrick Canniff, GLC
- Erika Jensen, GLC
- Kurt Kowalski, USGS
- Taaja Tucker, USGS

Stakeholder Community

Great Lakes *Phragmites* Collaborative

Core Team

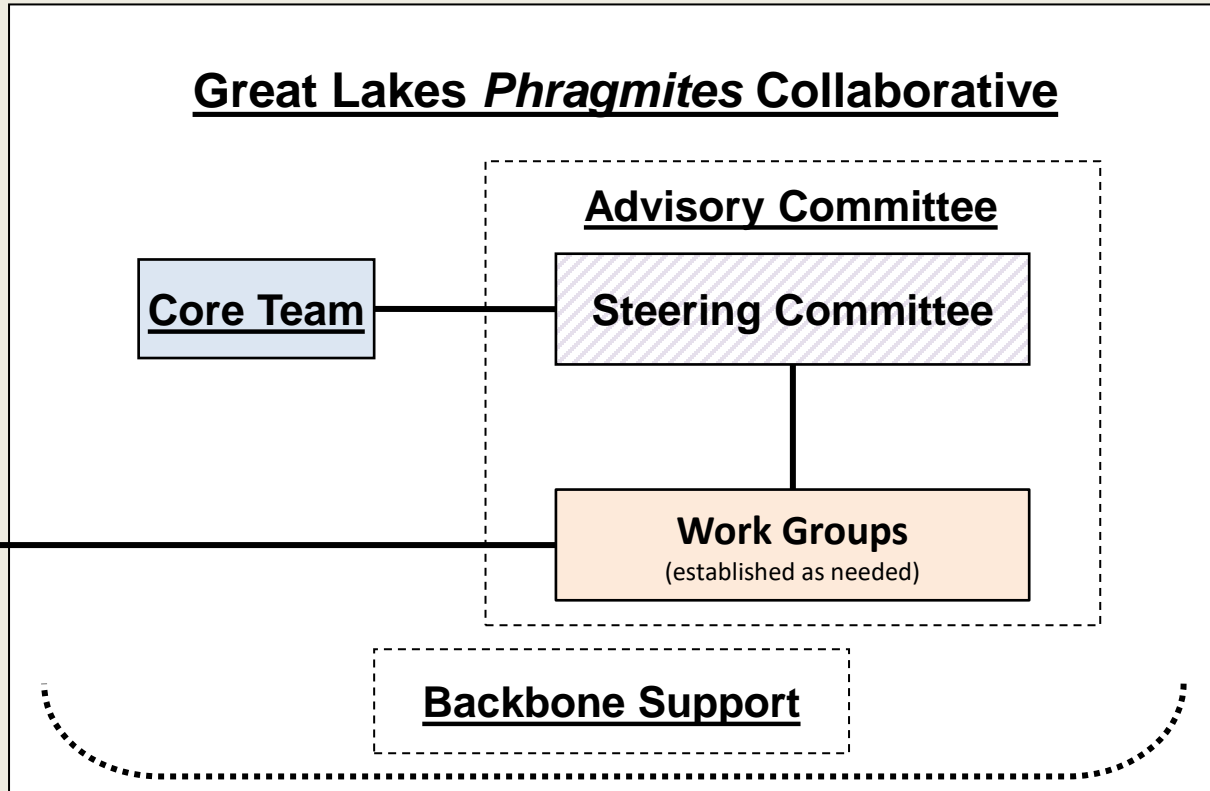
Advisory Committee

Steering Committee

Work Groups
(established as needed)

