

4-28-2021

2021 Pesticide Safety April 28: Managing New and Difficult Weeds

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Recommended Citation

Sandler, Hilary A., "2021 Pesticide Safety April 28: Managing New and Difficult Weeds" (2021). *Cranberry Station Extension meetings*. 351.

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New and Difficult Weeds



Hilary Sandler

Pesticide Safety Meeting
April 28, 2021

UMass
Amherst

Cranberry
Station

Phragmites

- *Phragmites australis*
- aka Common reed
- Broadly distributed wetlands plant
- Poaceae: true grass
- Native & Introduced in lower 48 states, HI, most Canadian provinces



USDA PLANTS database image gallery

Description

- Perennial grass
- Considered invasive or problematic in most states; 'prohibited' plant in MA
 - Import, trade, sale
- Will displace desired vegetation if not properly managed



USDA PLANTS database image gallery

Phragmites

- Clonal, invasive wetlands grass.
- Can grow more than 15' tall; flowers mid-summer.
- Can reproduce by seed, but spreads vegetatively by rhizomes, which can be 6–12' long.
 - Can produce 200 stems/m².



Great Lake Phragmites Collections

Adaptation

- Often moves into disturbed sites
- Can survive in many habitats including tidal and nontidal wetlands
- pH range 3.7-8.7
- Tolerant to prolonged flooding
 - Must be multiple years to be effective

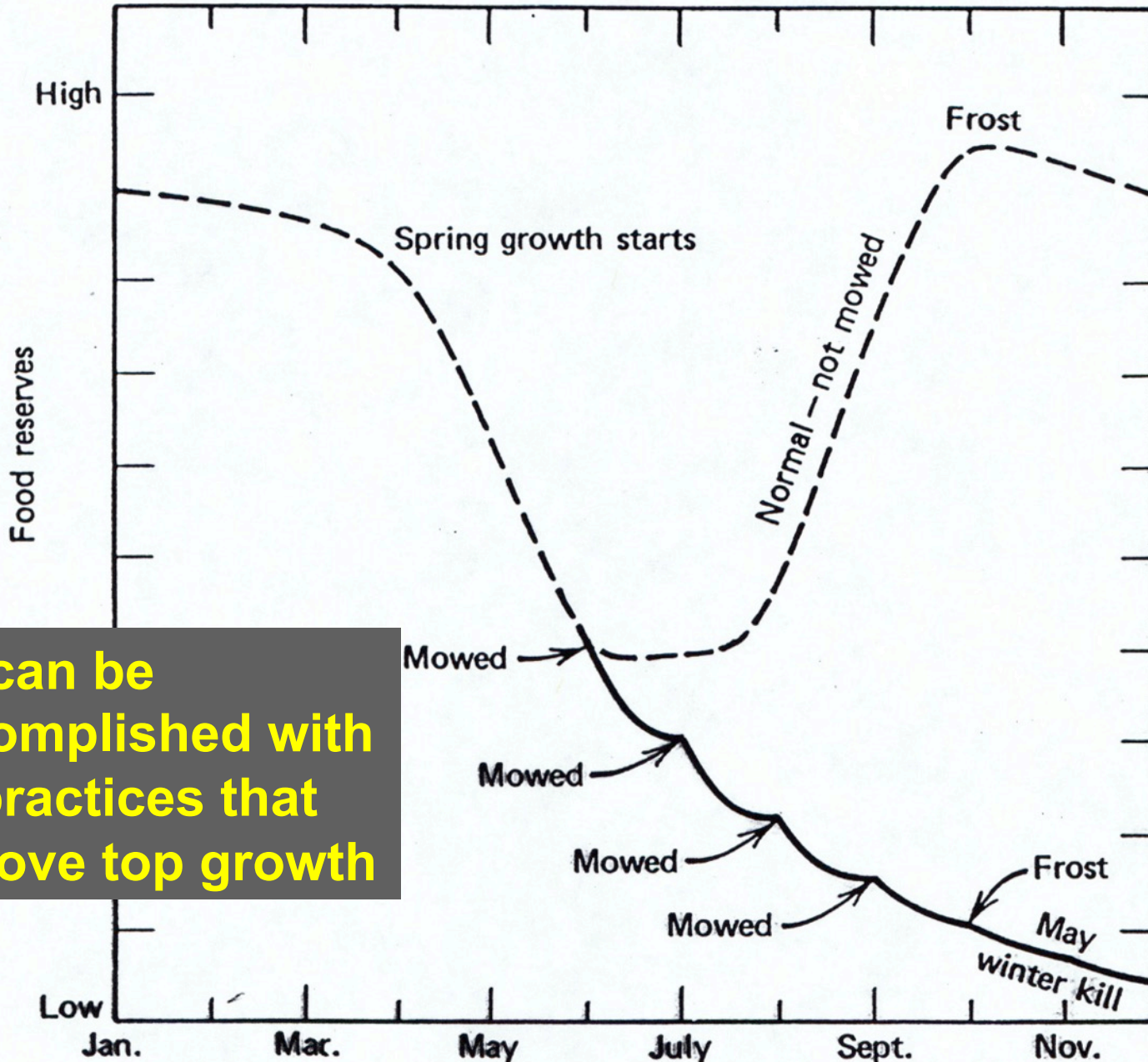
Management

- Roundup mid-summer
- Mow 4-8 weeks later
- Repeat yearly as needed
- Young plants easier
- Control populations off-site, too



