



PICKING OUR BATTLES

*A Guide to Planning Successful
Invasive Plant Management Projects*



Picking Our Battles

WHAT
IT IS

HOW TO
USE IT

SMART
STRATEGIES

HERE
TO HELP



Here's what this presentation about "Picking Our Battles" for successful invasive plant projects will cover.

Picking Our Battles

WHAT
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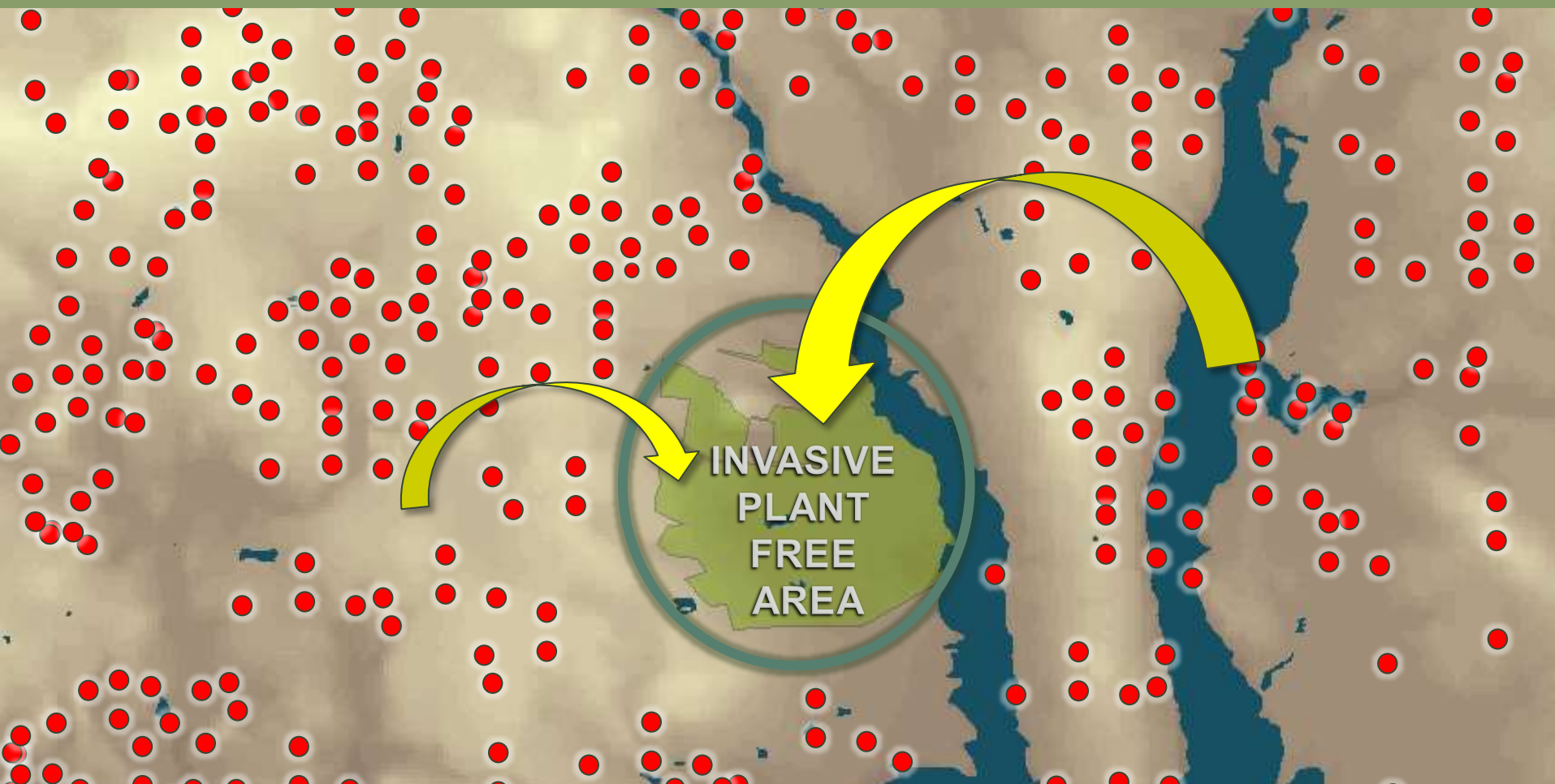
SMART
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First we describe why “Picking Our Battles” was developed and overview what it is.

Invasive Plants Know No Boundaries



Once present throughout a landscape, a species of invasive plant can easily return to an area you have successfully made invasive free unless a large-scale strategic approach is taken to prioritizing invasive plant management projects.

