

Stop Wasting Your Time on Invasives –



*Plan Your Way to
Success!*

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I have a confession.....

I really, really hate planning.

They're
everywhere!!



#1 Misconception

They are not everywhere.

Really.

It is crucial to know how
much there is; planning
will help you select
winnable battles.

Diversity is more than a species count.

Invasive plants can have many negative impacts to natural areas.

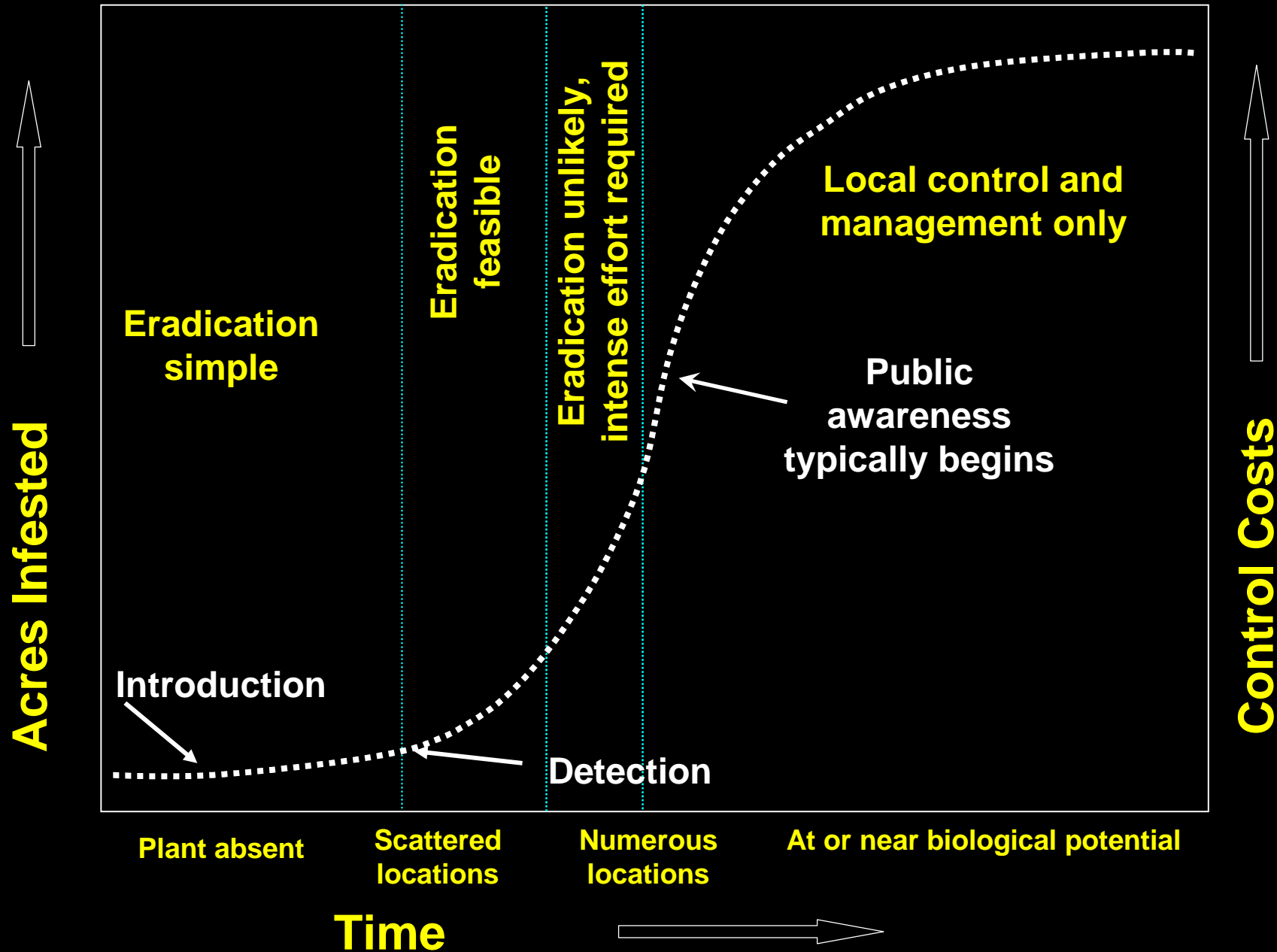
Planning helps decide which invasive plants are causing the worst impacts and so should be higher priority.

It's all ok –
it's just more
diversity!



#2 Misconception

Weed Increase Over Time and Control Potential



Considerations in controlling invasive species

- Prevention is the ALWAYS the best strategy!
- Early detection is the second best strategy

By the time you are in the control and management strategy, the cost is huge and the failure rate is high.

When I was young, I observed that nine out of every ten things I did were failures, so I did ten times the work.

George Bernard Shaw

Why do so many invasive control efforts fail?

- unrealistic goals
- lack of follow-through
- no size-up before starting
- ineffective method used

How do we succeed?

You can do it!

Some successful invasive plant management projects:

- Lanphere Dunes in Humboldt Bay NWR
- Sandy River knotweed project
- Weed it Now! Berkshire-Taconic landscape project

Lanphere Dunes, Humboldt Bay NWR



Before - 10 acres of European dune grass infestation by 1990

Plants were manually cleared over three years



After – native plant cover increased dramatically



Sandy River project, northern Oregon

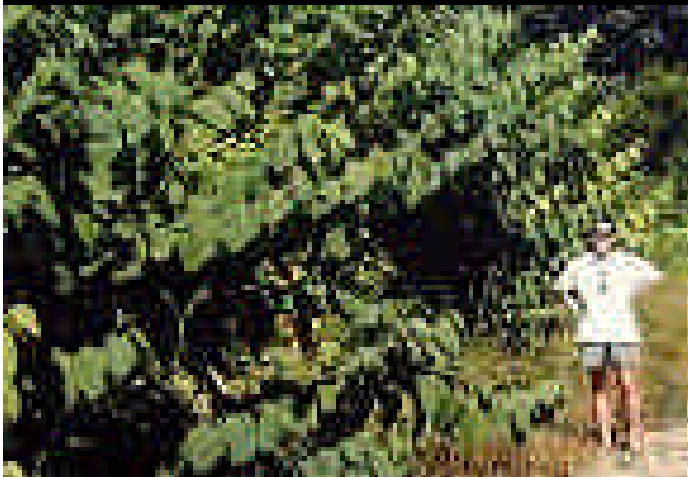
TNC, Oregon Watershed Enhancement Board, the Bureau of Land Management and the United States Fish and Wildlife Service



Sandy River project, northern Oregon

What has been accomplished?

- Surveyed 10 miles of river (600 acres) representing 200 different landowners
- 150 gross acres of knotweed found made up of 2, 840 different patches
- All acres have been treated at least once; most treated 3 times
- Stems have been reduced 80%; control expected in 2005



Weed It Now!