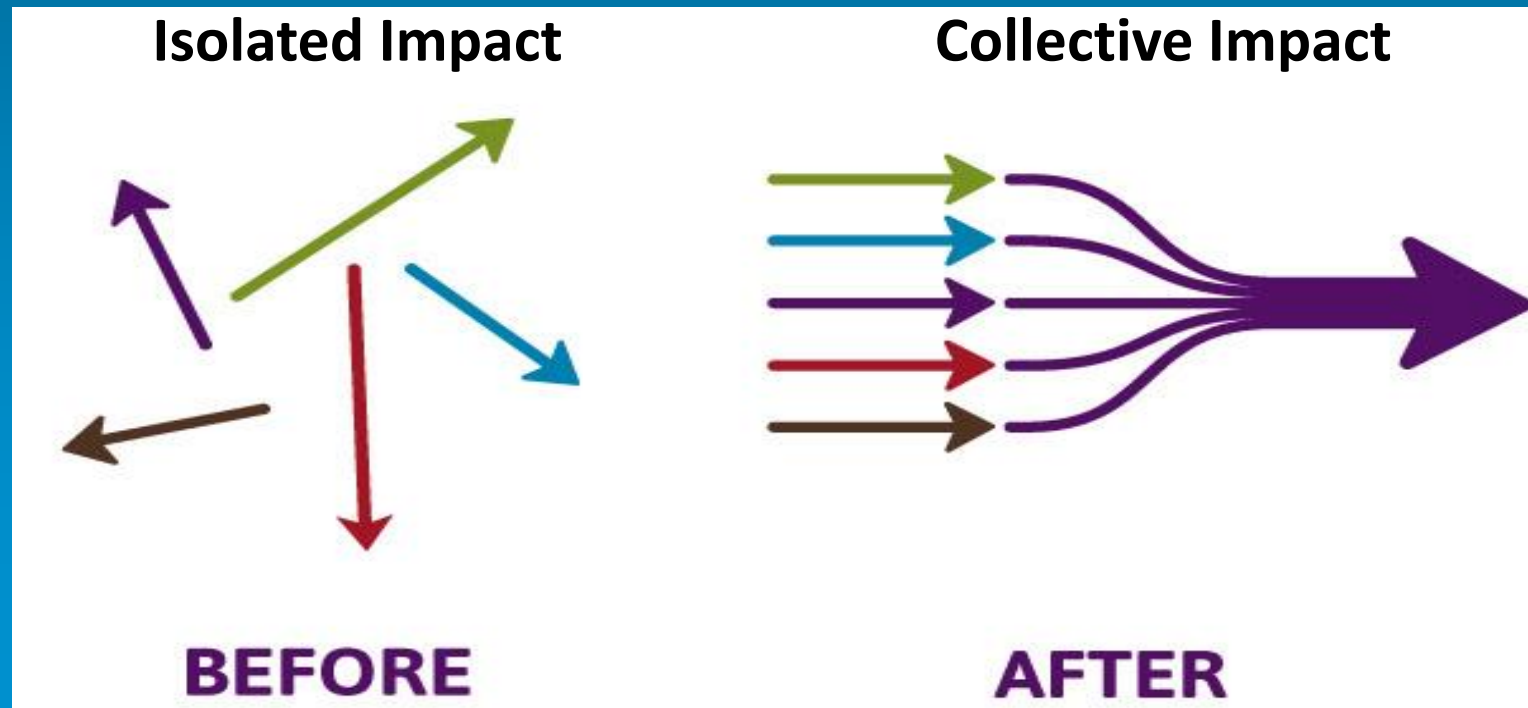
**Subject
Matter
Experts**

Backbone Support



Collective Impact:

“the commitment of a group of important actors from different sectors to a common agenda for solving a specific social problem” (*Kania and Kramer, 2011*)



Our path to collective impact:

Systems
Changes



Vision
Great Lakes
ecosystems are not
degraded by non-
native *Phragmites*

Collaborative work



Purpose

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

**Root
Causes**



- Lack of long-term planning
- Communication barriers
- Lack of coordination
- Technology gaps
- Funding gaps
- Inefficiency
- Uncertainty about BMPs

Status of Collective Impact

| ELEMENT | STATUS | | | |
|---------------------------------|--------|--|--|--|
| Common Agenda | | | | |
| Shared Measurements | | | | |
| Mutually Reinforcing Activities | | | | |
| Continuous Communication | | | | |
| Backbone Support | | | | |

2016



Collective Impact Approach

Neutral Backbone
Organization

A dedicated organization
coordinates participation



Continuous
Communication

Effective and open lines of
communication



Common Agenda

A shared vision and approach



Shared System of
Measurement

Consistent evaluation metrics



Mutually Reinforcing
Activities





Aligned activities and priorities



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 <i>PHRAGMITES</i> 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 <i>Phragmites</i> 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 <i>Phragmites</i> 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 <i>Phragmites</i> 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 |

Success over the past 5 years



Supporting the Common Agenda

LINKING PEOPLE, INFORMATION & ACTION

Great Lakes
PHRAGMITES
COLLABORATIVE

Phragmites Management Research Resources FRM About Blog


The screenshot shows a website interface with a blue header containing the logo and navigation links. Below the header is a large image of a wetland. Underneath is a grid of eight icons, each with a title and a brief description of a service offered by the organization.


| | | | |
|--|--|--|---|
| <p>IDENTIFY Learn how to identify Phragmites and distinguish between the native and non-native forms.</p> | <p>MAP & TRACK Report and share your Phragmites sightings, and see where Phragmites has been detected in your area.</p> | <p>MANAGE & RESTORE Learn about effective management techniques and discover best practices for post-treatment restoration.</p> | <p>ADAPTIVE MANAGEMENT Learn about the Phragmites Adaptive Management Framework and how it can benefit your work.</p> |
| <p>WEBINARS Watch recorded presentations on a wide range of research and management topics.</p> | <p>LISTSERV Join a conversation with over 500 Phragmites professionals; ask questions and stay connected.</p> | <p>NEWSLETTER Sign up to receive a weekly digest of Phragmites news stories, plus a monthly Research Round-up of the latest publications.</p> | <p>SUCCESS STORIES Learn about the approaches of several successful Phragmites management programs in the Great Lakes basin.</p> |




