Management Of Invasive Terrestrial Plants

Top 7 most detrimental species to the environment and landowner's properties

Based on information available in 2025

Focused on the most pressing species located within ASA's service area;

Washington and Rensselaer counties

Please Read: *This document aims to provide information on invasive species management as a starting point for landowners. It is not all inclusive and requires outside resources if you want guidance on potentially removing them yourself.*

Resources on who to contact to discuss removal are located at the end of this document.
This is for educational purposes and to provide general information.

The USGS (United States Geological Survey) definition of an invasive species is as follows;

"An invasive species is an **introduced**, **nonnative organism (disease, parasite, plant, or animal)** that begins to **spread** or expand its range from the site of its original introduction and that has the **potential to cause harm** to the environment, the economy, or to human health."

Remember, not all non-native organisms are invasive however. This depends on if they spread aggressively and pose a threat in some way. Even some native plants can become invasive under the right conditions. This document focuses on non-native invasive species.

Environmental Impacts:

- Biodiversity loss in forests, edges, grasslands & even pastures
- Biodiversity loss among animals and insects due to the invasive plants
- Habitat degradation/loss of habitat
- Disrupts ecosystem functions
- Soil erosion
- Decreased water quality in streams and rivers
- Effects on Human/Wildlife Health

Economic Impacts:

- Competes with crops
- Reduces livestock carrying capacity in pastures by displacing desired forage
- Can cause decreased tree regeneration in forests, jeopardizing future harvests
- Decreased land values
- Cost of treatment

The listed species are either prohibited or regulated by the NY DEC.

-Biocontrols are available for certain invasive species, however, professionals and the DEC are the only personnel allowed to implement these controls

-For all herbicide applications, you must follow label instructions and comply with state regulations.

-Some of the suggested herbicides are for professional applicators only. Depending on the situation, professionals must be the applicators.

-Check the EPA's RUP (Restricted Use Products) list on their website before attempting to purchase and apply certain herbicides which may be regulated in some states/areas. The link to EPA's RUP list is below.

https://www.epa.gov/pesticide-worker-safety/restricted-use-products-rup-report

Honeysuckle
(Amur, Fly, Japanese, Morrow's and Tartarian)

Prevention	
-Plant native species in areas without Honeysuckle presence to fill space	
Eradication/Containment depending on the infestation size	**Effective Herbicide**
-Hand pull seedlings if they are minimal (all of root stock should be removed or resprouting will occur) -Stump removal with machinery such as compact tractor can be utilized in non-sensitive areas containing large plants. -Prescribed burns in burnable areas; repeat annually or biennially for 5 or more years for effective control of seedlings -Cutting; can be brush hogged or cut with chainsaws or hand tools followed by an application of herbicide to the stumps. -Immediately after cutting, herbicide should be applied to stump through spraying or wiping it on with sponge applicator to prevent resprouting (refer to herbicide column for details) -Seedlings and mature shrubs can be treated with foliar spray if burning/pulling is not an option (see column on herbicide for details) -Underplanting of native species following Honeysuckle removal to aid in prevention of reinvasion is suggested. Area should be used for agriculture or other purpose if not replanted or maintained afterwards (tillage, mowing etc helps manage the area and prevent further invasion)	-Glyphosate; for stump treatment (available under trade names Roundup and Rodeo). Glyphosate is non-selective so apply ONLY to desired plants and use as little as needed. Apply in late summer, early fall or the dormant season. Follow up treatment may be necessary if resprouting occurs. Roundup can only be used in non-wetlands -In dry, upland areas, foliar spray containing glyphosate will control seedlings. Foliar spray of glyphosate just after blooming in June can control mature shrubs. Can be applied from June to just before leaf color change in fall. -Areas near water; foliar spray Rodeo (containing glyphosate) w/ortho-X27 spreader will control seedlings. Foliar application of Rodeo will kill mature plants if all foliage sprayed. (requires less labor but more herbicide) Can be applied from June to before leaf color change in fall. -Foliar spray is best if used before surrounding plants leaf out in spring or after they lose their leaves in fall to limit the spray of beneficial plants

Honeysuckle Photos

Includes the noticeable berries that most produce.