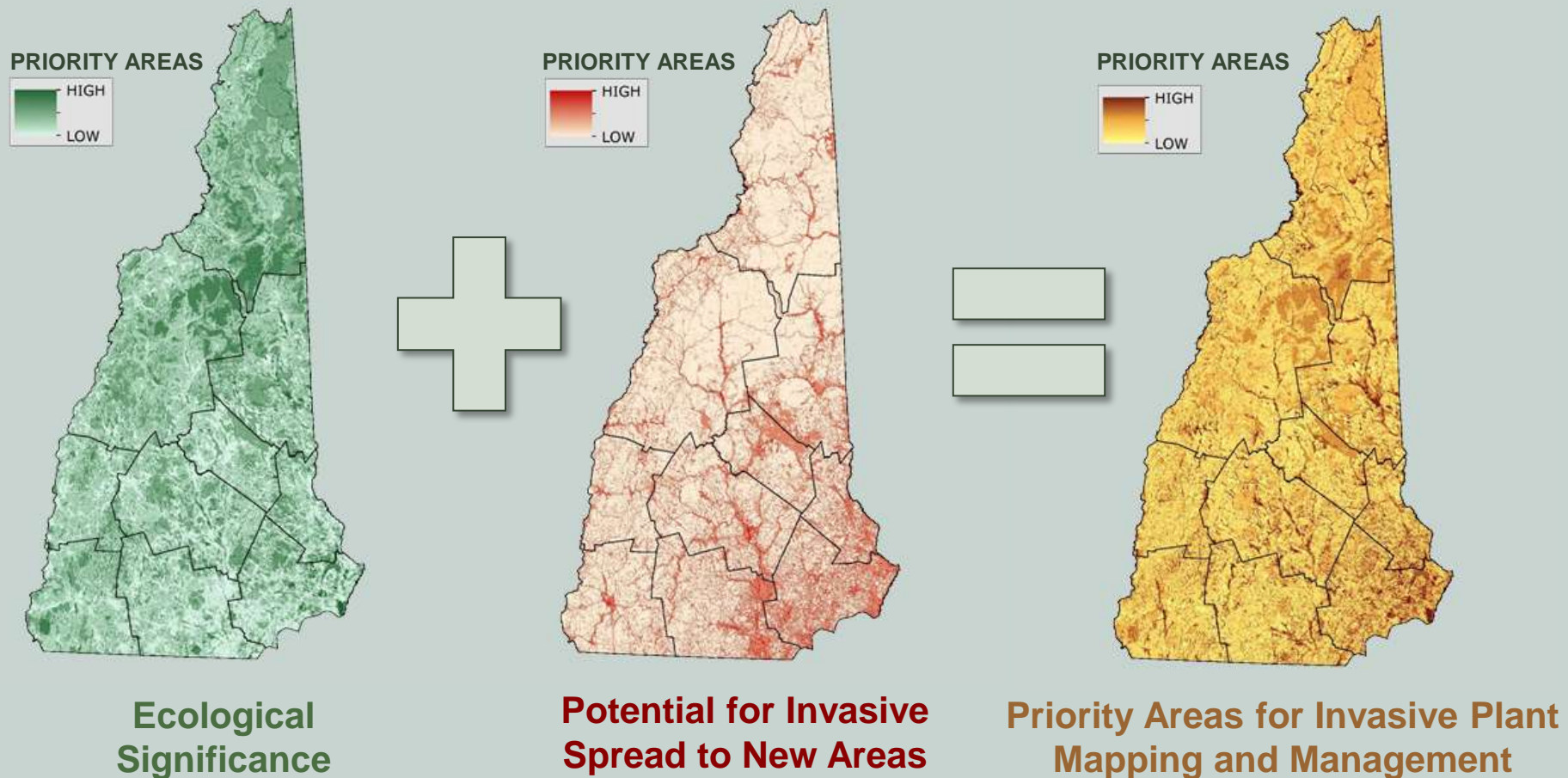
Pulling Together

Antioch University of New England * Audubon Society of NH * Great Bay National Estuarine Research Reserve * Natural Resources Conservation Service * NH Aquatic Resources Mitigation Fund Program * NH Botany Club * NH Coastal Watershed Invasive Plant Partnership * NH Department of Agriculture * NH Department of Transportation * NH Fish and Game Department, NH Natural Heritage * NH Office of Information and Technology * NH State Invasive Species Committee * The Nature Conservancy * New England Wildflower Society * Piscataqua Regional Estuaries Partnership * Society for Protection of NH Forests * University of NH Cooperative Extension * University of New Hampshire Department of Natural Resources and the Environment * US Forest Service * US Fish and Wildlife Service



For this reason, the NH Fish and Game Department, NH Natural Heritage Bureau, and Great Bay National Estuarine Research Reserve teamed up with over 120 community members, natural resource managers, and academics...

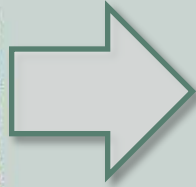
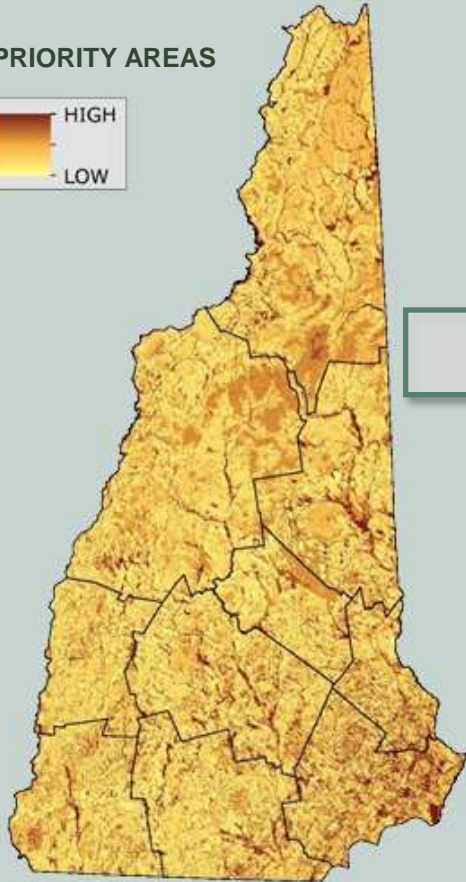
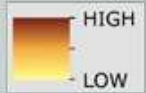
“Hot Spots” for Invasive Plant Management



...to develop a statewide prioritization plan for management of upland, wetland, and intertidal invasive plant species.

Invasive Plant Priority Area Maps

PRIORITY AREAS



**Prevent spread of
invasive plants**

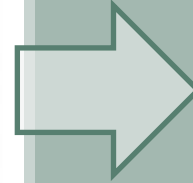
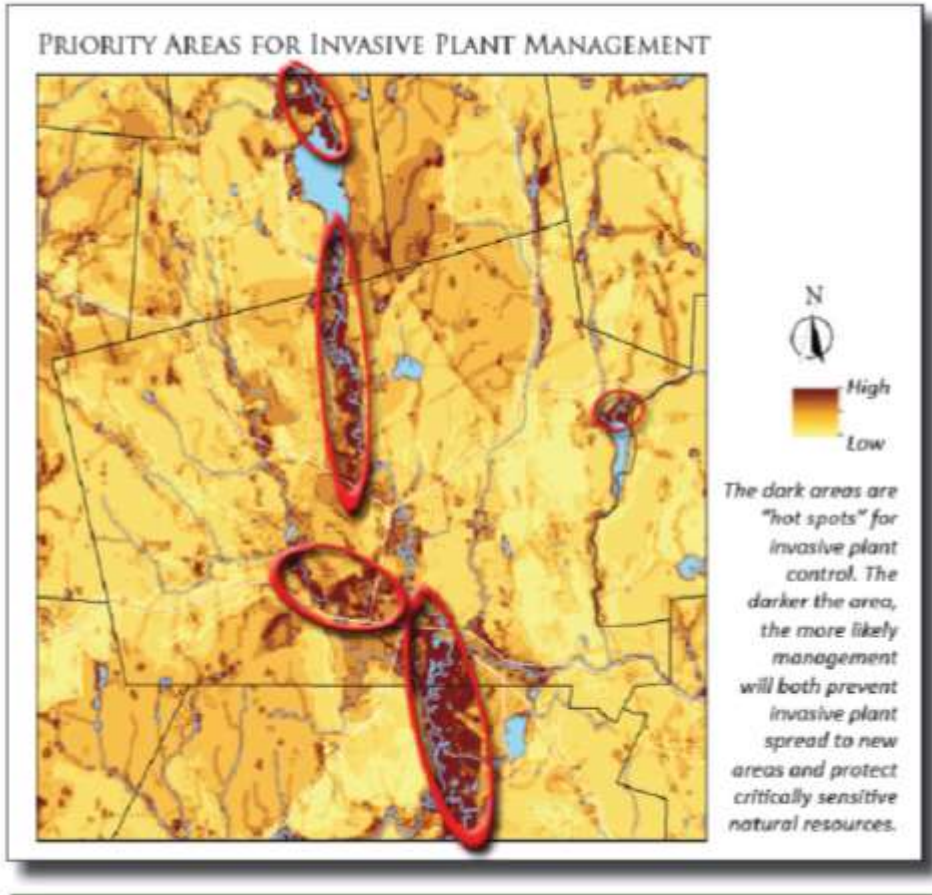


**Protect sensitive
ecological resources**



The darker an area, the more likely management will BOTH prevent the spread of invasive plants to new areas AND protect sensitive ecological resources.