Supporting the Common Agenda

LINKING PEOPLE, INFORMATION & ACTION







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Phragmites Management Research Resources FRAP About Blog



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Phragmites Management Research Resources FRAP About Blog

Seed-based revegetation following Phragmites australis control

Presented by Emily Martin and Dr. Karin Kettinger of Utah State University

Presented live on March 28, 2018

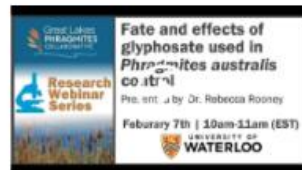


Great Lakes PHRAGMITES COLLABORATIVE
Research Webinar Series
Seed-based revegetation following Phragmites control
Presented by Emily Martin and Dr. Karin Kettinger
March 28 | 2:00 - 3:00 PM (EDT)
Utah State University
Great Lakes Phragmites Collaborative USGS

Fate and effects of glyphosate in Phragmites australis control

Presented by Dr. Rebecca Rooney of the University of Waterloo

Presented live on Feb 7, 2018



Great Lakes PHRAGMITES COLLABORATIVE
Research Webinar Series
Fate and effects of glyphosate used in Phragmites australis control
Presented by Dr. Rebecca Rooney
February 7th | 10am-11am (EST)
UNIVERSITY OF WATERLOO

Multi-scale remote sensing for Phragmites detection in southwestern Ontario

Presented by James Marcaccio in collaboration with Dr. Pat Chow-Fraser (McMaster University)

Presented live on Jan 17, 2018



Great Lakes PHRAGMITES COLLABORATIVE
Research Webinar Series
Multi-scale remote sensing methods for Phragmites detection in southwestern Ontario
Presented by James Marcaccio in collaboration with Dr. Pat Chow-Fraser
January 17th | 2:00-3:00 PM
McMaster University

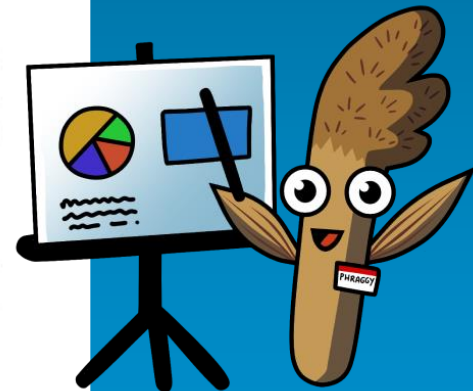
Ecological effects of invasive Phragmites in a Lake Erie coastal marsh

Presented by Courtney Robitzaud in collaboration with Dr. Rebecca Rooney (University of Waterloo)