Figure 1: I, KENPEI, via Wikimedia Commons

Figure 2: Qwert1234, via Wikimedia Commons

Figure 3: Andrew Bossi, via Wikimedia Commons

Multiflora Rose

Prevention
-Plant native species in areas without presence to fill space -Prescribed burning can prevent invasion in areas suitable for burning

Eradication/Containment depending on the infestation size	Effective Herbicide
-Pulling; removing individual plants from the soil is only effective if all roots are removed. Best for light, scattered infestations -Prescribed Burns; Can be done in fire-adapted communities to prevent invasion and establishment of the Multiflora Rose -Mowing; 3-6 cuttings or mowings per growing season for 2-4 years can achieve high plant mortality. In high quality communities, repeated cuttings is preferred since mowing can cause mortality of desirable vegetation. Mowing can also result in flat tires, fill tires with foam to avoid this. -Cutting+herbicide treatment; can be done through sponge application, or spraying with handheld sprayer, directly on stumps of cut plant. Most effective if done late in growing season (July-Sep) and during dormant season -Foliar spray; can be applied July-September. No effects will be seen until the following growing season.	-Herbicides containing Triclopyr can be applied to cut stems or canes for SELECTIVE control of the Multiflora Rose. Spray onto cut surface within MINUTES of cutting. DO NOT apply if rain is forecasted. Avoid spraying nearby plants or spraying any directly onto the ground. - Herbicides containing Fosamine can be applied July-September. Kills only woody species so is the preferred foliar spray treatment. - Herbicides containing Dicamba; is less desirable than Fosamine but still effective. Can be sprayed any time during growing season but best if done May-June. Dicamba is selective against broadleaf plants so care must be taken if applying near desired broad-leafed plants. -Glyphosate is NOT recommended since it is non-selective while the above mentioned are selective. Would work however if it was a very large infested area and other desirable plants were not nearby.

Multiflora Rose Photos

Figure 4 :R.A.Nonenmacher via Wikimedia Commons

Figure 5: Sesamehoneytart, via Wikimedia Commons

Figure 6:Christophe Bornand via creative commons

Figure 7: Σ64, via Wikimedia Commons

Figure 8: Broly0, via Wikimedia Commons

Japanese Barberry

Prevention	
-Plant native species in areas without presence to fill space -Clean gear to prevent the spread of seeds -Do not transplant, purchase or plant from seed since many may find its ornamental appearance appealing	
Eradication/Containment depending on the infestation size	**Effective Herbicide**
-Mechanical controls; pulling, digging, cutting, burning (wear gloves if pulling there are thorns) Repeated cuttings or mowings of mature plants and seedlings on a monthly cycle will be effective at stunting plant and inhibiting seed production. Can be done any time of year but before flowering is best to prevent seeding out. -Where chemical controls are restricted or not suitable, burning methods work well, specifically two burn treatments, one in early spring before leaf out and the second in mid-summer. -Maximum chemical control can be achieved from July-September with foliar spray when there is maximum foliage on the leaves and the plant transports the chemical down to its roots, aiding in the killing of the plant. -Cut stump & herbicide; cut the plant 1 inch from ground and immediately apply herbicide using sponge, paintbrush or spray bottle	-Glyphosate can be applied to stumps immediately after cutting stumps. Roundup's "poison ivy killer" works well. -Glyphosate works well for foliar spraying too. Glyphosate is nonselective however so take care to not spray beneficial plants nearby.