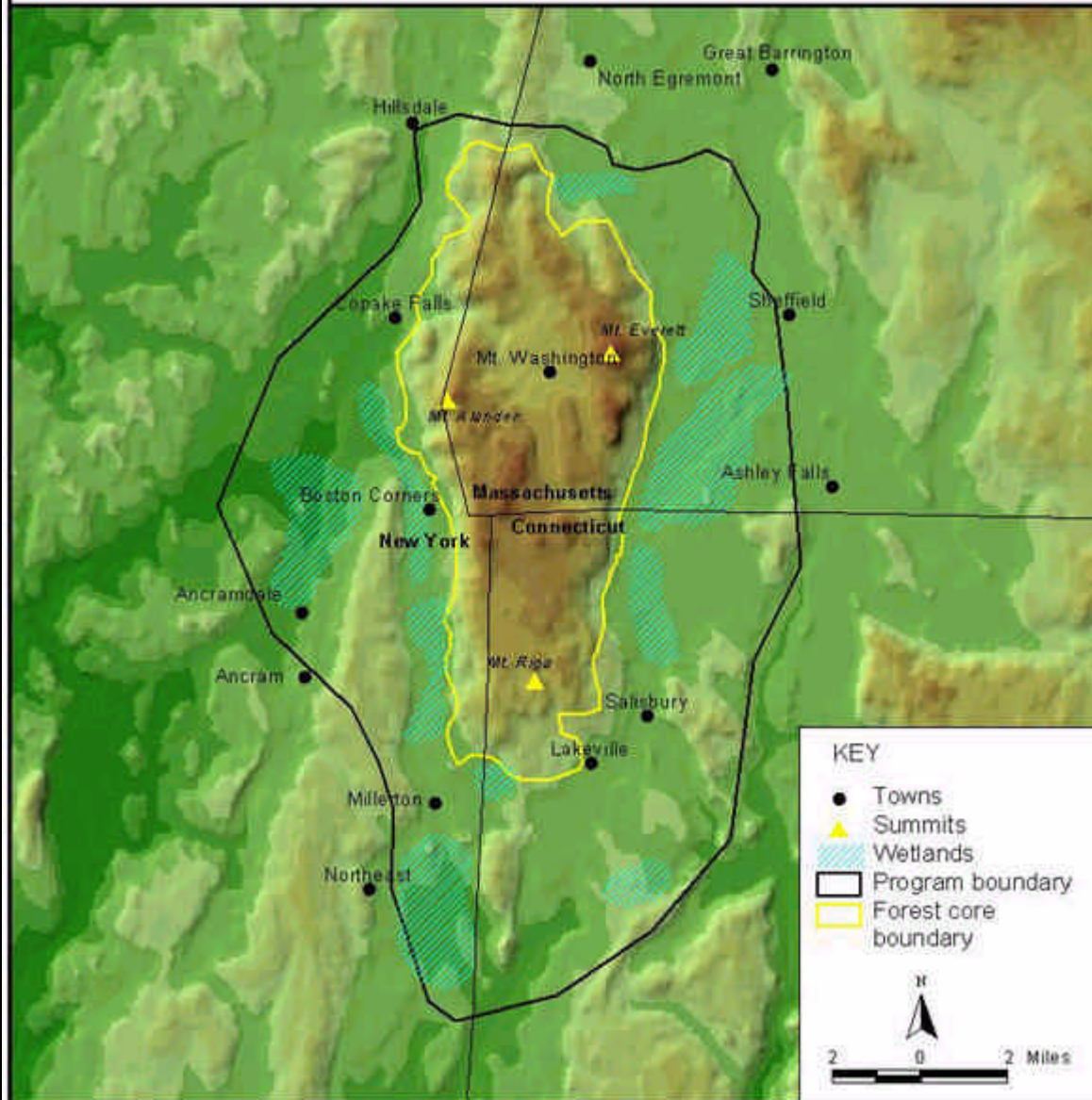
Berkshire-Taconic Landscape Project



Japanese barberry

WELCOME TO THE LANDSCAPE

BERKSHIRE TACONIC LANDSCAPE
Connecticut, Massachusetts, New York



DATA SOURCES: MARCO IS, CT-MAG IC, NY-GIS, USGS, TNC, Copyright ©2001, The Nature Conservancy

From a 120,000 acre landscape they chose a 9,000 core area to inventory and control barberry.

Weed It Now!

What has been accomplished?

-goal is to reduce Japanese barberry to 5% of the area.

-started treating in 2002, now treating approximately 2,000 acres per year in a three state area

Why are these projects successful?

- Working with partners across boundaries
(Cooperative Weed Management Areas)
- Consistent strategy over multiple years
- PLANNING



SAVING THE LAST GREAT PLACES ON EARTH

Plan before you act!

TNC's Weed Management Template

The template, tables, and more can
be found at:

tncweeds.ucdavis.edu/products

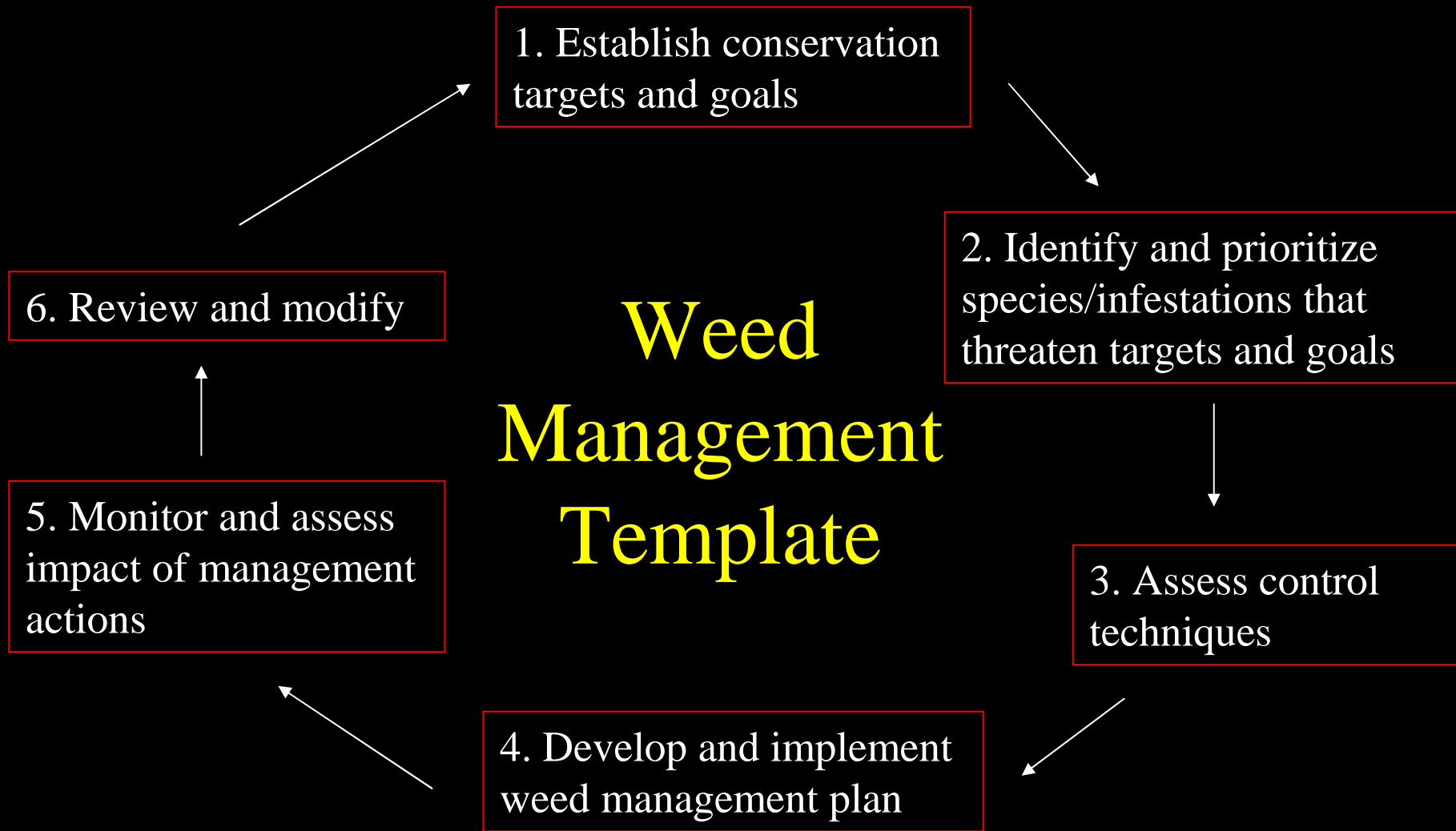


Figure 1. Flow chart for Adaptive Management of Weeds describing management actions and decisions confronting natural area managers (from Randall (1997), based on a diagram by Oren Pollak, personal communication).

1. Establish conservation targets and goals

- Remember – you are NOT managing invasive plants
- You ARE managing land for particular goals and objectives:
 - Rare species
 - High quality natural communities
 - Productive forest land

2. Identify and prioritize species/infestations that threaten targets and goals

- The most over-looked step, and the hardest step, in the process
- In short - ‘stop pulling the dandelions’



Prioritization

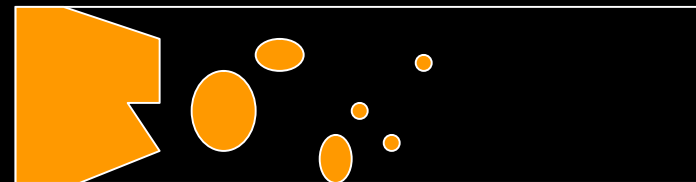
- Site-based Prioritization – Where do I go first?
- Species-based Prioritization – Which do I go after first?