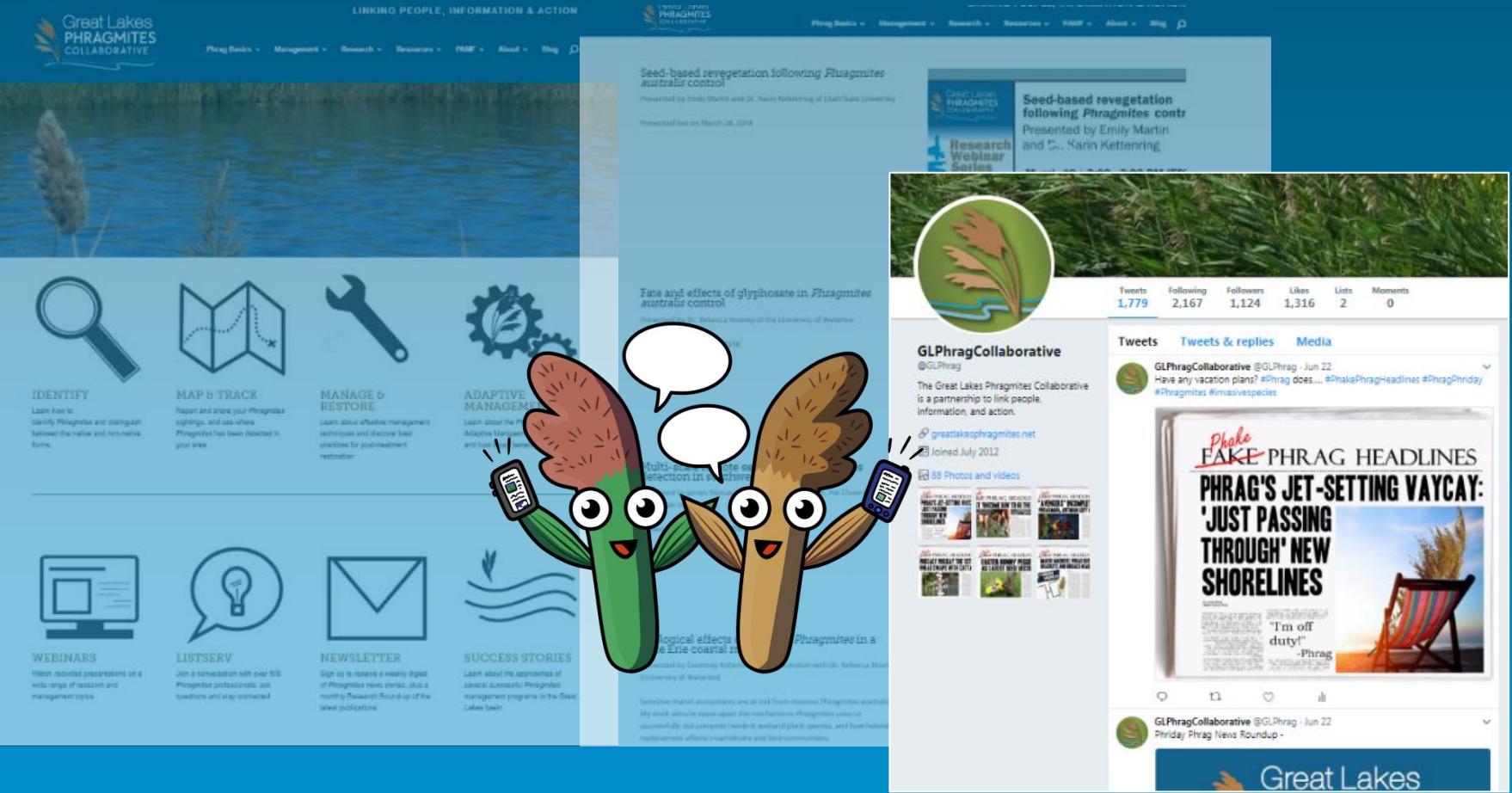
Sensitive marsh ecosystems are at risk from invasive Phragmites australis. We work to better understand the mechanisms Phragmites uses to successfully colonize sensitive wetland plant species, and how habitat replacement affects biodiversity and food communities.



Great Lakes PHRAGMITES COLLABORATIVE
Research Webinar Series
Ecological effects of invasive Phragmites in a Lake Erie coastal marsh
Presented by Courtney Robitzaud in collaboration with Dr. Rebecca Rooney
December 6 | 10-11 AM (EDT)
UNIVERSITY OF WATERLOO



Supporting the Common Agenda



The collage features several key elements:

- Website Screenshot:** A view of the Great Lakes Phragmites Collaborative website with the tagline "LINKING PEOPLE, INFORMATION & ACTION". It includes navigation menus for Phragmites, Management, Research, Resources, FRMF, About, and Blog. A featured article titled "Seed-based revegetation following Phragmites australis control" is highlighted, presented by Emily Martin and Dr. Karin Kettnering.
- Twitter Feed:** A screenshot of the @GLPhragCollaborative Twitter profile, showing 1,779 tweets, 2,167 following, and 1,124 followers. A tweet from June 22 asks, "Have any vacation plans? #Phrag does... #PhragHeadlines #PhragFriday #Phragmites #invasivespecies". Below the tweet is a graphic titled "Phrag FAKE PHRAG HEADLINES" with the headline "PHRAG'S JET-SETTING VAYCAY: 'JUST PASSING THROUGH' NEW SHORELINES" and a photo of a beach chair.
- Website Navigation:** A grid of icons representing various website functions: Identify (magnifying glass), Map & Track (map), Manage & Restore (wrench), Adaptive Management (gears), Webinars (computer monitor), Listserv (lightbulb), Newsletter (envelope), and Success Stories (leaf).
- Cartoon Characters:** Two anthropomorphic phragmites plants with faces, arms, and legs. They are holding smartphones and have speech bubbles, appearing to be in conversation.

Supporting the Common Agenda

Seed-based revegetation following *Phragmites australis* control

Presented by Jordi Martín and Dr. Neve Mathewson of Utah State University

Presented live on March 28, 2018

Fate and effects of glyphosate in *Phragmites australis* control

Presented by Dr. Rebecca Henry of the University of Waterloo

Presented live on July 7, 2018

Multi-scale remote sensing for *Phragmites* detection in southwestern Lake Erie

Presented by James McElroy, University of Guelph

Presented live on July 10, 2018

Ecological effects of invasive *Phragmites* in a Lake Erie coastal marsh

Presented by Gregory Ribicovich in collaboration with Dr. James McElroy, University of Waterloo