USDA Forest Service

Carbohydrate Starvation by Mowing

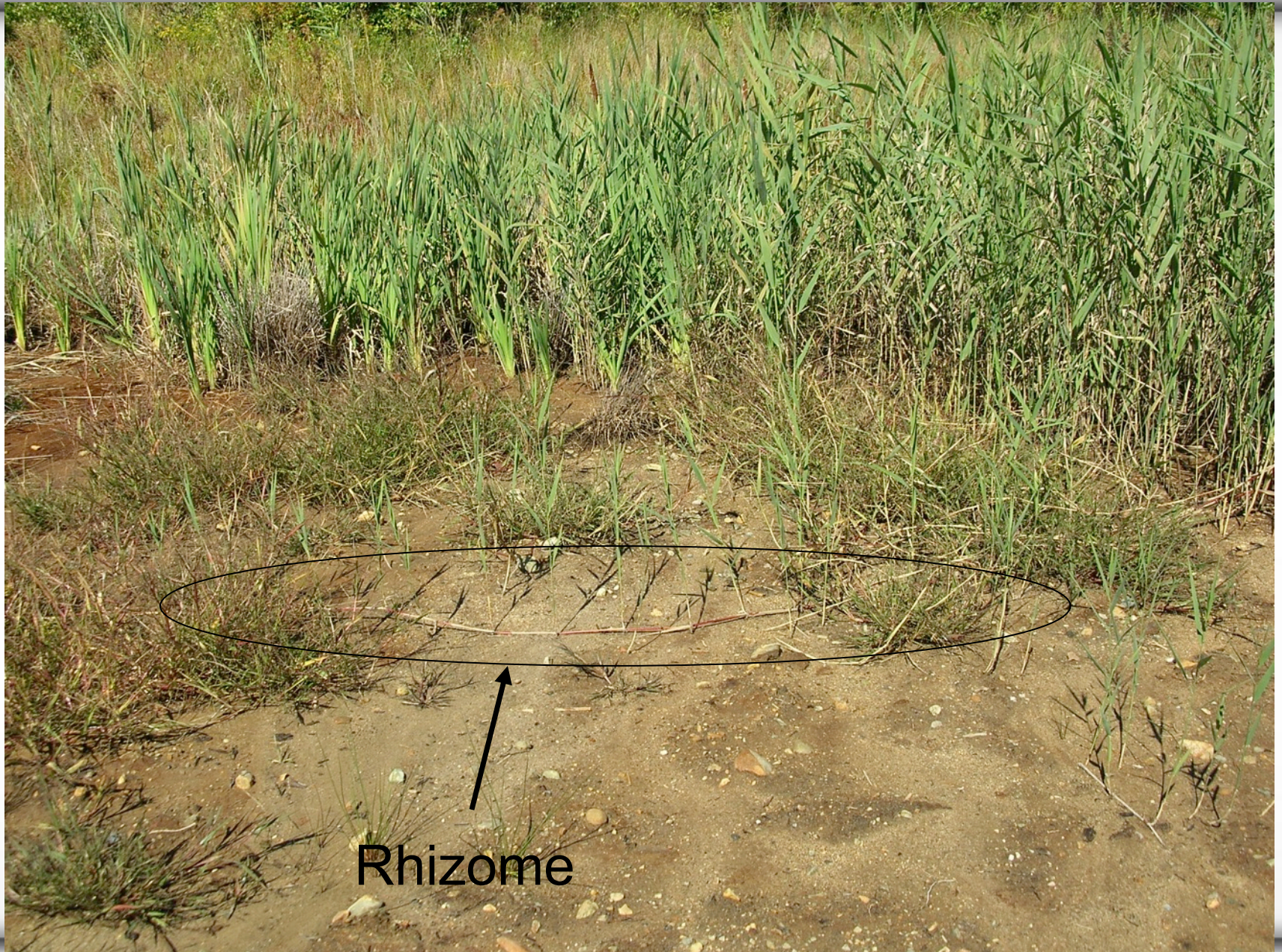


CS can be accomplished with all practices that remove top growth

Management

- Deep 'root burns'
 - Pretty tough to do; requires litter and dry rooting area
- Burning (top growth) followed by flooding can decrease growth but does not cause mortality
- Use fire with physical, mechanical and chemical control





Rhizome

POLL QUESTION

Japanese Knotweed

Aka: Japanese bamboo
Mexican knotweed
Mexican bamboo

Scientific name:

- *Polygonum cuspidatum*
- *Reynoutria japonica*
- *Fallopia japonica*



- **Native to Japan & other parts of Asia,
not Mexico**
- **NOT a grass**
- **BROADLEAF in the knotweed or
smartweed family (*Polygonaceae*)**
 - **Ladysthumb**
 - **Arrowleaf tearthumb**



