

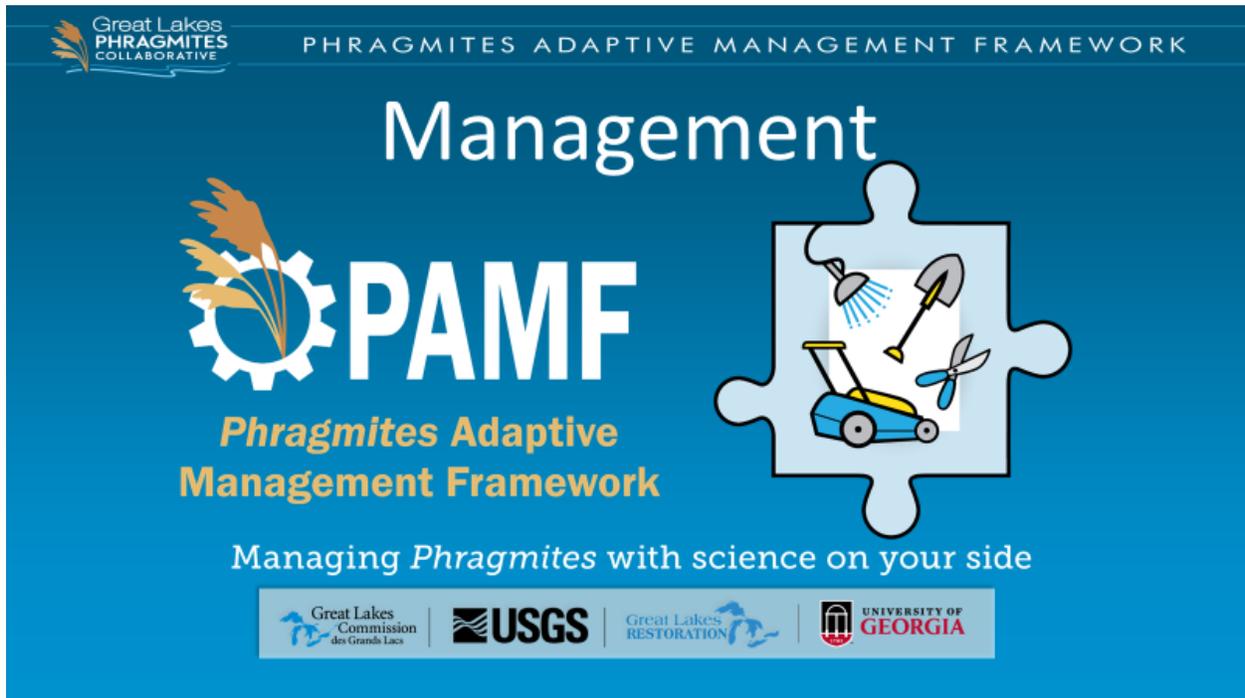


Phragmites Adaptive Management Framework

Managing *Phragmites* with science on your side

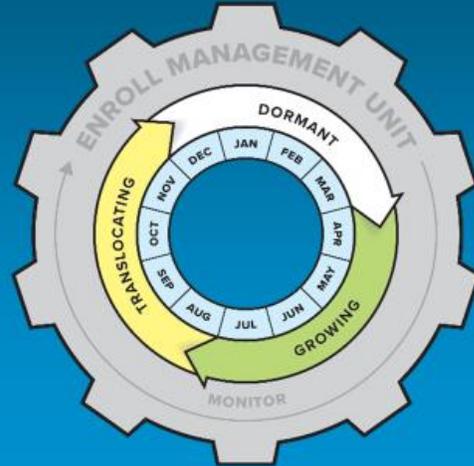
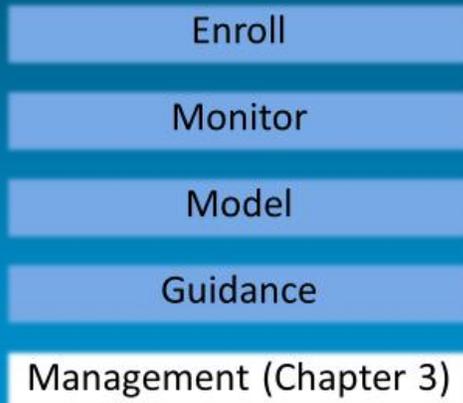
Management: Transcribed Video

June 2020



[The fifth step in the PAMF participant cycle is implementing management actions!]

PAMF Participation Cycle



[After enrolling and monitoring your management unit, the PAMF model is able to provide your first round of management guidance! Once the guidance is received, you are able to begin managing! *Phragmites* management happens throughout the year, with one management action occurring in each biological phase, as shown on the cycle image. Management is covered in chapter 3 of the [PAMF Participant Guide](#).]