Prioritize “Hot Spots” on Maps



Where to start mapping
invasive species
distribution



Where to begin invasive
plant management

The darkest areas, or “hot spots”, show where to start looking for invasive plants and where to start management once you have an idea of the types of species and distribution of invasive plants present.

Available for Download



New Hampshire
FISH AND GAME
Connecting you to life outdoors



wildnh.com/invasives

In This Section

- ▶ Customized Toad Strategies
- ▶ Maps in Action
- ▶ Plan Your Project Success
- ▶ Resources

Picking Our Battles

Planning Successful Invasive Plant Management Projects

Invasive plants can cause significant ecological and economic harm and are changing the face of America. They may impact wildlife by choking out natural habitats such as freshwater wetlands, causing loss of available food, or by altering habitat structure or function.

The importance of minimizing the spread of invasive plants across the landscape means they are a common focus of restoration projects. However, invasive plants know no boundaries and can easily reestablish from surrounding areas unless a landscape-scale



Download the
**"Picking Our Battles"
Handbook**

Invasive plant priority maps can be downloaded at wildnh.com/invasives...

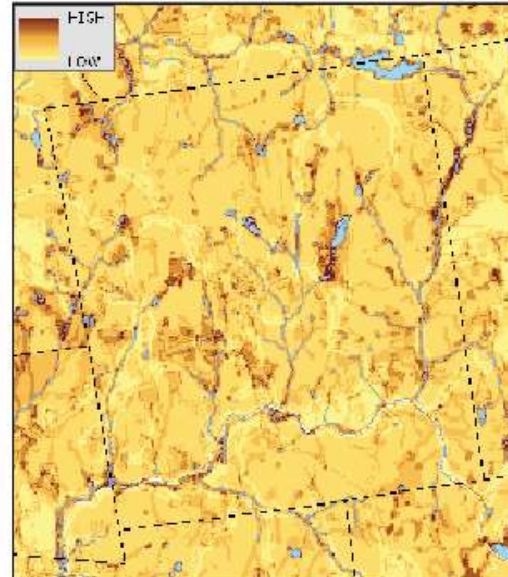
Customized for YOUR Community

“Picking Our Battles”: An Invasive Plant Control Strategy for Acworth, NH

A town and landscape scale community collaboration to help restore the native biodiversity of New Hampshire.



PRIORITY AREAS FOR INVASIVE PLANT MANAGEMENT



The dark areas are “hot spots” for invasive plant control. The darker the area, the more likely management will both prevent invasive plant spread to new areas and protect critically sensitive natural resources.

MOST WANTED

INVASIVE PLANT SPECIES IN ACWORTH

These species of invasive plant have not yet fully taken root in Acworth. This means they are the easiest battles to fight. Early detection and rapid response to control small populations of these species might prevent them from becoming fully established in your municipality.

- Autumn Olive
(*Elaeagnus umbellata*)
- Glossy Buckthorn
(*Rhamnus frangula*)
- Perennial Pepperweed
(*Lepidium latifolium*)

No one knows your municipality like you. If you would like to suggest updates to this list, please contact the Acworth Invasive Plant Task Force.

Restoration is a Full Circle ...

Invasive plant species are early colonizers of disturbed soils. Once you have cleared an area and exposed bare ground, remember to plant with native species as soon as possible.

... Pull, *then Plant!*

Version 1.0, May 2012

...on this website a customized map is available for each community in New Hampshire along with a list of “early detection” species that are just coming into that location.

Online Interactive Viewer

GRANITView II v0

Search...

Home Data Sources Layer Info Drawing Tools Measurement Tools

Map Layers Re-Order Geo Service Shapefile CSV File

Map Layers

Layer Theme: Standard GRANIT Layers (default)

- Conservation Lands
- Recreation
- Soils
- Water Resources
- Environmental Data
 - Invasive Plant Management Priority Areas
- Landcover/Land Use
- Orthophotography
- Topography

Show Legend Filter...

Site Info Map Layers

2mi 2.5km Lat: Lon: © 2016 Microsoft Corp

granitviewii.unh.edu

The invasive plant priority maps can also be looked at using GRANITView II. Click on the “Environmental Data” tab and then the “Invasive Plant Management Priority Areas” sub menu to zoom into wherever is of interest to you.

Geographic Information System

The screenshot shows the NH GRANIT website interface. At the top, there is a navigation bar with links for Home, About Us, News, Projects, and Resource Library. Below this is a secondary navigation bar with links for Data 101, Download Free Data, Order Data, Online Maps & Services, and Map Library. The main content area displays search results for the term "Invasive". A red circle highlights the "Invasive" search term and the "Search GRANIT" button. The search results show 4 records matching the query. Each record includes a description, a "Full Record" link, a status icon (a red 'x'), a radio button for "ascii" format, and a "Download Now" button with a checkbox for "Mark as part of set".

NH GRANIT
NEW HAMPSHIRE'S STATEWIDE GIS CLEARINGHOUSE

Home About Us News Projects Resource Library
DATA Data 101 Download Free Data Order Data Online Maps & Services Map Library

Invasive
Search GRANIT

4 records match y

Landscape Scale Upland Invasive Plant Control Strategy: Ecological Significance	Full Record	✗	<input checked="" type="radio"/> ascii	Download Now <input type="checkbox"/> Mark as part of set
Landscape Scale Upland Invasive Plant Control Strategy: Ecological Services	Full Record	✗	<input checked="" type="radio"/> ascii	Download Now <input type="checkbox"/> Mark as part of set
Landscape Scale Upland Invasive Plant Control Strategy: Priority Areas for Invasive Plant Management	Full Record	✗	<input checked="" type="radio"/> ascii	Download Now <input type="checkbox"/> Mark as part of set
Landscape Scale Upland Invasive Plant Control Strategy: Risk of Potential Spread	Full Record	✗	<input checked="" type="radio"/> ascii	Download Now <input type="checkbox"/> Mark as part of set

GIS Event Calendar
April
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19

www.granit.unh.edu

If you are a GIS user, files can be downloaded from NH GRANIT. An easy way to find them is to type the search term "invasive" in the Data Discovery Tool search engine.