Presented live on July 10, 2018

Seed-based Revegetation following *Phragmites australis* Control

Fate and Effects of Glyphosate in *Phragmites australis* Control



Multi-scale Remote Sensing for *Phragmites* Detection in Southwestern Lake Erie

Ecological Effects of Invasive *Phragmites* in a Lake Erie Coastal Marsh



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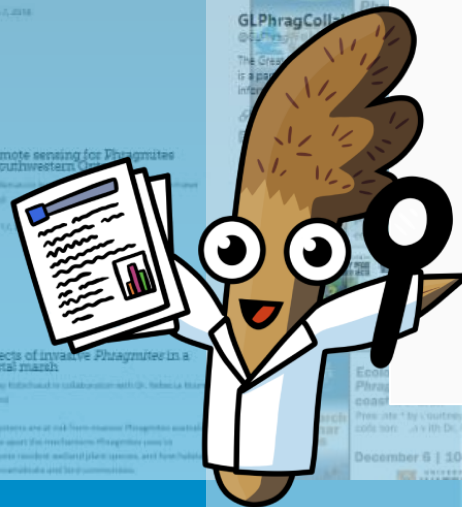
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SUCCESS STORIES

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Research Round-Up

Phragmites Research Round-Up: April Edition

This digest features research published in the month of April. [Click here](#) to view the archive of these newsletters as well as an FAQ on how articles are selected. Enjoy the articles below and be sure to [contact us](#) with your feedback!

Morphological and anatomical changes of *Phragmites australis* Cav. due to the uptake and accumulation of heavy metals from polluted soils

Minkina et al.
Science of the Total Environment 636
DOI: <https://doi.org/10.1016/j.scotenv.2018.04.309> | Published online: April 27, 2018.

Complementary responses of morphology and physiology enhance the stand-scale production of a model invasive species under elevated CO2 and nitrogen

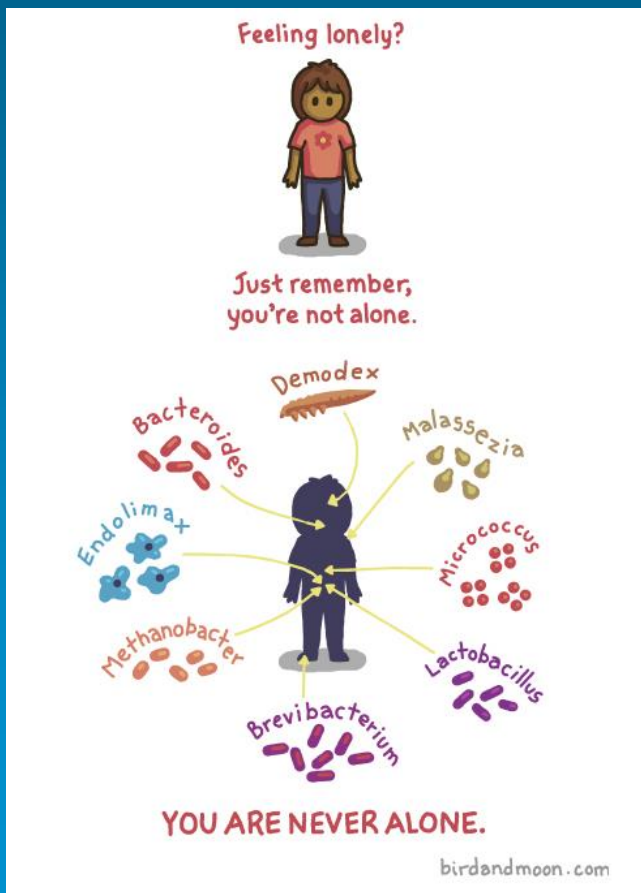
Thomas J. Mozder and Joshua S. Caplan
Functional Ecology, forthcoming issue
DOI: <https://doi.org/10.1111/1365-2435.13106> | Published online: April 25, 2018

The effect of water velocity on nitrate removal in vegetated waterways

Giuseppe Castaldelli, Vassilis Aschonitis, Elisa Anna Fano, and Elisa Soana
Journal of Environmental Management 215, 230-238
DOI: <https://doi.org/10.1016/j.jenvman.2018.03.071> | Published online: April 2, 2018.

GLPhragCollaborative @GPhrag Jun 22
Friday Phrag News Roundup -

Collaborative for Microbial Symbiosis and *Phragmites* Management



Phragmites



Foliage
Stems
Roots
Seeds

Microbes impact:
Biomass Production, Stem Density,
Rhizome Growth, Seed Output, Growth Rate,
Drought,
Temperature, Salt Tolerance

Collaborative for Microbial Symbiosis and *Phragmites* Management

Feeling lonely?