A combination of both are necessary for success.

Site-Based Invasive Prioritization:

WHERE do I go first?

1. Identify and map invaded and un-invaded areas (NO MAP – NO CONTROL!!)
2. Focus on large blocks of un-invaded areas – keep them un-invaded
3. Control small outlier populations first
4. ‘Unfragment’ boundaries of invaded areas
5. Reverse the invasion – expand the un-invaded area outward.



Site-Based Invasive Prioritization:

WHERE do I go first?

6. For long distance dispersers:
 - in aquatic settings, control upstream to downstream
 - for bird-dispersed species, control large seed source populations first
7. All roads, trails, and watercourses are invasive corridors; survey them regularly to detect new invaders quickly
8. Keep your focus on targets – restoration may be necessary.

Setting Species Priorities:

WHAT do I go after first?

- I. Current extent of the species on or near the site;
- II. Current and potential impacts of the species;
- III. Value of the habitats/areas that the species infests or may infest; and
- IV. Difficulty of control.

I. Current extent of the species.

1. Species not yet on site but present nearby.
2. Species present as new populations or outliers of larger infestations, esp. if expanding rapidly.
3. Species present in large infestations that continue to expand
4. Species present in large infestations that are not expanding.



Where do I get this information?

Inventory!

- Spend the first dollars you get on inventory.
- ‘The NAWMA standard’

NAWMA standard-

(North American Weed Management Association)

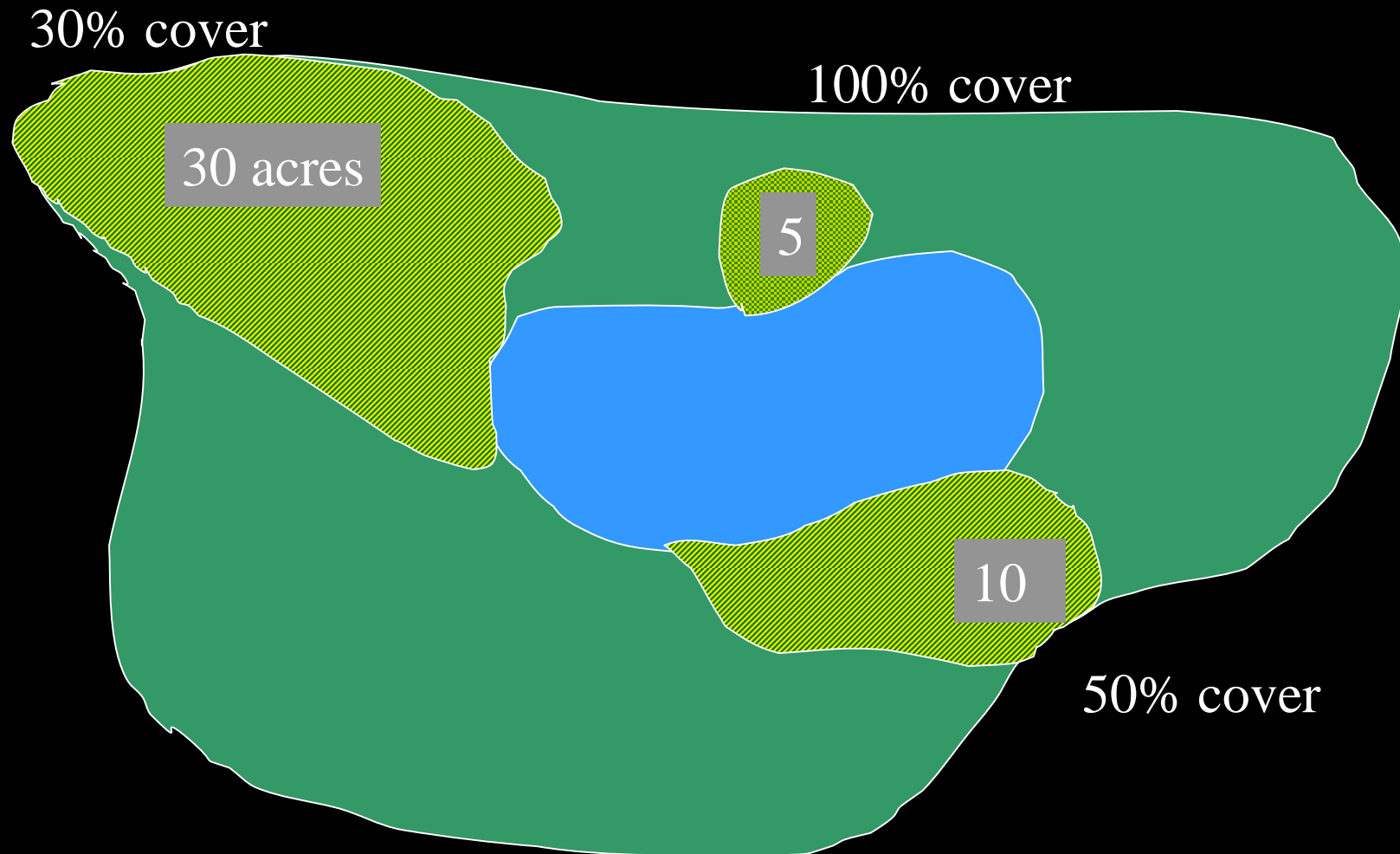
Just three things to address:

- What is it?
- Where is it?
- How much is there?
 - gross vs. infested acres

100-acre wetland site

45 acres gross area

$9 + 5 + 5 = 19$ acres infested area



Mapping Standards:

- North American Weed Managers Association

<http://www.nawma.org/>

Plant Information

GENUS _____ **SPECIES** _____

INTRASPECIFIC NAME(S) _____

Authority _____ **PLANT CODE** _____

Common Name _____

Infested Area _____ **UNIT OF MEASURE** _____

Gross Area _____ **UNIT OF MEASURE** _____

Canopy Cover _____ %

Setting Priorities:

- I. Current extent of the species on or near the site;
- II. Current and potential impacts of the species;
- III. Value of the habitats/areas that the species infests or may infest; and
- IV. Difficulty of control.

Cooperative Weed Management Areas –

The term CWMA, or Cooperative Weed Management Area, refers to a local organization that integrates invasive plant management resources across jurisdictional boundaries in order to benefit entire communities.



CWMA Cookbook: A Recipe for Success

A Step-by step Guide on How to Develop a
Cooperative Weed Management Area
in the Eastern United States



II. Current and potential impacts of the species.

1. Species that alter ecosystem processes such as fire frequency, sedimentation, nutrient cycling, or other ecosystem processes.
2. Species that outcompete natives and dominate otherwise undisturbed communities.
3. Species that do not outcompete dominant natives, BUT-
 - a) Prevent or depress recruitment or regeneration of native species, OR
 - b) Reduce or eliminate resources used by animals, OR
 - c) Promote populations of invasive non-native animals by providing them with resources otherwise unavailable in the area.
4. Species that overtake and exclude natives following natural disturbances such as fires, floods, or hurricanes.

III. Value of the habitats/areas the species infests or could infest

1. Infestations that occur in the most highly valued habitats or areas of the site – especially areas that contain rare or highly valued species or communities and areas that provide vital resources.
2. Infestations that occur in less highly valued portions of the site. Areas already badly infested by other weeds may be given lower priority unless the species in question will make the situation significantly worse.

IV. Difficulty of control and establishing replacement species.

1. Species likely to be controlled or eliminated with available technology and resources and which desirable native species will replace with little further input.
2. Species likely to be controlled but will not be replaced by desirable natives without an active restoration program requiring substantial resources.
3. Species difficult to control with available technology and resources and/or whose control will likely result in substantial damage to other, desirable species.
4. Species unlikely to be controlled with available technology and resources.