Managing a Management Unit

10 PAMF Management Actions

Glyphosate
Imazapyr
Glyphosate +

Remove Biomass
Mechanical (and Leave Biomass)
Pre-Flood Clearing
Spading

Cut Underwater
Flood
Rest



For more details about these management actions, check out the PAMF Guide and the 'Resources' tab on the Web Hub.

[We have 10 management actions in PAMF's program which were exhaustively vetted with our technical working group. We recognize that these are not the only management actions out there, but they are the most common ones. They're also the management actions from which the PAMF predictive model is designed to learn, so any recommendations you receive will be comprised of a combination of these 10 actions. Check out the management actions details and descriptions document on the PAMF Web Hub for more information of these 10 management actions.]

Managing a Management Unit

Herbicide Management Actions

- Glyphosate
- Imazapyr
- Glyphosate +



[There are three management actions that involve herbicide applications, including Glyphosate, Imazapyr, and Glyphosate +, which PAMF defines as the application of an herbicide mix that contains both glyphosate and imazapyr as the active ingredients]

Managing a Management Unit

Herbicide Management Actions

- Ensure that herbicide is approved for aquatic use at your MU!
- For more resources, check out:
 - PAMF Guide
 - Web Hub Resources
 - Herbicide Concentration Quick Guide



[Herbicides must be approved for aquatic use when applying them over water and be sure that a licensed applicator is always used when applying herbicides. There are other considerations to take when applying herbicides, including the sensitivity of surrounding vegetation, land use, and restoration goals. Additional resources, such as an herbicide concentration quick guide, can be found on the PAMF Web Hub.]

Managing a Management Unit

Mechanical Control Management Actions

- Remove Biomass
- Mechanical and Leave Biomass
- Pre-Flood Clearing
- Spading



[There are four mechanical control management actions included in PAMF. Remove biomass involves removing *Phragmites* from the management unit manually. This can be achieved by cutting and removing *Phragmites* or even implementing a controlled burn. Mechanical and leaf biomass involves mowing cutting or crushing all above-ground biomass within a management unit and then leaving it on site rather than removing it. Pre-flood clearing is really the same as either of the two aforementioned management actions but can involve either removing or leaving biomass that's always followed with a flood event. Finally, spading is being demonstrated by the woman on the right and involves taking a sharp shovel or spade and inserting it at the base of the stem at a 45-degree angle cutting into and damaging the rhizome and then removing any cut *Phragmites* from the site. Spading works by cutting off the oxygen supply to the plant and then suffocating the rhizome.]

Managing a Management Unit

Hydrologic Management Actions

- Cut Underwater
- Flood



[Next we have two hydrologic management actions. Cut underwater is defined as cutting *Phragmites* stems beneath the water level as close to the substrate as possible, at least one to three feet below the water surface. This can be done by hand using equipment like raspberry cane cutters as shown in the upper right or with large amphibious equipment, as shown on the left with the trucks. A second hydrological management action is a flood. In order for a management action to be classified as a flood in PAMF, water must cover all live *Phragmites* within the management unit for at least a full month. If a natural flood occurs that meets this criteria for a management action rather than a controlled or intentional flood, this should still be submitted as a management report. If you've already applied a management action during the same phase the natural flood occurs, you can report both actions but use separate management reports.]

Managing a Management Unit

Rest Management Action



[Lastly, we have rest when no *Phragmites* management is done. It might seem like a silly action to recommend on its own, but rest can be an effective action and as part of the three action combinations. It's also useful if you're unable to manage your unit for any reason you can just report rest as your management action, which still provides us with valuable information because inaction also influences the way that infestation changes over time.]

Management Combinations

- 16 management combinations recommended as guidance
- One management action per biological phase



	Translocating	Dormant	Growing
1	Glyphosate	Pre-Flood Clearing	Flood
2	Glyphosate	Remove Biomass	Rest
3	Glyphosate	Flood	Flood
4	Glyphosate	Mechanical (and Leave Biomass)	Rest
5	Glyphosate	Rest	Glyphosate
6	Glyphosate	Rest	Rest
7	Glyphosate +	Remove Biomass	Rest
8	Glyphosate +	Flood	Flood
9	Glyphosate +	Mechanical (and Leave Biomass)	Rest
10	Glyphosate +	Pre-Flood Clearing	Flood
11	Glyphosate +	Rest	Rest
12	Imazapyr	Rest	Rest
13	Rest	Pre-Flood Clearing	Flood
14	Cut Underwater	Rest	Cut Underwater
15	Spading	Rest	Spading
16	Rest	Rest	Rest