Japanese Barberry Photos

Figure 9: Alpsdake, via Wikimedia Commons

Figure 10: CC BY-SA 4.0, via Wikimedia Commons

Figure11: R. A. Nonenmacher, via Wikimedia Commons

Figure 12: Sheila Sund from Salem, United States, via Wikimedia Commons

Figure 13: Sage Ross, via Wikimedia Commons

Japanese Knotweed

Prevention	
-Clean gear and responsibly source fill dirt as seeds and root fragments can be present -Spread through seeds occurs easily when mowed such as during routine roadside mowing. Don't mow it if it is seeding out already.	
Eradication/Containment depending on the infestation size	**Effective Herbicide**
-Manual control NOT effective due to substantial root system. Very aggressive. -Herbicide is most effective, specifically foliar herbicide solutions. Apply PRIOR to seed formation in early summer and in fall, retreat as needed. For areas near water, DO NOT use triclopyr or picloram.	-Effective herbicides include triclopyr, glyphosate, imazapyr and picloram used separately or together. Do NOT use triclopyr or picloram in wetlands or near water. -For cut stem treatment; IMMEDIATELY apply triclopyr or glyphosate herbicide solution to the cut stems -Re-treat resprouts and new seedlings with glyphosate in October or November when non-target species are dormant -Stem injection of glyphosate solution using specialized equipment is a newer but effective treatment method after cutting. The herbicide is absorbed into the rhizomes, killing it from the roots which is how it mainly spreads. Can be done at any time throughout the growing season and reduces effects on surrounding vegetation. -For well established populations multiple treatments will be necessary over subsequent years.

Japanese Knotweed Photos

Figure 14: W.carter, via Wikimedia Commons

Figure 15: Awinch1001, via Wikimedia Commons

Figure 16: Acabashi, via Wikimedia Commons

Oriental Bittersweet

Prevention	
-Clean gear to prevent the spread of seeds	
Eradication/Containment depending on the infestation size	**Effective Herbicide**
-Mechanical control; helps control small areas such as individual trees that are impacted. Will not be feasible for large infestations. -Repeated hand pulling can be effective over time but takes commitment. Seedlings can be easily pulled during monitoring of an area, larger plants are more difficult. -Cutting can exhaust the plant's energy reserves but only if done weekly, if only mowed or cut three times a season, it will stimulate resprouting and worsen the infestation. -Prescribed burning is NOT advised for multiple reasons. Burning can enhance Bittersweet's resprouting and acquisition of nutrients, it also acts as a ladder for the fire to reach the canopy of the trees that they are climbing. -Chemical control is most effective for control. Fall treatment is recommended for minimizing contact with other vegetation. Cut stumps can be applied with ester formulations (various forms of Triclopyr). It is more selective than glyphosate solutions and is usually more effective as well. Foliar spray can also be done once it is fully leafed out in spring all the way to the fall before they lose their leaves. Useful on sites that have larger infestations and little desirable natives. Can be applied with backpack sprayers or spray bottles. Apply at lower wind speeds. (less than 10mph)	- Herbicides containing Triclopyr (make sure its an ester formulation) is used for cut stump treatment and is quite effective. Treat stumps immediately after cutting. -Foliar applications; Triclopyr can be used, specifically the ester spray.