1. Establish conservation targets and goals

2. Identify and prioritize species/infestations that threaten targets and goals

3. Assess control techniques

4. Develop and implement weed management plan

5. Monitor and assess impact of management actions

6. Review and modify

Weed Management Template

Prairie Acres Preserve –

100 acres of mixed wet, mesic and dry prairie



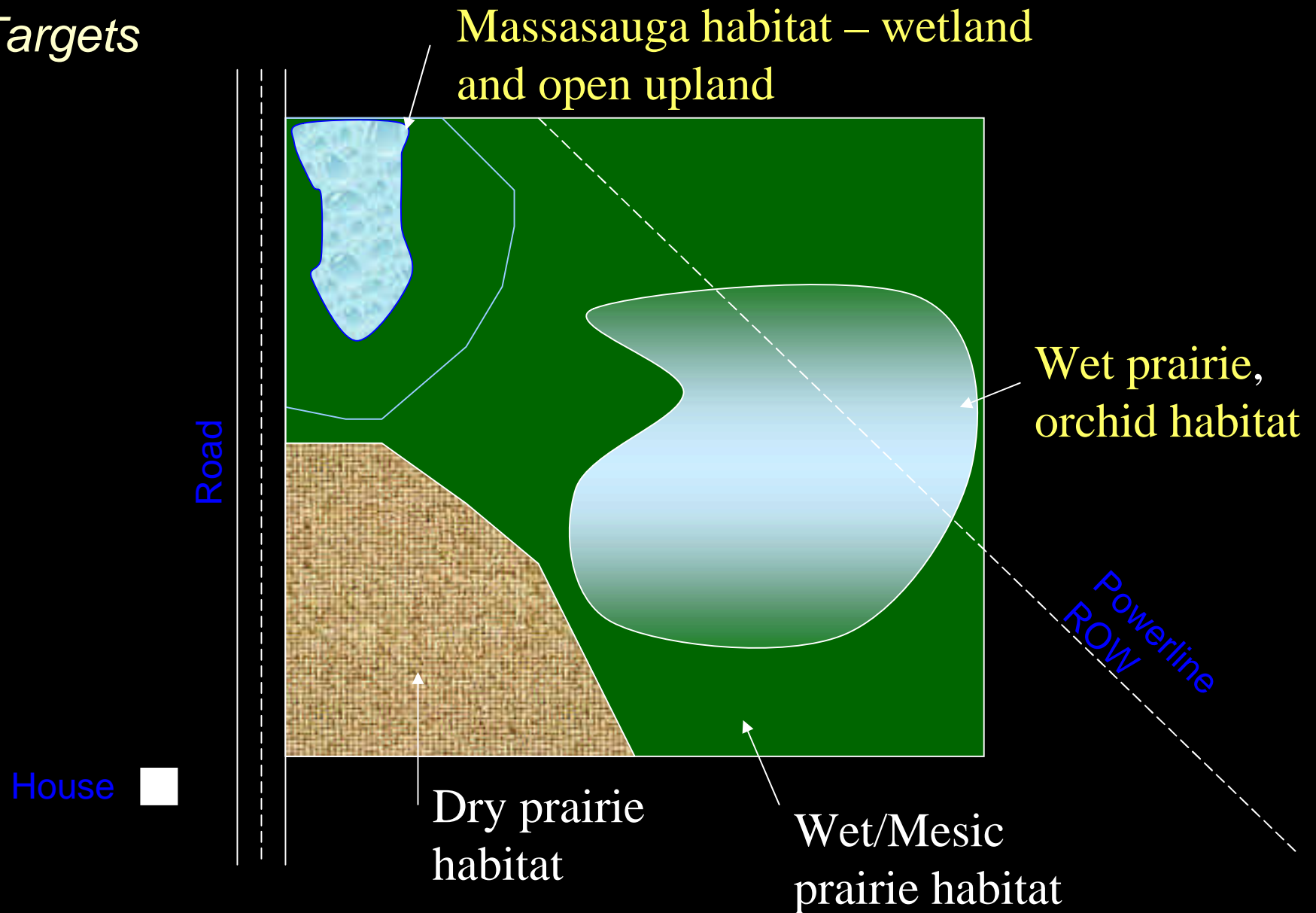
Congratulations! You are the new steward for this site.

Prairie Acres Preserve targets:

- Wet prairie
- Prairie White Fringed Orchid
- Massasauga Rattlesnake

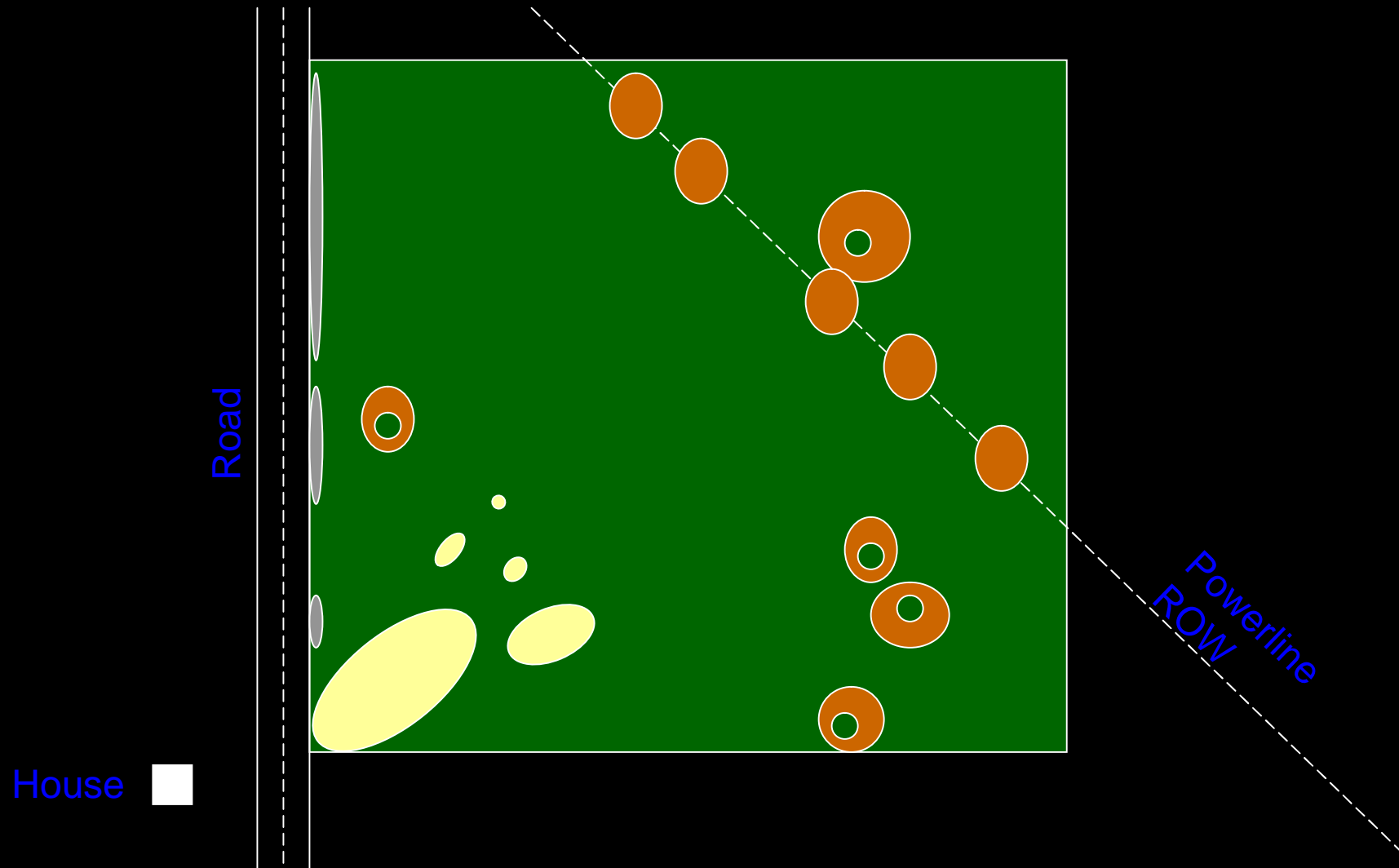
Prairie Acres Preserve –

Targets



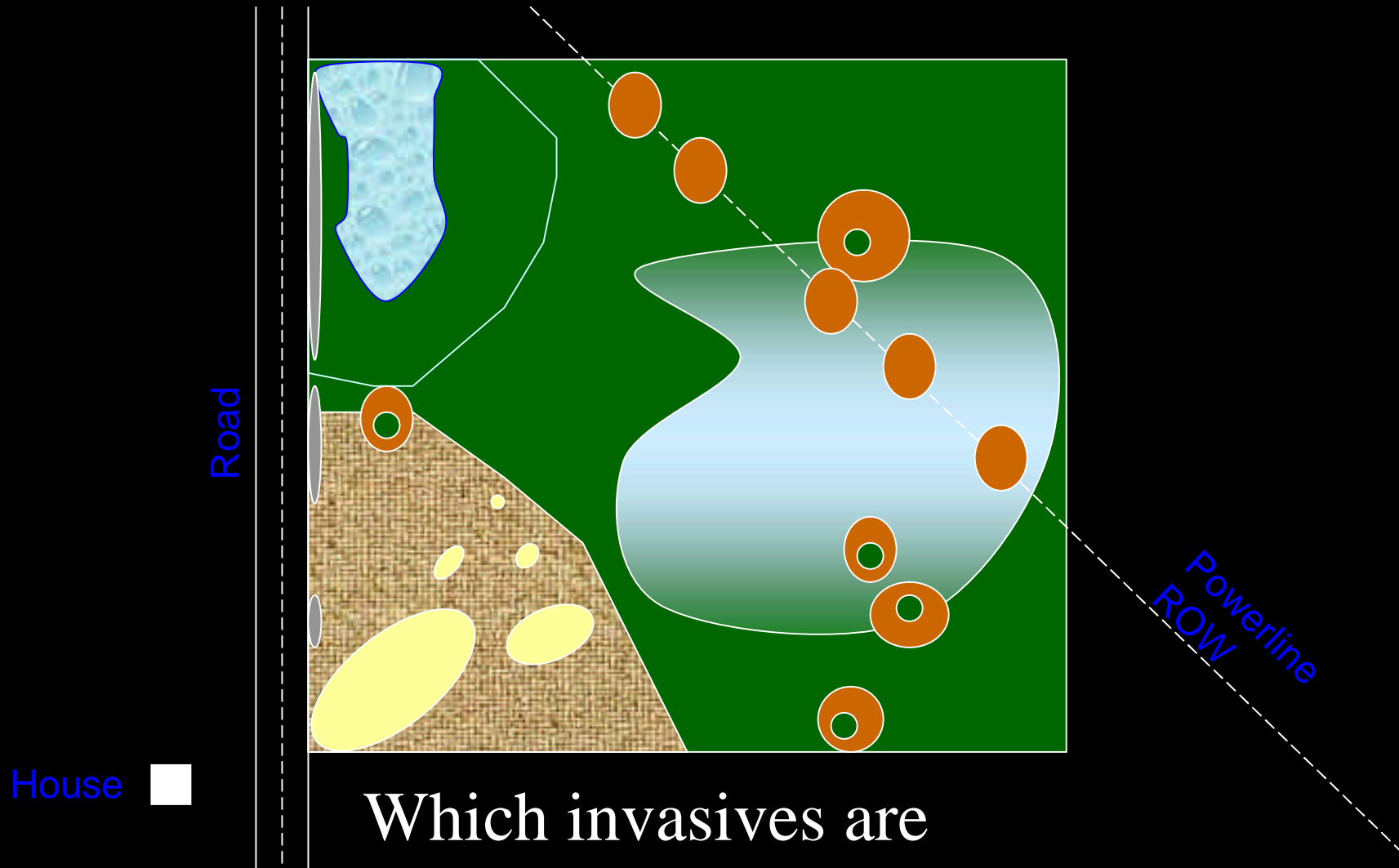
Prairie Acres Preserve – *Inventory of invasives, summer 2003*

- Tree of heaven (10 acres)
- Reed canary grass (2 ac.)
- Asian bush honeysuckle (18 ac.)



Prairie Acres Preserve – *Targets and Invasives*

- Tree of heaven (10 acres)
- Reed canary grass (2 ac.)
- Asian bush honeysuckle (18 ac.)



Which invasives are threats to your targets?

Table 1. *Assign priority 1 to 4 in each cell.*

Common Name	Current Extent	Current/ Potential Impacts	Value of Habitat Infested	Difficulty of Control
Tree of Heaven				
Reed Canary Grass				
Asian Bush Honeysuckle				

I. Current extent of the species.

1. Species not yet on site but present nearby.
2. Species present as new populations or outliers of larger infestations, esp. if expanding rapidly.
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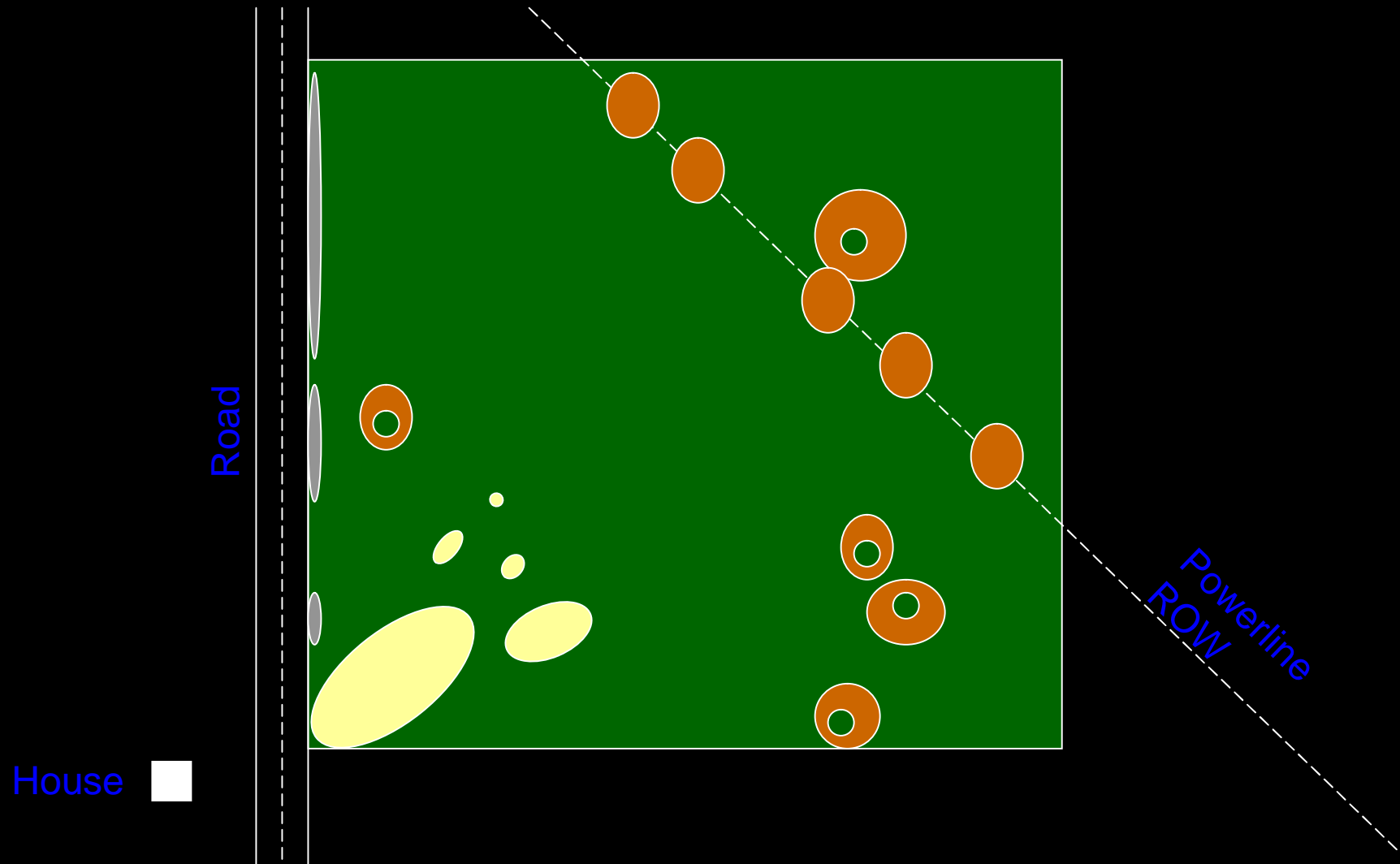


Table 1. Assign priority 1 to 4 in each cell.

Common Name	Current Extent	Current/ Potential Impacts	Value of Habitat Infested	Difficulty of Control
Tree of Heaven	3			
Reed Canary Grass	2			
Asian Bush Honeysuckle	3			

Setting Priorities:

- I. Current extent of the species on or near the site;
- II. Current and potential impacts of the species;
- III. Value of the habitats/areas that the species infests or may infest; and
- IV. Difficulty of control.