JAPANESE KNOTWEED



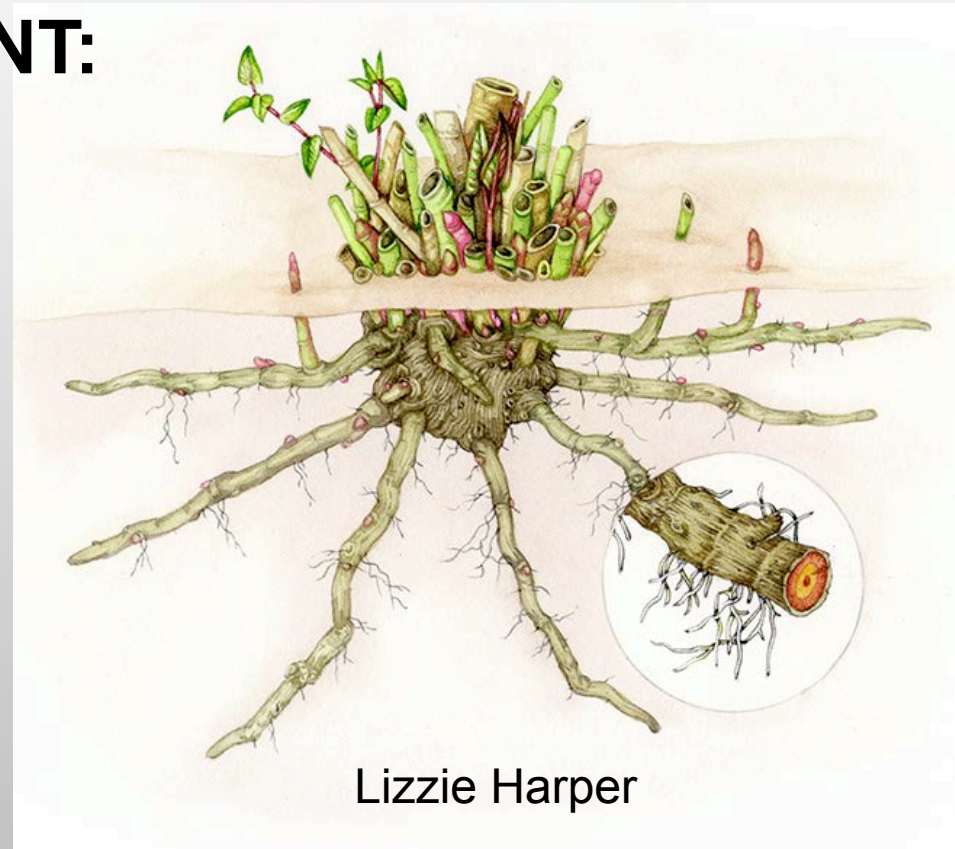
Non-native invasive;
Prohibited plant in MA



Japanese knotweed
Polygonum cuspidatum

Means of reproduction

- **PRIMARY:** asexually, vegetatively propagated by rhizomes
- **MUCH LESS IMPORTANT:** sexually by seed
- **EVEN LESS:** shredder leaf and stem material



Habitat

- moisture or wet soils
- often associated with wet areas
 - wetlands
 - stream & river corridors
 - forest edges
 - roadsides
 - abandon agricultural land

Tough to Control

- Can re-grow from discarded vegetative pieces
- Single young plants can be pulled when soil is moist and roots are small

Japanese Knotweed Management

Strategy or strategies you should implement as largely determined by the size and location of the Japanese knotweed stand!!!!



**Japanese knotweed
management without
herbicides is very difficult.**

Non-chemical Japanese Knotweed Control

- frequent cultivation or digging (equipment often required)
- repeated cutting/mowing - slow spread & reduced vigor

Carbohydrate Starvation:

- prevent photosynthesis
- deplete stored energy for rhizomes



Japanese knotweed plant material disposal

- Roots and runners must be removed to prevent re-sprouting
- Bag & remove off-site
- On-site:
 - pile and dry on-site (tarp below)
 - compost on-site
 - deep bury

Non-chemical Japanese Knotweed Control

- new emerging strategies - MeshTech
- Japanese Knotweed Solutions Ltd,
Itadori House, Melton Street,
Radcliffe, Manchester, UK



JAPANESE KNOTWEED CONTROL

Glyphosate - flowering (late summer)

- cut to ground in late May to early June**
 - 1. remove previous years dry stems**
 - 2. remove some plant energy**
 - 3. shorter height as treatment time**

- OFF-BOG ONLY: fresh-cut stems, foliage

Imazapyr: Arsenal

Aminopyralid: Milestone

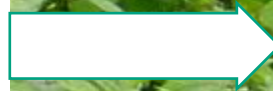
Triclopyr



**not mowed, tall
and flowering**



**mowed: shorter and
easier to treat, stems from
previous years absent**



JAPANESE KNOTWEED CONTROL

All strategies will likely require multiple years of implementation for long term effect control.

DILIGENCE IS CRITICALLY IMPORTANT!!!!!!



Questions??

Second Poll

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