Picking Our Battles

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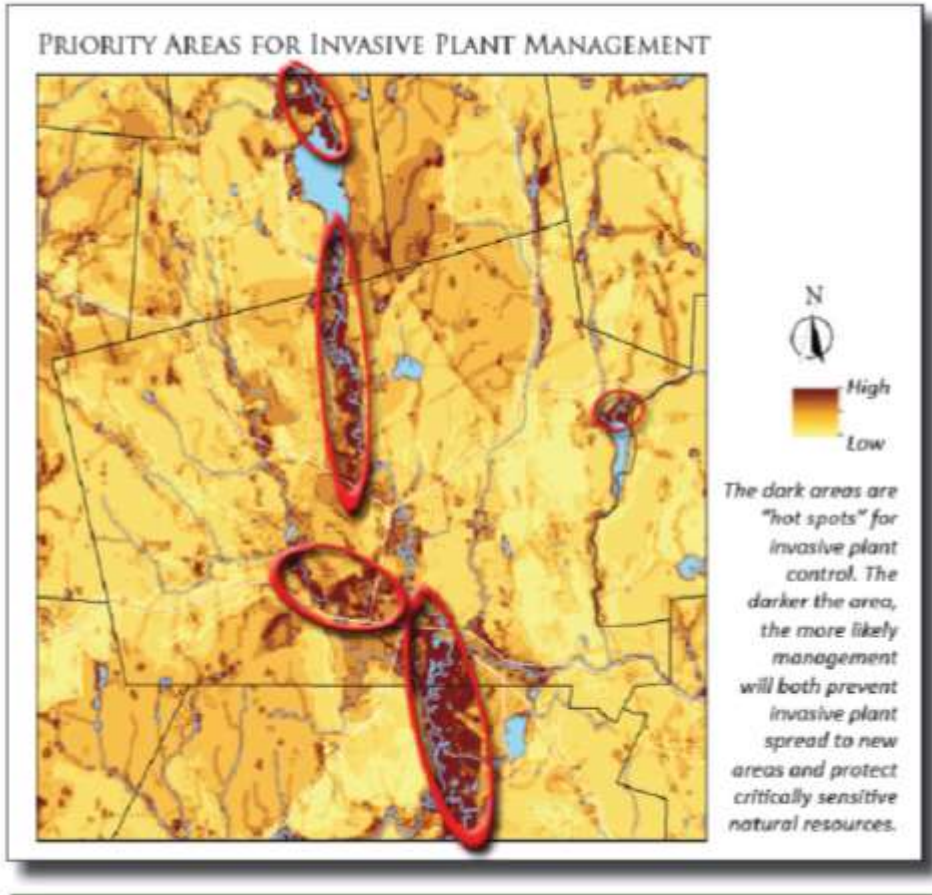
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What is the best way to use "Picking Our Battles" to get successful invasive plant projects on the ground?

First, Choose Where to Begin Work



Hot spots for invasive plant control are a great place to start. Use the prioritization maps to identify one or more of these areas to begin working within.

Then Map Where Invasives Are



	A	B	C	D	E	F	G	
2	Species	Discovery	Habitat	Disturbance	Abundance	Distribution	P	
3	Honeysuckle, Morrow	2006	EDGE-Roadside	Forest	Less than 20	Single patch	E	
4	Honeysuckle, Morrow	2006	EDGE-Roadside	Culm. herb	Single plant	Single plant	5	
5	Honeysuckle, Tutank	2006	WSP-Roadside	Other (human)	Single plant	Single plant	20	
6	iris, Yellow Flag	2006	WSP-Roadside	Other (human)	Less than 20	Densely sparse	1	
7	Honeysuckle, Tutank	2006	WSP-Roadside	Other (human)	Less than 20	Single patch	20	
8	Rose, Multiflora	2006	WSP-Roadside	Other (human)	Less than 20	Single patch	6	
9	Rose, Multiflora	2006	WSP-Roadside	Other (human)	Less than 20	Single patch	6	
10	Honeysuckle, Shroy B	2006	WSP-Roadside	Other (human)	Less than 20	Single patch	1	
11	Burdock, Glossy	2006	EDGE-Upland		Less than 20	Single patch	1	
12	Honeysuckle, Shroy B	2006	EDGE-Upland		Single plant	Single plant	10%	Vegetative
13	Honeysuckle, Shroy B	2006	WTLND-Shrub	Beaver	Single plant	Single plant	15%	Vegetative
14	Honeysuckle, Shroy B	2006	WTLND-Shrub	Beaver	Single plant	Single plant	Less than 1%	
15	Black, Nuttallia	2006	WTLND-Shrub	Beaver	Less than 20	Single patch	Less than 1%	
16	Bullberry, American	2006	WTLND-Shrub	Beaver	Single plant	Single plant	15%	Fruit
17	Barberry, Common/E	2006	WTLND-Shrub	Beaver	Single plant	Single plant	15%	Fruit
18	Honeysuckle, Shroy B	2006	WTLND-Shrub	Beaver	Single plant	Single plant	15%	Vegetative
19	Honeysuckle, Shroy B	2006	FOREST-Oak	Other (human)	Less than 20	Single patch	15%	Fruit
20	Gray, Autumn	2006	FOREST-Oak	Other (human)	Single plant	Single plant	1-25%	
21	Honeysuckle, Shroy B	2006	FOREST-Oak	Other (human)	Less than 20	Densely sparse	15%	Fruit
22	Maple, Norway	2006	WSP-Roadside	Other (human)	Less than 20	Multiple patches	1-25%	Vegetative

Next, map what types of invasive plants occur there. The mapping technique you use can be as simple or complex as you choose to make it.

Learn How to Identify Invasive Plants



***Lepidium latifolium* - Perennial Pepperweed** Family: Cruciferae Native to: Eurasia

Small Pepperweed—*Lepidium latifolium* Perennial Pepperweed—perennial. Vermont area, NH.

Description: Long-lived perennial grows 2-4' tall. Leaves: Alternate, lanceolate with serrated edge. Flowers: Terminal, slightly channeled, white. July. Fruit: Siliqua, rounded, fleshy, hairy 1/8" long to 4-8. Habitat: Prefers wet, back-slopes such as coastal tidal meadows, ditches, wetlands, and floodplains. Seed: Seeds and creeping rhizomes spread by water, wildlife and man. Comments: Plants spread quickly into natural areas leading to impingement and displacement of surrounding wetland species. Control: Small populations can be hand pulled while large populations can be continuously cut back to prevent flowering and seed production. Herbicide treatments are also effective.

Photo by David Lantz © South Polestar

***Euonymus alatus* - Burning Bush** Family: Celastraceae Native to: Asia

Burning Bush—*Euonymus alatus* Burning Bush—deciduous. Southern, NH.