II. Current and potential impacts of the species.

1. Species that alter ecosystem processes such as fire frequency, sedimentation, nutrient cycling, or other ecosystem processes.
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 3. Promote populations of invasive non-native animals by providing them with resources otherwise unavailable in the area.
4. Species that overtake and exclude natives following natural disturbances such as fires, floods, or hurricanes.

Table 1. Assign priority 1 to 4 in each cell.

Common Name	Current Extent	Current/ Potential Impacts	Value of Habitat Infested	Difficulty of Control
Tree of Heaven	3	2		
Reed Canary Grass	2	4		
Asian Bush Honeysuckle	3	2		

III. Value of the habitats/areas the species infests or could infest

1. Infestations that occur in the most highly valued habitats or areas of the site – especially areas that contain rare or highly valued species or communities and areas that provide vital resources.
2. Infestations that occur in less highly valued portions of the site. Areas already badly infested by other weeds may be given lower priority unless the species in question will make the situation significantly worse.

Prairie Acres Preserve – *Targets and Invasives*

- Tree of heaven (10 acres)
- Reed canary grass (2 ac.)
- Asian bush honeysuckle (18 ac.)

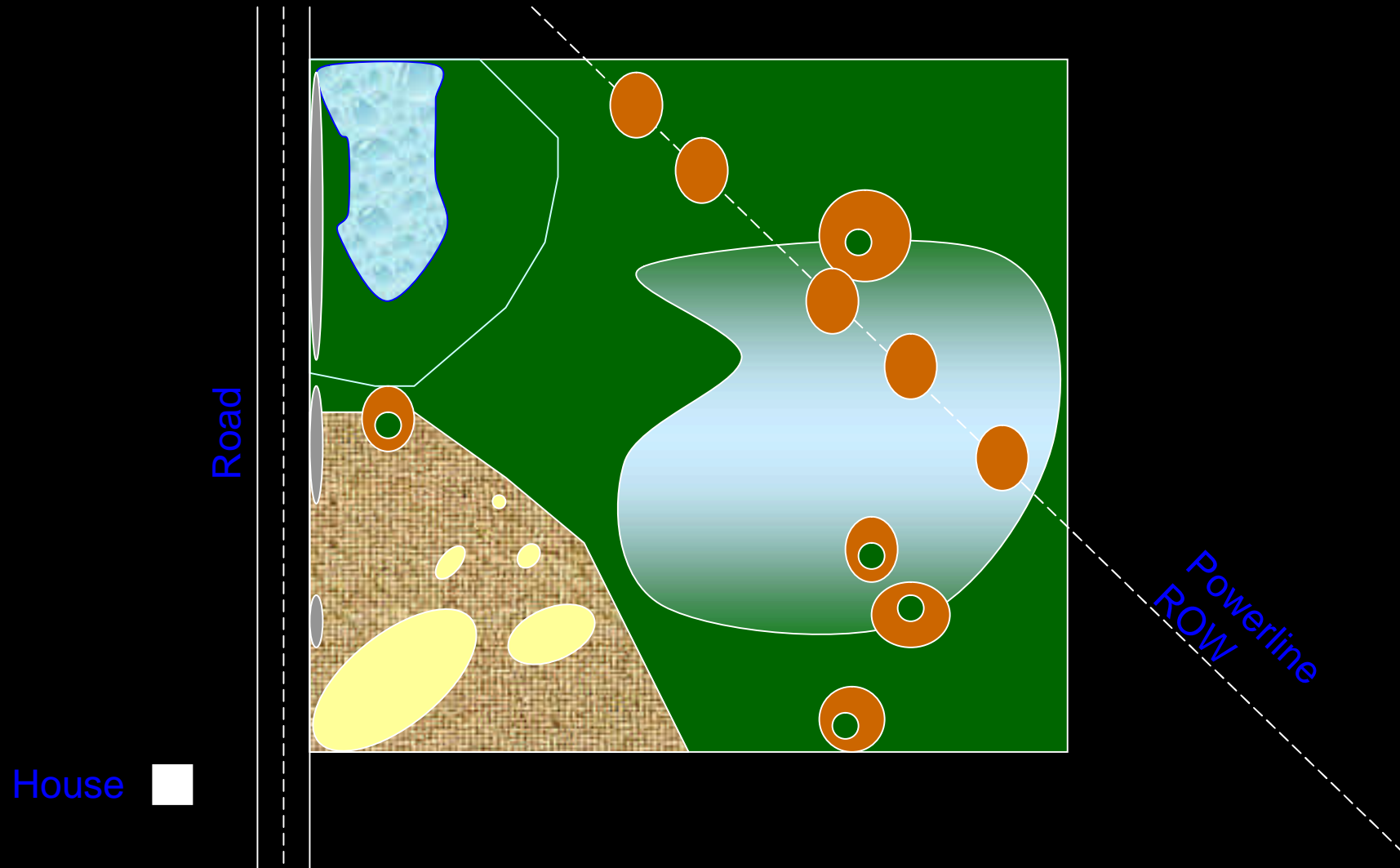


Table 1. Assign priority 1 to 4 in each cell.

Common Name	Current Extent	Current/ Potential Impacts	Value of Habitat Infested	Difficulty of Control
Tree of Heaven	3	2	2	
Reed Canary Grass	2	4	1	
Asian Bush Honeysuckle	3	2	1	

IV. Difficulty of control and establishing replacement species.

1. Species likely to be controlled or eliminated with available technology and resources and which desirable native species will replace with little further input.
2. Species likely to be controlled but will not be replaced by desirable natives without an active restoration program requiring substantial resources.
3. Species difficult to control with available technology and resources and/or whose control will likely result in substantial damage to other, desirable species.
4. Species unlikely to be controlled with available technology and resources.

Table 1. Assign priority 1 to 4 in each cell.

Common Name	Current Extent	Current/ Potential Impacts	Value of Habitat Infested	Difficulty of Control
Tree of Heaven	3	2	2	3
Reed Canary Grass	2	4	1	2
Asian Bush Honeysuckle	3	2	1	1

Table 1. Assign priority 1 to 4 in each cell.

Common Name	Current Extent	Current/Potential Impacts	Value of Habitat Infested	Difficulty of Control	Sum
Tree of Heaven	3	2	2	3	10
Reed Canary Grass	2	4	1	2	9
Asian Bush Honeysuckle	3	2	1	1	7

But what if....

#1



II. Current and potential impacts of the species.

1. Species that alter ecosystem processes such as fire frequency, sedimentation, nutrient cycling, or other ecosystem processes.
2. Species that outcompete natives and dominate otherwise undisturbed communities.
3. Species that do not outcompete dominant natives, BUT-
 1. Prevent or depress recruitment or regeneration of native species, OR
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What if Reed Canary Grass is really a 2, not a 4?

Table 1. Assign priority 1 to 4 in each cell.

Common Name	Current Extent	Current/ Potential Impacts	Value of Habitat Infested	Difficulty of Control	Sum
Tree of Heaven	3	2	2	3	10
Reed Canary Grass	2	4 2	1	2	9 7
Asian Bush Honeysuckle	3	2	1	1	7

Tied for #1

What if you have a tie?

