Brush Management– Invasive Plant Control
Barberries – *Berbis sp.*

Conservation Practice Job Sheet *NH-314*

Japanese Barberry (*Berberis thunbergii)*

Common Barberry (***Berberis vulgaris)***

Barberries
Japanese and common barberries are native to Eurasia. Japanese barberry, the more common species, poses a significant threat to natural areas due to its popularity as a landscape shrub, ability to tolerate full shade, and the dispersal of its prolific seeds by birds. Common barberry is found sporadically in New England, usually establishing in pastures, open-canopied forests, and sometimes along roads.

Japanese barberry forms dense stands in natural habitats including woodlands, wetlands, and pastures, and alters soil pH, nitrogen levels, and biological activity in the soil. Reproduction is primarily through prolific seeds (high germination rate) although there are also reports of sprouting from roots as well as vegetative layering. Seeds are spread by birds and mammals.

Barberries generally leaf-out earlier and retain their leaves longer than many native shrubs. This trait, shared by many invasive shrubs, gives them a competitive advantage over native plants but also allows landowners to easily locate the invasive shrubs and determine their extent on a property.

Description
The barberries are compact, spiny shrubs that commonly grow from two to three feet tall but may reach eight feet with yellow-colored inner bark. Japanese barberry has alternate and entire (smooth margins) leaves with small (<1/2" wide, 6 petals) yellow flowers growing alone or in umbels (flower stems growing from single point) with single spines.

Common barberry has alternate leaves with bristle-toothed margins and spines are typically in groups of three. It has small yellow flowers in a raceme (branching off a main flower stalk). See pictures. The bright red berries persist after leaf off into winter.

Similar Natives
There are no native barberries in New England.

Control
As with all invasive species, barberry is most effectively controlled by recognizing their appearance early and removing isolated plants before they begin to produce seed.

Manual, mechanical and chemical methods are all useful to varying degrees in controlling barberry.

Removing or killing plants will provide increased light at the site which may lead to a surge of seedlings in the following year. Prepare to monitor and control these outbreaks.

Biological Control
There are no known biological controls of barberry.

Mechanical Control
Mechanical controls include grubbing or pulling seedlings and mature shrubs, and repeated clipping of shrubs. Repeated mowing or cutting will control the spread of Japanese barberry but will not eradicate it. Stems should be cut at least once per growing season as close to ground level as possible. Hand-cutting of established clumps is difficult and time consuming due to the long arching stems and prolific thorns. Grubbing or pulling by hand (using a Weed Wrench or a similar tool) is appropriate for small populations or where herbicides cannot be used. Barberry has shallow roots so small plants may be pulled relatively easily when the soil is moist. Because barberry can re-sprout from root fragments remaining in soil, thorough removal of root portions is important. Manual control works well but may need to be combined with chemical in large or persistent infestations.

Because disturbed, open soil can support rapid re-invasion, managers must monitor their efforts at least once per year and repeat control measures as needed. Limit soil disturbance whenever possible. Winter clipping should be avoided as it encourages vigorous re-sprouting.

Prescribed Burning
There is little information about the efficacy of burns.

Chemical Control
CAUTION: ALWAYS READ THE ENTIRE HERBICIDE LABEL. HERBICIDES ARE REGULATED AND MAY ONLY BE USED UNDER SPECIFIC CONDITIONS. CONTACT YOUR STATE DEPARTMENT OF AGRICULTURE FOR USE REQUIREMENTS, RESTRICTIONS OR RECOMMENDATIONS.

Chemical control methods are best done during the fall when most native plants are dormant yet invasive plants are still actively growing. This lessens the risk of affecting non-target plants. The barberry's green leaves will provide easy recognition and allow for a thorough treatment at this time. Winter application of chemicals has proven to be successful as well, and further lessens the risk of damaging non-target species.

Glyphosate (brand names Roundup, and for use near waterbodies, Rodeo) is a nonselective herbicide which kills both grasses and broad-leaved plants while triclopyr (brand names Garlon, Pathfinder, and others) is a selective herbicide that kills broad-leaved plants but does little or no harm to grasses.

Cut Stump Treatments: For 'cut stump' treatments, horizontally cut the stem near the ground. Leaving some stem will allow another cut and application if there is sprouting. Apply a 20-25% solution of glyphosate or triclopyr and water to the stump being sure to cover the outer, top 20% of the cut stem[1, 2, 3]. Herbicide must be applied immediately following the cutting. This treatment is best applied late in the growing season when the plant is transporting nutrients to its root system (August-October).

Foliar Treatment: For foliar treatments a 2% solution of glyphosate and water can be used[1, 3]. The treatment should be applied to the foliage late in the growing season but can be applied early in the season to minimize non-target impacts. Do not cut down treated plants for at least a full growing season.

Basal Bark Method: This method is effective throughout the year as long as snow cover does not prevent spraying to the ground level. Apply a mixture of 25% triclopyr and 75% horticultural oil to the basal parts of the shrub to a height of 12-15 inches from the ground[1, 3]. Be sure to treat entire circumference of the stem in a band at least 12 inches wide. Thorough wetting is necessary for good control; spray until run-off is noticeable at the ground line. Do not apply to bark that's wet from heavy dews and rain.

[1] – From TNC ESA – Buckthorns
[2] - Wisconsin DNR Control Manual
[3] – Alien Plant Invaders Fact Sheets

Important Note
Mention of specific pesticide products in this document does not constitute an endorsement. These products are mentioned specifically in control literature used to create this document.

Disposal
Small, pulled shrubs should be hung in trees to prevent re-rooting. Larger, pulled shrubs may be piled or piled and burned, roots up, to prevent re-

establishment. Cut stems may be piled or piled and burned. If chipping, do not remove material from the site as barberry will spread by seeds.

Information and Recommendations compiled from:

- The Nature Conservancy - Fact Sheets (and references therein)
- Invasive Plant Atlas of New England (IPANE)
- CT NRCS Invasive Species ID Sheets
- Wisconsin Manual of Control Recommendations for Ecologically Invasive Plants (DNR)
- Tennessee Exotic Plant Management Manual
- Alien Plant Invaders of Natural Areas (NPS)