Description: Deciduous shrub reaching 20' in height and width. Stem: Generally with corky wings. Leaves: Oppositely arranged, simple and elliptic, 1-3" long by half as wide, light green. Flowers: Inconspicuous greenish-yellow, May to June. Fruit: Fleshy green capsule turning red in fall. Zone: 3 to 8. Habitat: Prefers dry upland soils, full sun to heavy shade, pH adaptable. Spread: Seeds are dispersed by birds and wildlife. Comments: Outcompetes and displaces native species. Control: Hand remove seedlings and saplings. Use a spade or shovel to dig out larger plants. Large populations may be controlled with herbicide use.

Photo by Douglas Cygan

Learn what to look for before you head out. A good guide, created especially for NH, can be downloaded at the state Department of Agriculture's website.

Best Management Techniques



Perennial Pepperweed—*Capparis latifolia* Perennial Pepperweed (various locations, 200)

Description: Long lived perennial growing 2-4' tall. Leaves: Alternate, lanceolate with serrated edge. Flowers: Terminal, slightly clustered, white, July. Fruits: drupe, rounded, flattened, hairy 1/2" long. Height: 4-8'. Habitat: Prefers wet, marshy areas such as coastal tidal marshes, ditches, wetlands, and floodplain areas. Seeds and creeping rhizomes spread by water, wildlife and humans. Comments: Plants spread quickly into natural areas leading to suppression and displacement of native wetland species. Control: Small populations can be hand pulled while larger populations may be continuously cut back to prevent flowering and seed production. Herbicide treatments are also effective.



Photo by Frank Lamb © Invasive Plant



Burning Bush—*Euonymus alatus* Burning Bush (various locations, 200)

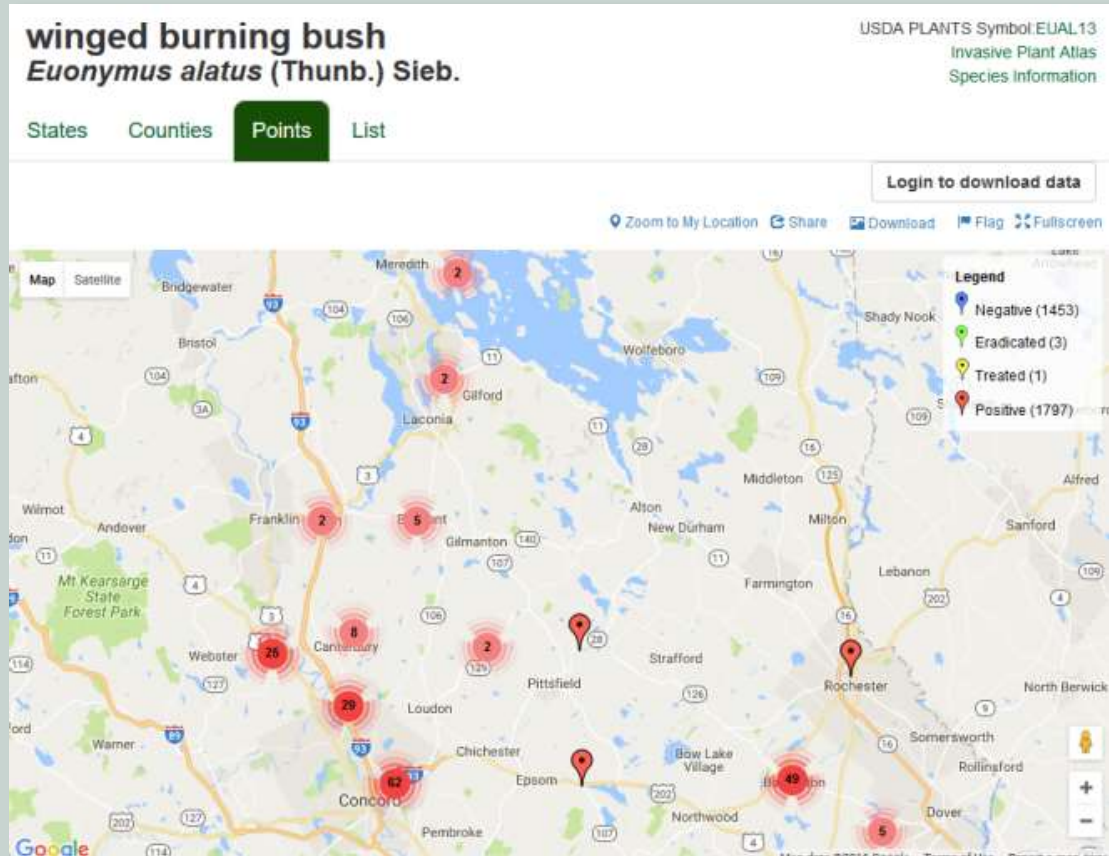
Description: Deciduous shrub reaching 20' in height and width. Stems: Greenish with corky wings. Leaves: Oppositely arranged, simple and elliptic, 1-3" long by half as wide, light green. Flowers: inconspicuous greenish-yellow, May to June. Fruit: Fleshy green capsule turning red in fall. Zone: 3 to 8. Habitat: Prefers dry upland sites, full sun to heavy shade, pH adaptable. Spread: Seeds are dispersed by birds and wildlife. Comments: Outcompetes and displaces native species. Control: Hand remove seedlings and saplings. Use a spade or shovel to dig out larger plants. Large populations may be controlled with herbicide use.



Photo by Douglas Cygan

As well as helping with identification of invasives, it points out similar looking native species and suggests most effective management techniques.