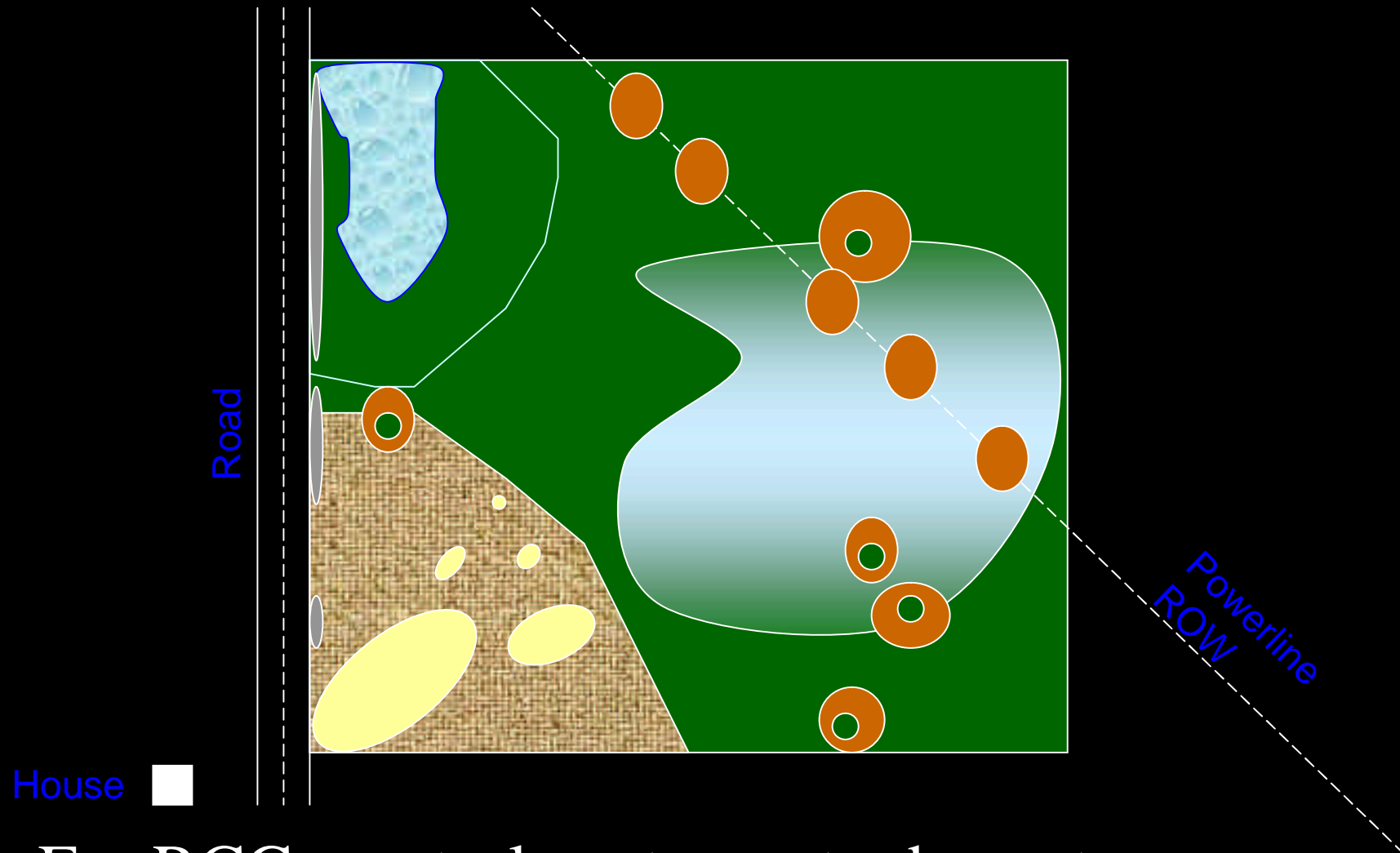
Table 1. Assign priority 1 to 4 in each cell.

Common Name	Current Extent	Current/Potential Impacts	Value of Habitat Infested	Difficulty of Control	Sum
Tree of Heaven	X 6	2	2	3	X 13
Reed Canary Grass	X 4	2	1	2	X 9
Asian Bush Honeysuckle	X 6	2	1	1	X 10

Single most important factor is current extent – double it and add again.

Prairie Acres Preserve – *Site-based prioritization*

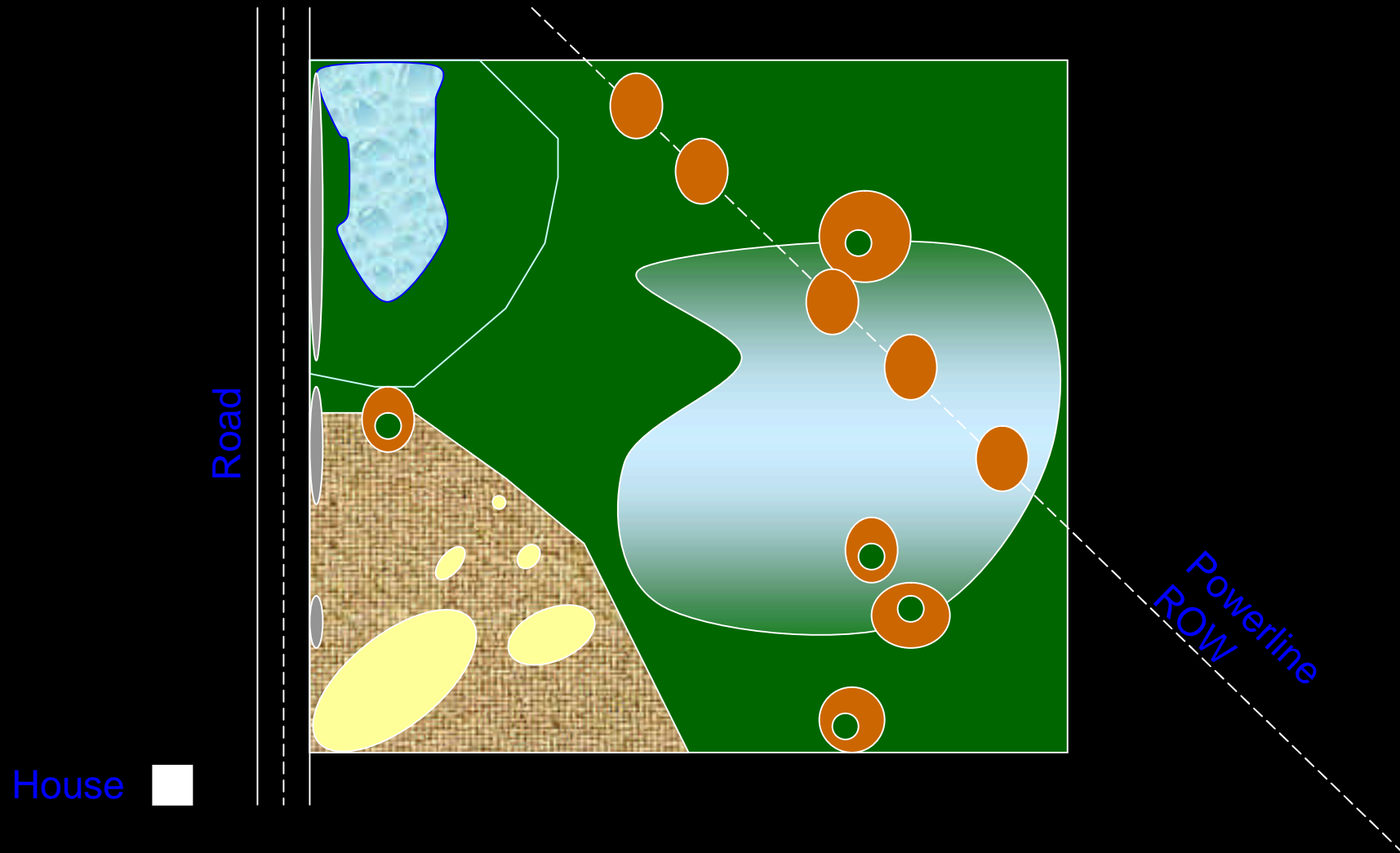
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- Asian bush honeysuckle (18 ac.)



For RCG, control upstream to downstream

Prairie Acres Preserve – *Site-based prioritization*

- Tree of heaven (10 acres)
- Reed canary grass (2 ac.)
- Asian bush honeysuckle (18 ac.)



