



# WNY PRISM

Partnering to Protect Western New York from Invasive Species

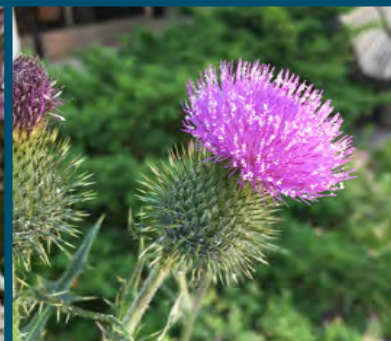
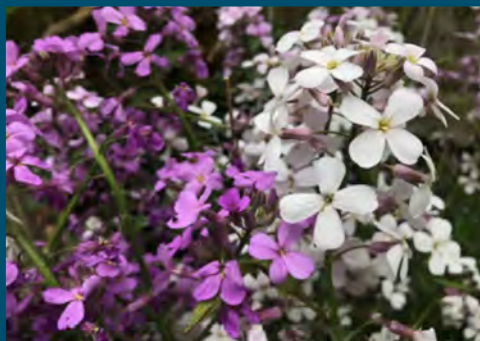
## Best Management Practices: Invasive Biennials

Invasive biennials and short-lived perennials include common species such as dame's rocket (*Hesperis matronalis*), bull thistle (*Cirsium vulgare*), sweet clover (*Melilotus* spp.), common mullein (*Verbascum thapsus*) and teasel (*Dipsacus fullonum* and *D. laciniatus*). Biennials are plants that live for 2 years and usually flower during the second year, while short-lived perennials flower repeatedly, but generally only live up to 5 years. While the effectiveness of different management methods do vary based on the species, the Best Management Practices are similar and can be applied effectively to most biennial species and short-lived perennial species.

Invasive biennials and short-lived perennials are often prolific seed producers. They frequently grow in recently disturbed and degraded areas including roadsides, fields and construction sites. These traits allow them to spread quickly and form dense stands that outcompete native species. Many biennials overwinter as first year plants and remain green, making them easy to identify and remove year-round. Several years of management are necessary to deplete the seedbank.

**Integrated Pest Management (IPM)** is an adaptive approach to invasive species management that involves the selection of multiple control methods and appropriate timing to meet the needs of each specific site and species. The goal is to maximize effective control and to minimize any potential negative impacts.

Management efforts should begin with an invasive species survey and site assessment. This allows for the development of a management plan and selection of appropriate removal methods. Management for most well-established species and/or infestations will require dedication over a number of years, often 2-5. Once initial control is achieved, restoration and continued monitoring will be required to maintain success.



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### Management

#### Manual

Manual removal is suggested only for small populations. Excessive manual removal can cause significant damage to soil and plant communities, while also making the area more susceptible to further invasion. Manual removal can be done by physically removing the entire plant or cutting its tap root, if present, several inches below the soil.

#### Mechanical

Larger infestations may be cut or mown prior to flowering. This may be done to reduce seed production, extend the season for manual removal by pushing flowering later or to facilitate additional management by preparing the site for chemical treatment. Do not allow plants to go to seed as this replenishes the seedbank.

#### Chemical

Glyphosate, and/or other approved selective herbicides, can be applied via foliar spray to vegetative matter in the early spring or late fall. Chemical control methods are recommended up until flowers start to form, after which manual control methods are more effective.

#### Spread Prevention

Care should be taken to limit seed dispersal by conducting management prior to plants producing flowers. Clean mowers before and after use. Mow low to the ground and mow non-infested areas first. Mud and debris should be removed from shoe treads using a stiff bristle brush or [boot brush station](#) to prevent the movement of seeds.

#### Disposal

Plant material should be disposed of in a landfill-bound trash receptacle. Composting should be done with care, and prior to flower development, due to the risk of continued seed maturation leading to the reestablishment of a population.

#### Restoration

Restoration using native plants should take place to ensure the long-term success of management. Restoration should be timed with seedbank depletion and when continued management requires only minimal manual removal efforts.

USE PESTICIDES WISELY: Always read the entire pesticide label carefully and follow all instructions. Pesticide regulations can vary widely between regions; please contact local authorities for additional pesticide use requirements, restrictions or recommendations. Mention of pesticide products by WNY PRISM does not constitute endorsement of any material.



**Photos Front:** Top- common mullein; Middle- cutleaf teasel flowers; Bottom (left to right)- dame's rocket flowers, bull thistle flower, white sweet clover flowers.

**Photos Back:** Top- manual removal of white sweet clover; Bottom- foliar spray herbicide application.

#### Additional Resources

Penn State Exotic Biennials

[bit.ly/ExoticBiennialsPennState](http://bit.ly/ExoticBiennialsPennState)



PARTNERSHIP FOR REGIONAL  
**INVASIVE SPECIES  
MANAGEMENT**  
WESTERN NEW YORK



Department of  
Environmental  
Conservation

*Funding for WNY PRISM is provided by the Environmental Protection Fund through a contract with the NYS Department of Environmental Conservation. WNY PRISM is hosted by the Great Lakes Center and is a sponsored program of the Research Foundation for SUNY Buffalo State University.*