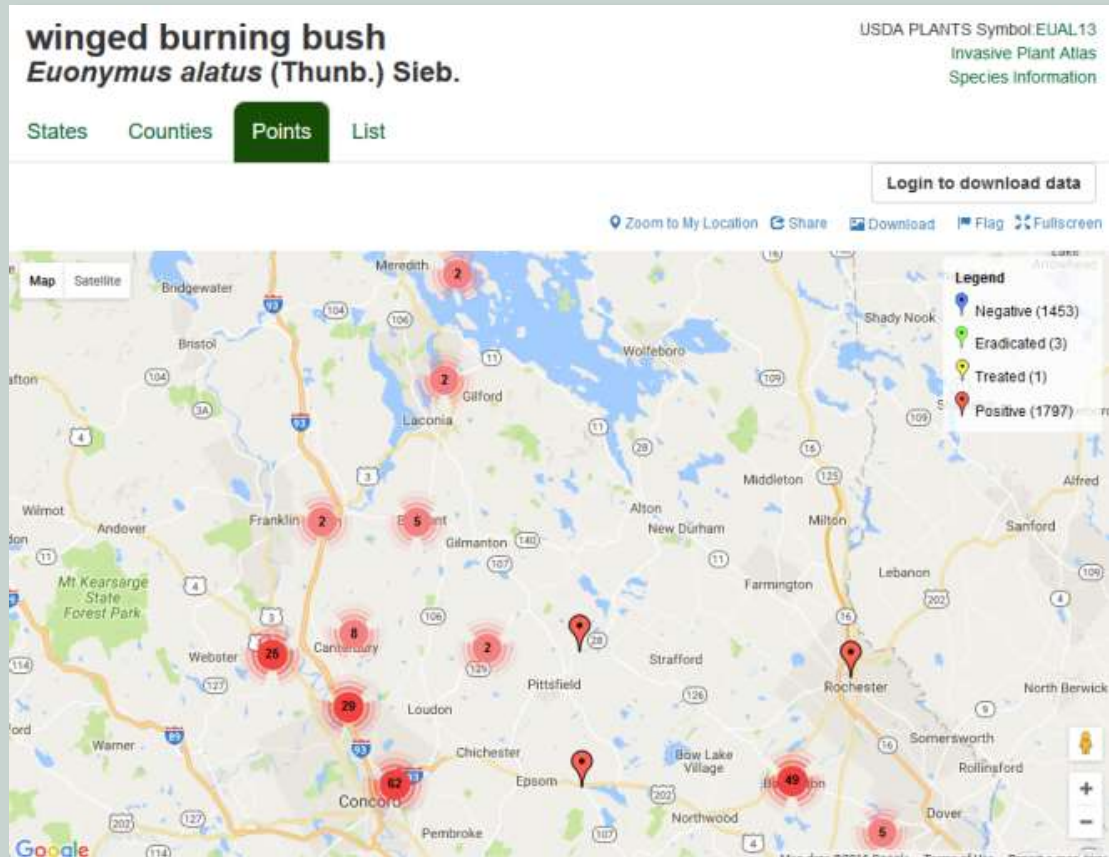
Shared Online Mapping Tool



EDDMapS graphic

A great thing to do is to add the location of any new invasives you find to EDDMapS. This stands for “Early Detection and Distribution Mapping System”. It is a free online tool that anyone in New Hampshire can contribute to.

Pooled Information



EDDMapS graphic

It is what the natural resource professionals that created "Picking Our Battles" decided to contribute their data to. The more comprehensively we understand invasive plant distribution, the better decisions we can make about how to manage them effectively.

Identify A Management Goal



NH Surfrider photo

Once you know what invasive plants are out there, identifying a management goal is the first priority.

Set an Attainable Goal



Your goal could be as general as “remove all invasive plants in the project area” or as specific as “manage knotweed along road edges”. Making your goal attainable in the time period you have available is important.

Achieve Success Before Moving On



Starting with a few projects, and maintaining their success before beginning a new project is key to making a difference.

Picking Our Battles: Smart Strategies

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What are some of the best ways to approach invasive plant projects that “Picking Our Battles” recommends?

Try to Use One, or More, Smart Strategy



EARLY DETECTION & RAPID RESPONSE



PROTECT PRIORITY HABITATS FIRST



START AT THE HEADWATERS AND WORK DOWN STREAM



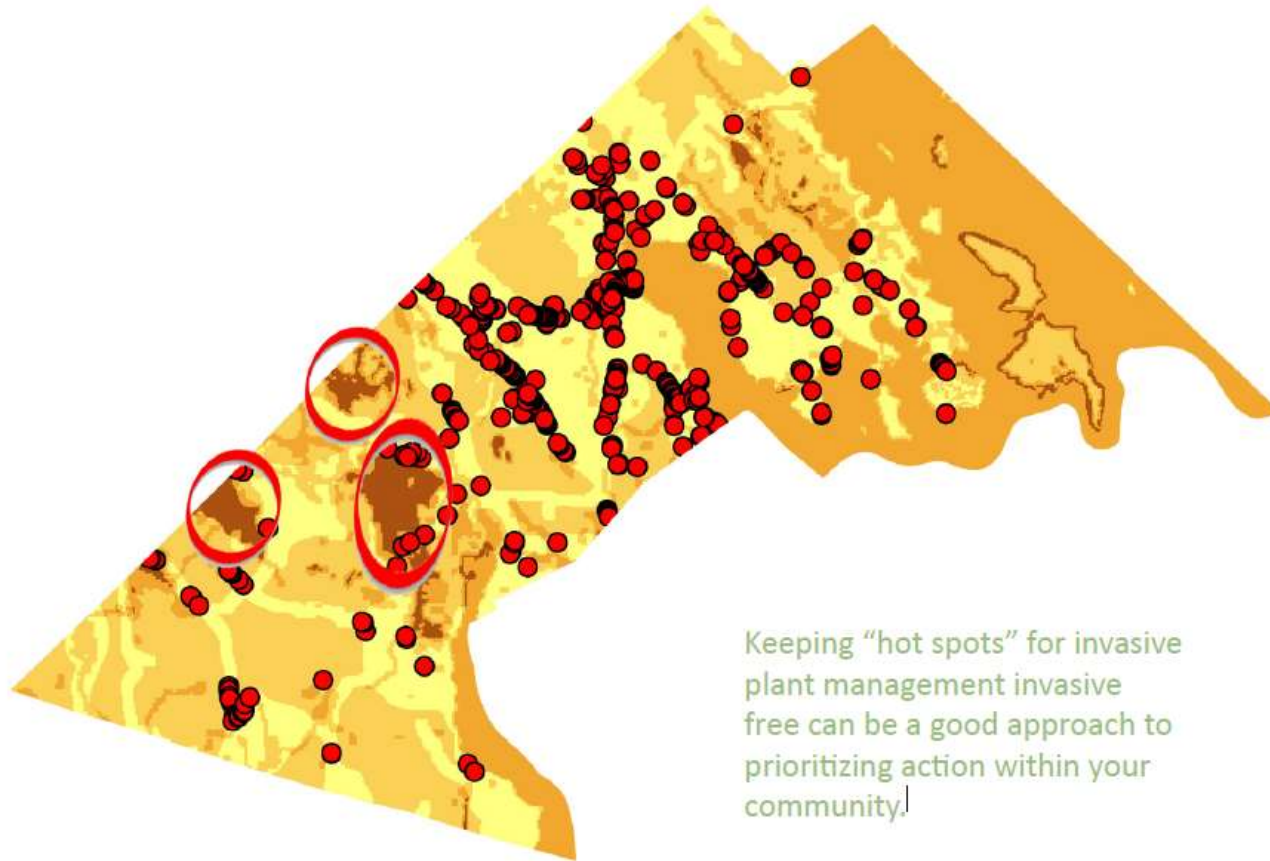
PRIORITIZE AREAS OF DISTURBANCE



START WITH SMALL POPULATIONS

There are several smart ways to plan an invasive species project. Using one, or a combination of, these strategies will make the most difference ecologically and will use your time and/or money resources most efficiently.