[These 10 management actions have been grouped into 16 potential combinations that reflect what land managers are already doing. These combinations detail one management action for each biological phase. Annual management guidance specific to each management unit will be provided as one of these management combinations. Each management unit will receive the combination that the model determines is the most likely to achieve the greatest reduction of *Phragmites* at the lowest cost for that particular site. As you carry out these management actions, you'll need to submit a corresponding management report. Each management action that occurs during a phase should be reported. So, if you plan to implement more than one management action per phase, we recommend that you enroll more than one management unit so that each management unit only has one management action in one management report per phase. However, it's alright to perform a single type of action multiple times during a phase like spading multiple times during the growing phase. This would still only require one management report because only one type of action is being performed. However, if more than one management action occurs during a single phase such as perhaps you applied glyphosate and then experienced an unexpected natural flood you would need to fill out separate management reports for both of those actions.]

Managing a Management Unit

Management Report

Components:

- Management phase
- Management action employed
 - Implementation details
- Associated costs



PAMF Phragmites Adaptive Management Framework
Managing Phragmites with science on your side

Management Report

You should complete at least one report per management phase for each management unit (MU). Each report will consist of Section 1 (general information) in its entirety and one management action from Section 2 (management action information). You will enter this information in the Web Hub either at the end of each management phase (translocating, dormant, and growing) or at the end of the PAMF cycle by the August 1st deadline.

Section 1: General Information
 Notice: You will be asked to report costs for managing this MU during one phase. PAMF will use this information to recommend the most cost-effective annual management combination for your MU. PAMF will not share the specific costs you or your contractor incurred while managing this or any MU you have entered. If you are willing and able to provide cost-related information, please answer all questions in the fourth box in Section 1 as well as the cost-related questions on the Section 2 page that corresponds with the management action you implemented (i.e., all questions preceded by an asterisk). If you are not providing cost information, skip questions preceded by an asterisk.

Management Unit: _____ Date of Management Action Completion: _____

Phase (choose one): Translocating Dormant Growing

Did you treat your MU following the management guidance you received? - Yes - No - None Received
 If NO, please select the main reason why the management guidance was not followed and describe the circumstances. Please check only one box.

I intended to follow the management guidance, but:

- Site or environmental conditions prevented access to the MU.
 Examples: impassable roads, obstructed canals, etc.
- Site or environmental conditions prevented application of the management action.
 Examples: too dry, too windy, standing water, occurrence of species of concern, etc.
- Site or environmental conditions would have reduced efficacy of the management action.
 Examples: insufficient time to apply fire evenly, unable to flood for selected duration, etc.
- A critical passage was not available.
 Examples: lack of funds or personnel, broken equipment, unable to find contractor, etc.
- A logistical constraint related to timing could not be resolved.
 Examples: Too late to change plans, nonnegotiable contract, unable critical purchases, etc.
- A logistical constraint related to regulations could not be resolved.
 Examples: Unable to obtain permits, access, exemptions from institutional policy, etc.

I did not intend to follow the management guidance because:

- I did not have sufficient experience or comfort with applying the recommended management action.
- I did not agree that the recommendation provided was best for my circumstances.

Other: I did not have previous management guidance for this MU.
 There was another reason that is not listed above.

Describe the reason not listed above:

[You will need to submit at least one management report for each phase – translocating, dormant, and growing – even if you let your management unit rest. The management report asks questions like what management action you implemented, what technique you used when implementing it, and the costs you incurred. The questions are meant to give us enough information to evaluate each management action without it becoming a huge time burden to you. The management reports can be found on the Web Hub or in the Appendix of the PAMF Participant Guide. This image here shows one page of the blank report that you can take in the field to help you gather the necessary information for when you submit the report on the Web Hub. We recommend that you submit a management report at the end of each management phase while things are still fresh in your mind, however, you can also submit all three reports at the end of the annual cycle before August 1st.]

Managing a Management Unit

In Summary

- 10 management actions → 16 management combinations
- Report management actions to PAMF
- One management report per phase
- Resources available on PAMF Web Hub
- PAMF staff is available for questions!

pamf@glc.org



[Reporting your management actions is meant to be a simple and quick process that should take less than 15 minutes to report. Each management action has multiple implementation techniques possible and the decision of how to implement is left up to each participant to decide. The 10 management actions are grouped into 16 management combinations that PAMF's model is designed to learn from. Participants are responsible for submitting one management report for each management action they take which is ideally just one per biological phase. If two different actions should occur during one phase, for example a glyphosate treatment followed by a natural flood event, each action requires a separate management report. However, if one action applied multiple times during a phase or is applied multiple times during a phase so for example, it took multiple days to save an entire management unit, only one report is required for that phase. There are resources available on the PAMF Web Hub to help participants make implementation decisions and as always, the PAMF staff is available to answer any and all management questions. You can reach us at pamf@glc.org]