Oriental Bittersweet Photos

Figure 17: Copyright 2015 Tom Potterfield

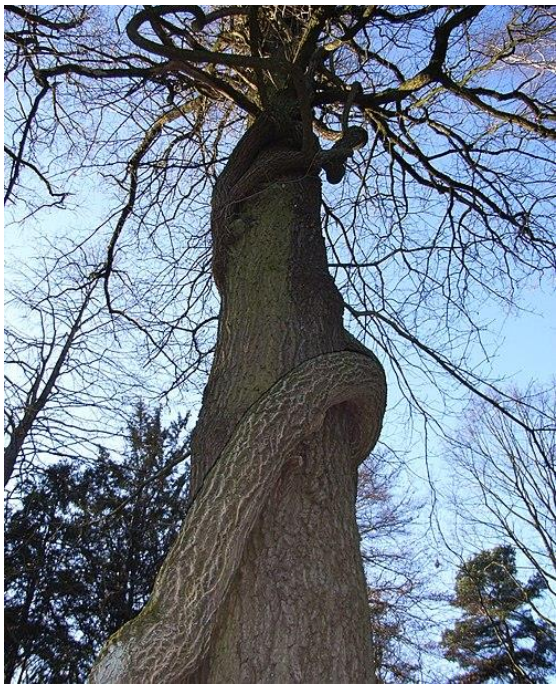

Figure18: Zefram, via Wikimedia Commons

Figure 19: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org, via Wikimedia Commons

Burning Bush

Prevention	
-Plant native species in areas without presence to fill space -Important to not plant it in the first place and get rid of existing plants that are used as ornamentals in gardens etc. Some states have restricted the sale of it at nurseries, including NY state	
Eradication/Containment depending on the infestation size	**Effective Herbicide**
-Mechanical control; seedlings up to 2ft tall can easily be hand pulled. Larger plants can be dug up with hand tools such as spades and shovels or weed wrench. -With mechanical removal, be sure to properly dispose as the stems that are in contact with the ground will resprout roots and begin growing again. -Cutting; Larger plants can be cut and the stump can be ground out and treated with herbicide after cutting. -Foliar and cut stem herbicide treatments are effective	-Cut stem treatment; cut stems close to ground and immediately apply glyphosate or triclopyr. -Foliar; apply solution of glyphosate or triclopyr. Best if done in early summer but can be done as soon as leaves are fully emerged until leaves fall in autumn. -Always read herbicide labels for specific instructions

Burning Bush Photos

Figure 20: Amos Oliver Doyle, via Wikimedia Commons

Figure 21: Mykola Swarnyk, via Wikimedia Commons

Figure 22: Katja Schulz from Washington, D. C., USA, via Wikimedia Commons

Garlic Mustard

Prevention	
-Plant native species in areas without presence to fill space -Clean gear to prevent the spread of seeds	
Eradication/Containment depending on the infestation size	**Effective Herbicide**
-Make sure to accurately identify before eradicating since there are other woodland mustard plants that are native. -Pulling; for new and small infestations hand pulling can be useful before seed dispersal, easy to pull -Cutting; Cut before flowers have opened, if plants have budded, bag it and dispose in landfill. If not completely removed, plant will regrow form any remaining parts and will produce seeds. Repeat cutting each year until seed bank is exhausted. -Burning; annual prescribed burns in spring or fall can help eliminate the plant. -Herbicide; foliar spray in fall or very early spring. Only do in early spring if native plants are still dormant.	-Foliar spray; glyphosate to individual plants -Or, for large stands in low quality areas, when non-target vegetation is dormant, apply Dicamba which is selective for broadleaf plants.

Garlic Mustard Photos

Figure 23: Ryan Hodnett, via Wikimedia Commons

Figure 24: Sannse, via Wikimedia Commons

Figure 25: Katja Schulz from Washington, D. C., USA, via Wikimedia Commons

Figure 26: Katja Schulz from Washington, D. C., USA, via Wikimedia Commons

Spotted Knapweed

Prevention
-Plant native species in areas without presence to fill space -Clean gear to prevent the spread of seeds -Seeds can be in hay, seed or gravel so its important to know the source of these. -Mowing allows them to be easily dispersed if they are seeding out at the time of mowing, try to mow before they flower. --Facts: Seeds are main form of dispersal. It is a tap-rooted, short-lived perennial -Releases chemical into soil which inhibits growth of nearby plants

Eradication/Containment depending on the infestation size	Effective Herbicide
-Hand pulling; effective for small infestations if done before seeding out occurs. Remove entire taproot and crown to prevent regrowth. USE GLOVES since it will irritate skin. -Grazing; long term grazing by sheep, goats or cattle can be successful in controlling the plant. Repeat year after year until seed bank is exhausted. -Most effective control for large infestations is combined approach using bioagents, mechanical removal and herbicides.	-Application of herbicide containing aminopyralid. Apply in spring before plant flowers. Applying 2, 4-D to rosettes in the fall or early spring also is effective. -Can persist in area and harm beneficial or desired plants nearby so be mindful when applying.