Early Detection and Rapid Response



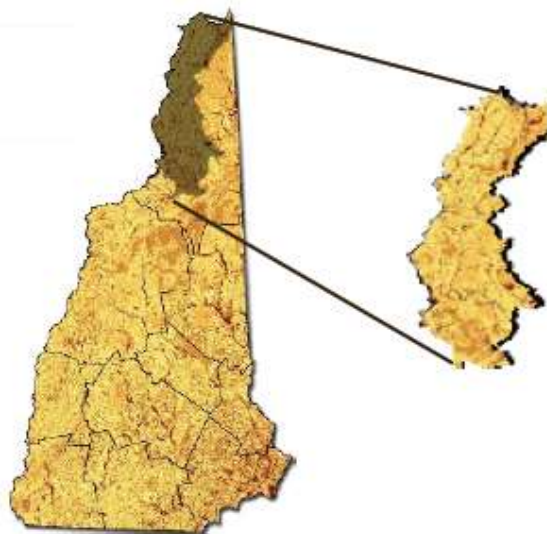
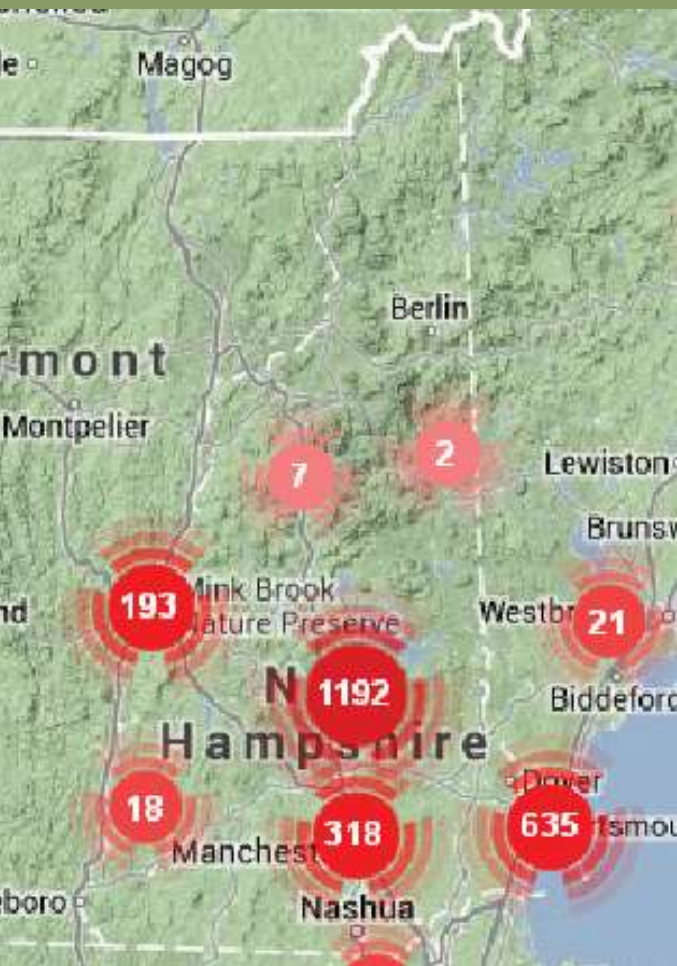
Keeping “hot spots” for invasive plant management invasive free can be a good approach to prioritizing action within your community.



Meredith

Early detection and rapid response, that is, removing a species before it becomes well established within your project area is by far the most effective strategy. This well known approach is often abbreviated to “EDRR”.

EDRR Can Take Place At Any Scale



STATEWIDE

REGIONAL

SITE SPECIFIC

E.g., municipality,
county, wildlife refuge
or watershed.

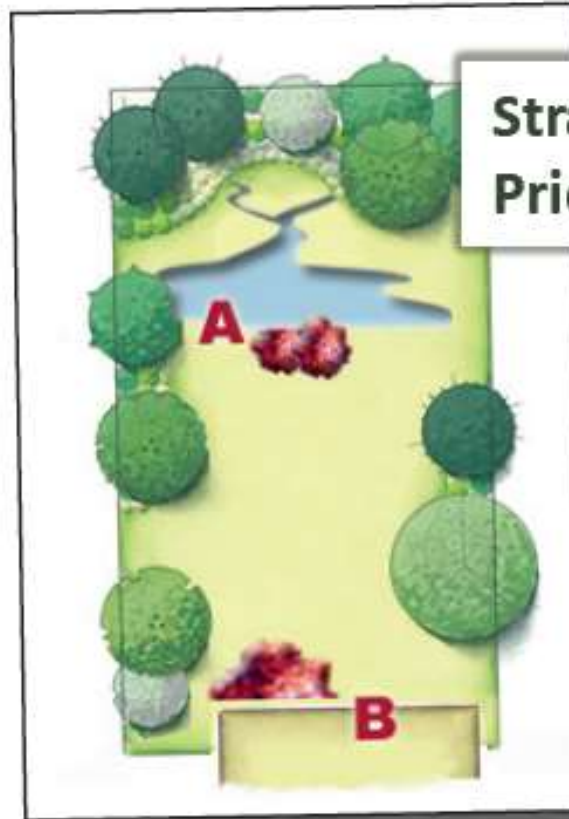
E.g., conservation land,
schoolyard, town forest,
your backyard.



Chris Costello photo

Early detection can take place at any scale. Even if a plant is common in surrounding areas, but not present in your chosen project area, focus on preventing it from moving in. This is the most important battle to pick!

Protect Priority Habitats First



Strategy: Protect Priority Habitats First

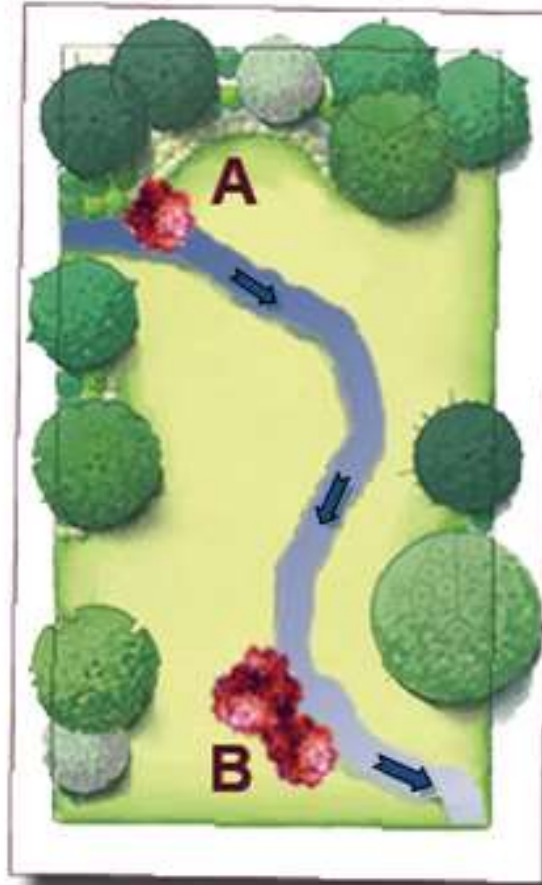
Selecting habitats that are a priority to you is a good place to start managing invasive plants. In this example, a homeowner decided to start with population "A" which is located next to a wetland and leave population "B", which is next to the house, until later.