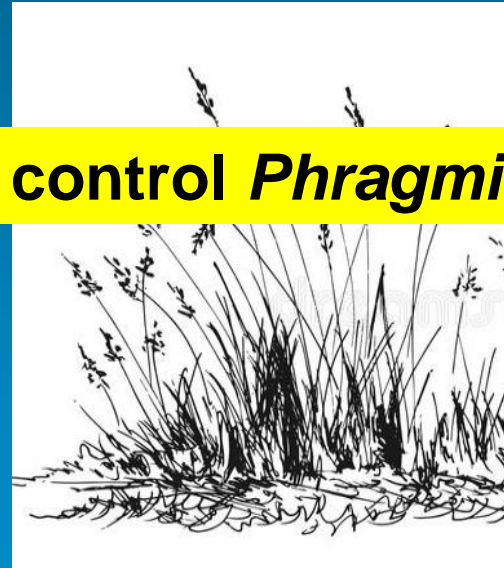
Can we disturb microbes to control *Phragmites*?



YOU ARE NEVER ALONE.

birdandmoon.com

Phragmites



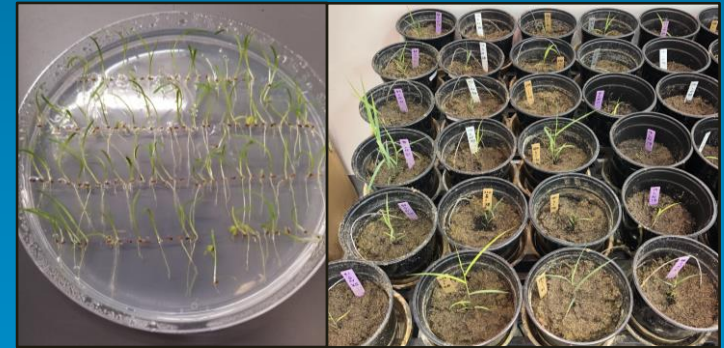
Stems
Roots
Seeds


Microbes impact:

Biomass Production, Stem Density,
Rhizome Growth, Seed Output, Growth Rate,
Drought,
Temperature, Salt Tolerance

Collaborative for Microbial Symbiosis and *Phragmites* Management

- Created a multi-institution research collaborative to collectively address:
 - Microbiome research gaps
 - Novel microbe-based management
- Published ~15 papers to date
 - Microbial inventories and functional assessments
- Research focused on microbe-based control
- Rutgers/USGS patent application for bioherbicide