Spotted Knapweed Photos

Figure 27: Matt Lavin from Bozeman, Montana, USA, via Wikimedia Commons

Figure 28: Matt Lavin from Bozeman, Montana, USA, via Wikimedia Commons

Common Buckthorn

Prevention	
-Plant native species in areas without presence to fill space	
Eradication/Containment depending on the infestation size	**Effective Herbicide**
-Prescribed burn; If in an area that's suitable to burn, it can be burned preferably early spring when it first leafs out (April-May). Will kill seedlings and can help control large stands if reburned for 5-6 years to make sure all regrowth is killed. -Cut or girdle when burning is not feasible. Cut suckers that regrow. -Cut stumps can be treated with herbicide. -Mowing, excavating, cutting and burning. Repeated mowing and cutting can slow the spread and aggressiveness of them. When removed, quickly replace area with native plants as Buckthorn plants will try to regrow in the devoid area through seeds.	-Treat cut stumps immediately after cutting with Trimec. Roundup can be used as an alternative but first option is preferred. Can be applied with hand sprayer or sponge applicator. Cutting and stump treatment is best if done in fall. --Triclopyr amine for cut stump -Glyphosate for cut stump -Triclopyr ester for cut stump or basal bark treatment

Common Buckthorn Photos

Figure 29: Matt Lavin from Bozeman, Montana, USA, via Wikimedia Commons

Figure 30: Ryan Hodnett, via Wikimedia Commons

Figure 41: Ryan Hodnett, Wikimedia Commons

Extra Info

-Weed Wrenches can assist in manual removal of many invasives if they are too hard to pull by hand or have thorns etc.

-Wear leather gloves when handling sharp, thorny, or chemically irritating plants.

-Hand or backpack sprayers can be used for foliar and cut stump applications. Sponges and paintbrushes can be used for cut stump treatments.

Local Professional Assistance

These are organizations that you can reach out to for specific advice on your project or land management.

Capital Region PRISM Contact Information
(Partnership for Regional Invasive Species Management)
capitalregionprism@cornell.edu
518.885.8995 (ext. 2218)

DEC Invasive Species Department
DLF, Bureau of Invasive Species and Ecosystem Health
625 Broadway
Albany, NY 12233
Phone: **518-402-9425**
isinfo@dec.ny.gov

USDA Soil and Water for Washington County NY
District manager email: corrina.aldrich@ny.nacdnet.net
Washington County SWCD, USDA Service Center, 2530 St Rt 40, Greenwich, NY 12834
Phone: 518-692-9940 ext.5

USDA Soil and Water for Rensselaer County NY
USDA Service Center
1612 NY-7, Troy, NY 12180
Phone: (518) 271-1740 Extension 3
District manager email: Megan.Myers.RenscoSWCD@gmail.com

References

-Missouri Department of Conservation: https://mdc.mo.gov/trees-plants/invasive-plants

-West Viginia University in collaboration with the USDA: https://efotg.sc.egov.usda.gov/references/public/WV/JAPANESEBARBERRYFACTSHEETWVUCES2015.pdf

-Ecological Landscape Alliance: https://www.ecolandscaping.org/11/landscape-challenges/invasive-plants/japanese-barberry-exotic-invasive-plant-fact-sheet/

-Michigan Department of Natural Resources: https://mnfi.anr.msu.edu/invasive-species/OrientalBittersweetBCP.pdf

-NRCS: https://efotg.sc.egov.usda.gov/api/CPSFile/21638/314_VT_OTH_Brush_Management-Burning_Bush_