For ABH, control seed source first, then outliers

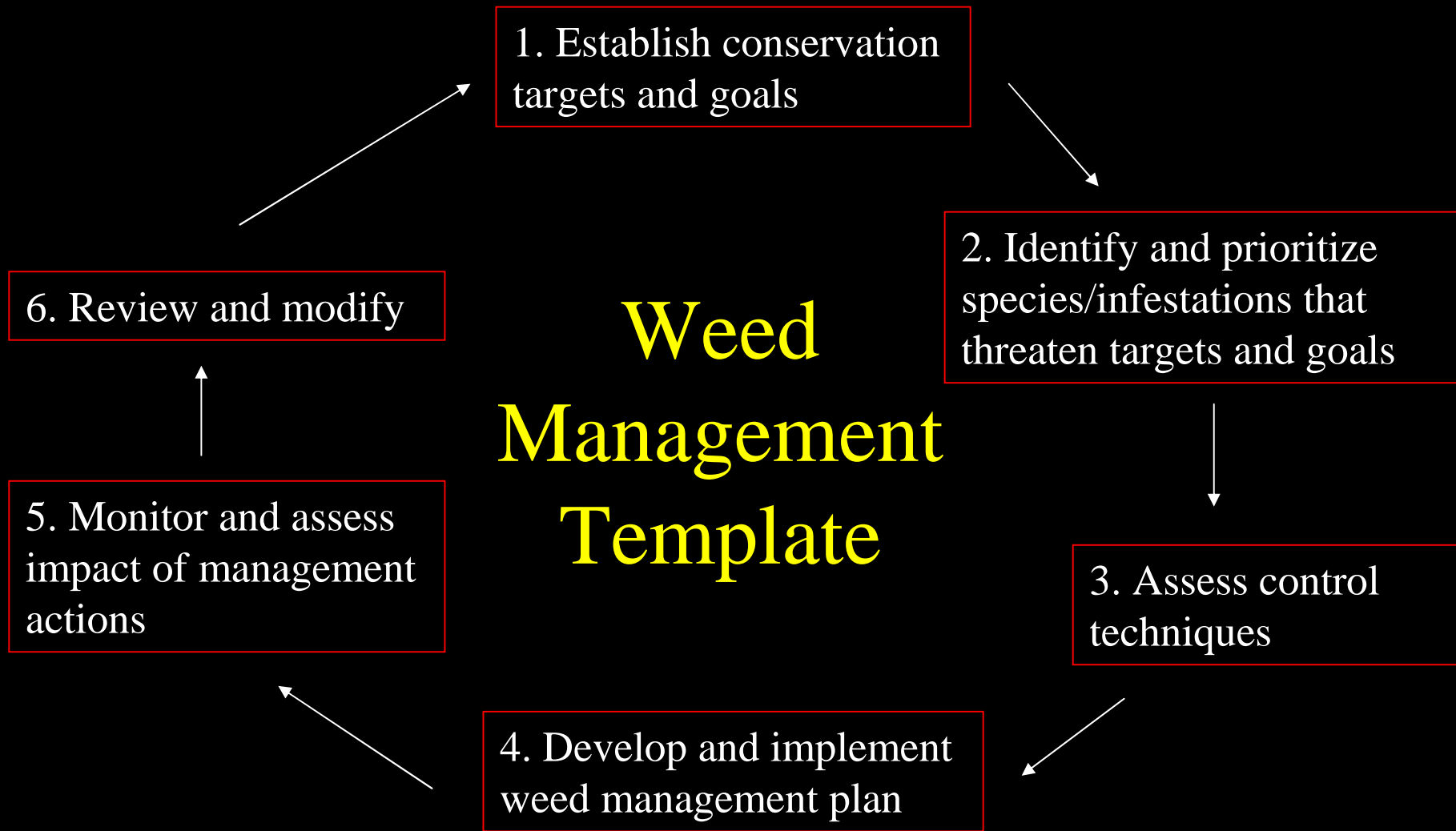


Figure 1. Flow chart for Adaptive Management of Weeds describing management actions and decisions confronting natural area managers (from Randall (1997), based on a diagram by Oren Pollak, personal communication).

3. Assess control techniques

- For only those species that pose a threat
- The ‘right’ technique may be different for a 1/10 acre of scattered garlic mustard plants vs. a 5 acre area dominated by garlic mustard – consider all the possible tools

4. Develop and implement weed management plan

1. INTRODUCTION

- A. Description of the Site, Conservation Targets, and Management Goals
- B. How Weeds Threaten Targets and Interfere with Management Goals
- C. Inventory of Weeds on the Site

2. OVERVIEW OF WEED MANAGEMENT PLAN

- A. Management Philosophy & Setting Priorities (Using Adaptive Strategies)
- B. Summary of Specific Actions Planned
- C. Tables

Table 1: Prioritized List of Weed Species

Table 2: Weed Management Plan Implementation Schedule

Table 3: Projected Resource Costs

Table 4: Itemized Actual Annual Cost and Labor Worksheets

Table 5: Projected and Actual Resource Uses

3. SPECIFIC WEED CONTROL PLANS

Bad Weed #1 (*Weedicus vulgare*)

Nasty Weed #2 (*Commonus horridus*)

Evil Weed #3 (*Diabolicus invasivii*)

5. Monitor and assess impact of management actions

- Necessary to show whether treatments are effective
- Can be done at different levels of intensity – ‘ocular estimate’ vs. research plots

6. Review and modify

- Change what isn't working.
- Change priorities as new species emerge

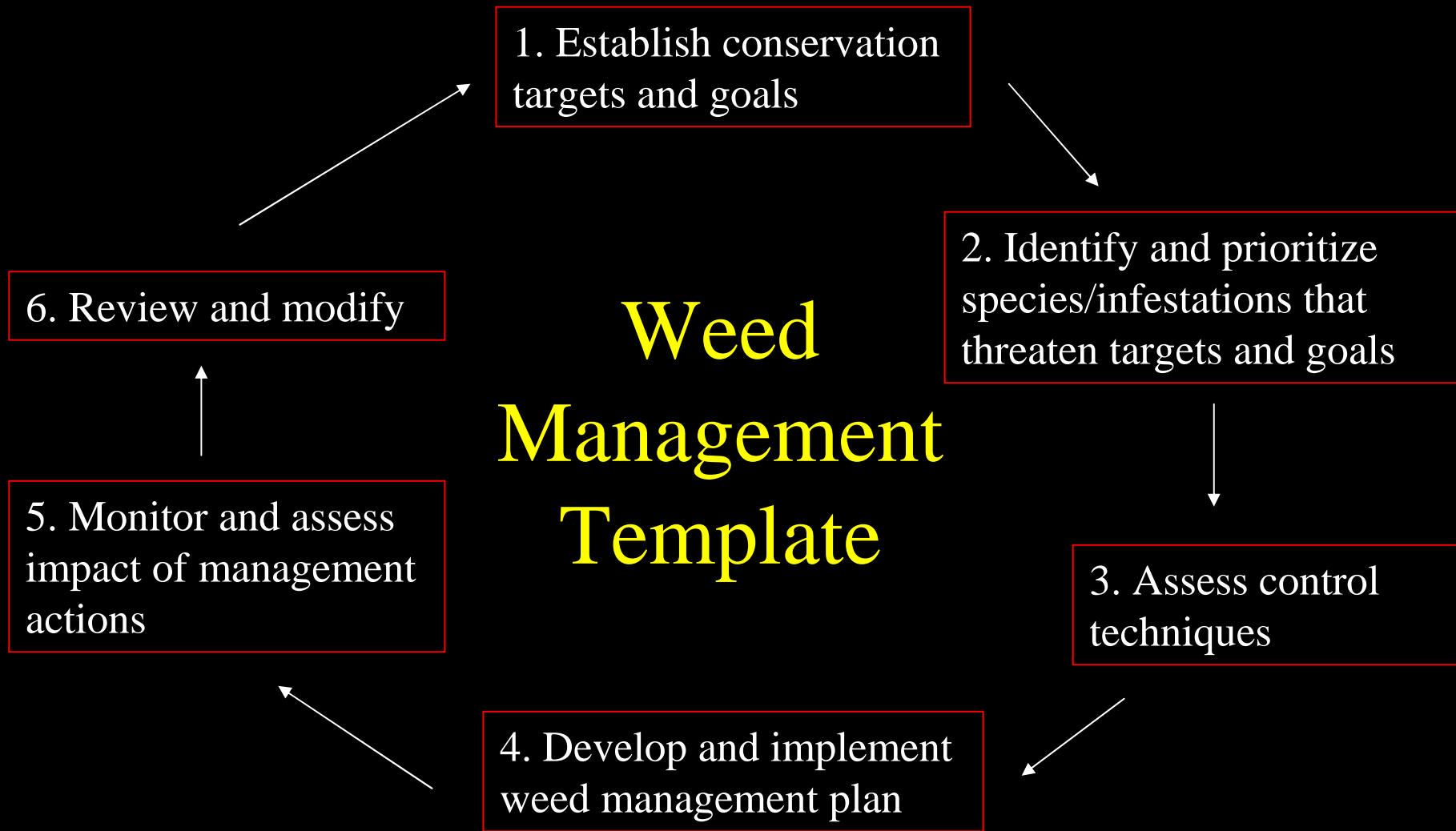


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