PAMF

*Phragmites Adaptive
Management Framework*

Current Management Efforts

Yield Variable Results



Herbicides



Mechanical



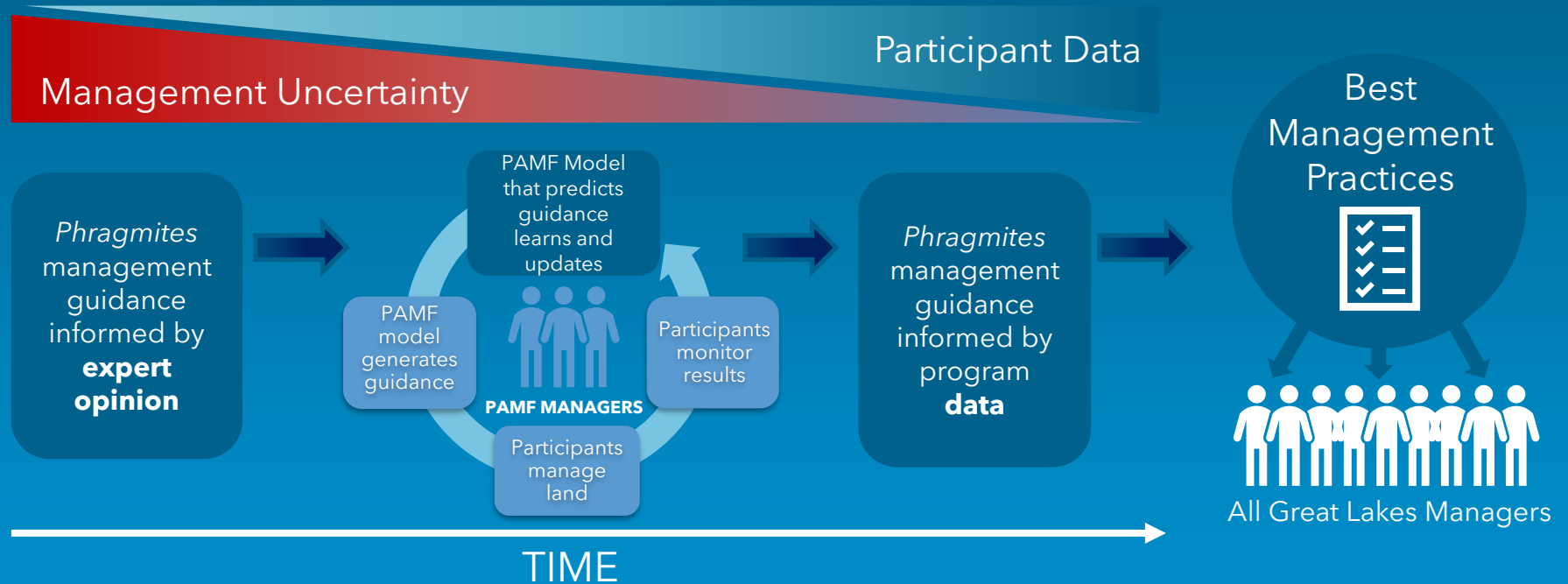
Prescribed burn



Hydrologic

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

Trajectory of PAMF





PAMF Strategic Plan

Phragmites Adaptive Management Framework 2020-2026

Our mission is to find the best strategies for managing invasive *Phragmites* in the Great Lakes region

We envision a program that transforms the way that invasive *Phragmites* management decisions are made throughout the Great Lakes region



PHRAGMITES MANAGEMENT

FOCUS AREAS



COLLECTIVE LEARNING



ACTIVE PARTICIPATION



PROGRAM SUSTAINABILITY

GOALS

PAMF management guidance is widely used to reduce the prevalence of invasive *Phragmites* in the Great Lakes region

PAMF uses its annual monitoring and data-driven modeling to understand how invasive *Phragmites* responds to management actions

PAMF engages a diversity of active partners, and participation in PAMF is a standard practice for *Phragmites* managers

PAMF is supported by a stable financial and programmatic knowledge base and reflects evolving management priorities and practices

OBJECTIVES

PAMF management guidance is used to control *Phragmites* in management units

PAMF reduces uncertainty surrounding the efficacy of different *Phragmites* management combinations

PAMF maintains engagement of existing partners

Multiple partners invest in maintaining PAMF

Phragmites infestations are reduced in actively managed units

High quality and quantity data are used and maintained within PAMF

PAMF recruits new participants and partners

The PAMF program evolves over time based on model learning and participant feedback

PAMF outputs and outcomes are documented for scientific and management audiences

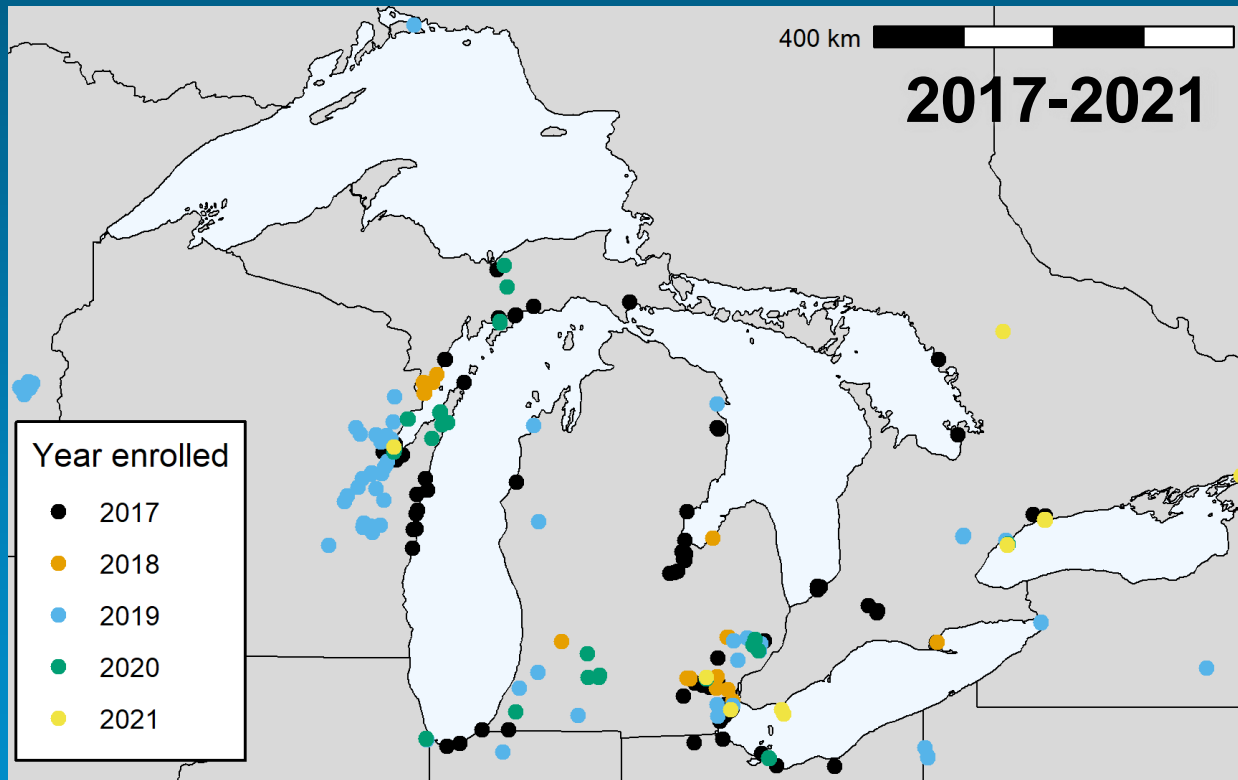
The PAMF model is documented, maintained, and improved