Selecting habitats of priority within your project area is a good approach. It could be an uncommon habitat in NH, such as salt marsh, or an area you are just particularly fond of such as the wetlands or a meadow on your property.

Start At the Headwaters

Strategy: Start at the Headwaters and Work Downstream

Starting invasive plant management with the upstream population "A" before "B" prevents reinfestation from upstream..



Starting at the headwaters prevents reinfestation from upstream populations. This is just as important a strategy for a major river such as the Saco or Merrimack as it is for a small order stream.

Prioritize Areas of Disturbance



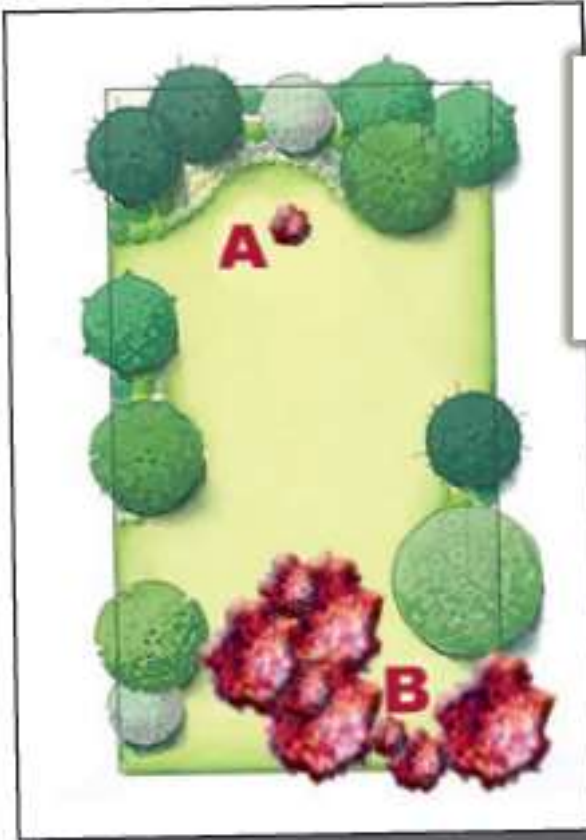
Strategy: Prioritize Areas of Disturbance



Invasive plants are early colonizers of disturbed soils.

Invasive plants are early colonizers of disturbed soils, so being proactive and trying to manage any invasives present before a timber harvest, construction project, or other disturbance takes place can be very effective.

Start With Small Populations



Strategy: Start with Small Populations, or Deal With "Spot Fires"

Starting with small populations is more likely to result in early success.

Starting with a small population is more likely to result in early success. Early removal also prevents its growth into a large population that is more challenging to remove.

A Network of Professionals

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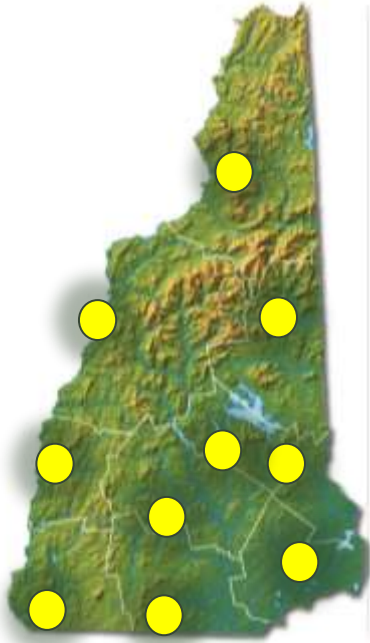
Who can help us get our invasive project done?

Working Together to Make a Difference



Putting an invasive plant project together can be rewarding and fun. There are a network of people out there to help.

Here to Help Us



 UNIVERSITY
of NEW HAMPSHIRE
Cooperative Extension



Cooperative Extension County Foresters have a fantastic wealth of knowledge and are experts in advising how to deal with invasive species.

Here to Help Us



New Hampshire
Department of Agriculture,
Markets & Food

The NH Department of Agriculture has an Invasive Species Coordinator who can share guidance on invasive plant identification and management options.

Here to Help Us



United States Department of Agriculture
Natural Resources Conservation Service



The Natural Resource Conservation Service and NH's County Conservation Districts are available to give technical advice and can sometimes provide partial funding.

Here to Help Us



The Stewardship Network
New England

month week day

			Fri		Sat	
			3	4		5
				9:30a Training: Timber Harvest Practices Workshop		
6	7	8	9	10	11	12
					8a Conservation Commission Annual Conference (external signup)	
13	14	15	16	17	18	19
	9a Ipswich Native Edibles Planting		7p An Introduction to Fish- and Flood-Friendly Stream Crossings	9a Training Seminar: Volunteer Management: A Precious Resource		

If volunteers are the backbone to your project, The Stewardship Network: New England is available to help. You can post your event on their calendar, they provide training, and they can help recruit volunteers.

A Recipe for Success



Use the invasive plant prioritization map to decide where to start work.



Map invasive plant species and their distribution.



Identify your project goal and the smart strategy, or strategies, to achieve it.



Commit to a multi-year effort.



After you have removed invasives restore the area with native plants.



Celebrate your success!

Using each step of this “recipe for success” will mean your invasive plant project makes the most difference ecologically and will be done making most efficient use of resources needed to complete it.

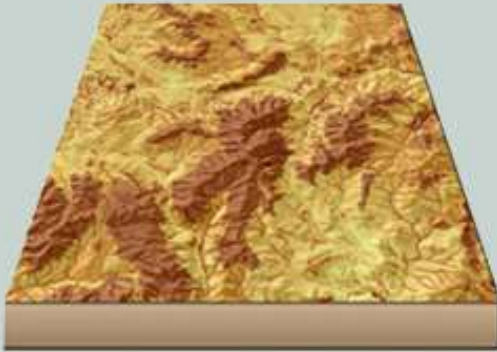
Together We Can Make a Difference!



Working together on shared invasive plant goals we can make a difference and help maintain our native biodiversity for everyone to enjoy!

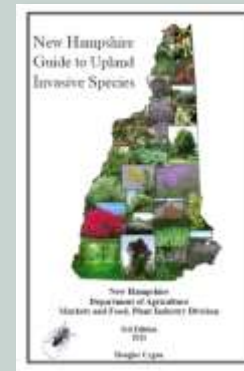
Questions?

About this “Picking Our Battles” for successful invasive plant projects



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About invasive plants and their management



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wildnh.gov/invasives