Management units are representative of the Great Lakes region

PAMF uses adaptive management techniques to evaluate its foundational structure

PAMF is integrated into relevant agency funding and management activities

Current Reach



Total

- 251 MUs
- 74 managers

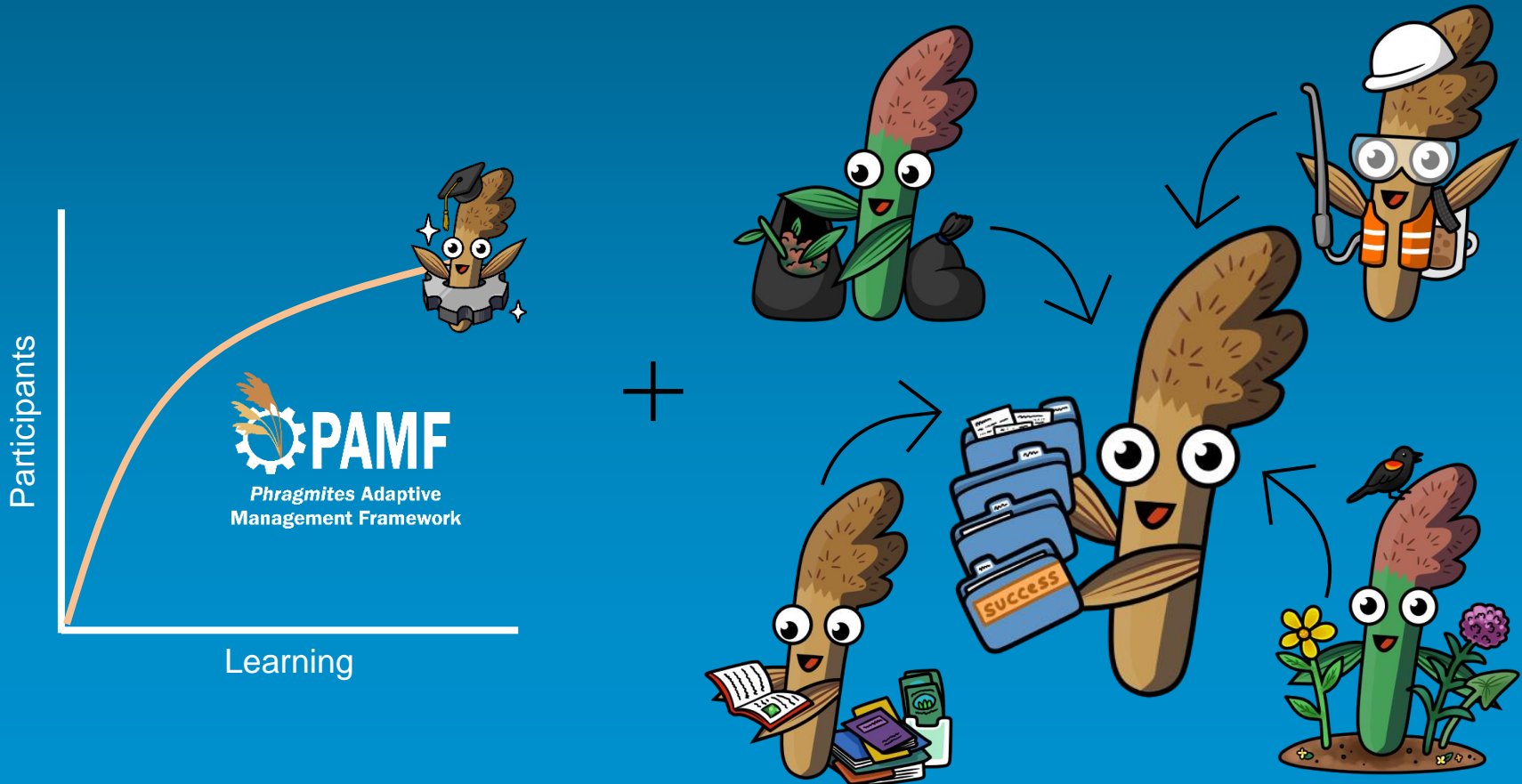
2020-2021 cycle

- 124 active MUs
- 37 active managers

Guidance

- 417 sets (~100 yearly)

More work on the horizon: Compiling years of learning



Get involved today!

www.greatlakesphragmites.net

Questions?



phragmites@glc.org



pamf@glc.org