

Japanese Barberry

(*Berberis thunbergii*)

Distribution in Nova Scotia:

Throughout the province

Description: Japanese barberry is a deciduous shrub in the barberry family (Berberidaceae). This shrub has small, oval, spoon-shaped leaves with smooth edges. It has arching branches with single spines at each node. Small flowers are produced at each node in 2-4 clusters in spring (April to May) (Photo 2A). These flowers have six yellow petals and six yellow sepals that resemble petals. The flowers produce red, oblong-shaped fruit in late summer to fall (Photo 4). Some cultivars have chartreuse or burgundy leaves. Japanese barberry resembles the common barberry (*Berberis vulgaris*), another invasive species. Common barberry can be distinguished from Japanese barberry by its three spines per node, finely serrated leaf margins, and a raceme inflorescence (Photo 2B).

Habitat and Impacts: Japanese barberry is well adapted to various environments, thriving in both direct sun and dense shade. It is commonly found along forest edges, roadsides, stream banks, old fields, and forests. This species can outcompete native plants, forming dense thickets and reducing biodiversity. Japanese barberry thickets also create the ideal microclimate for black-legged ticks (*Ixodes scapularis*). Research in the eastern USA indicates that areas with dense Japanese barberry thickets have more black-legged ticks than habitats where barberry is absent. This increase in black-legged ticks could potentially increase the number of Lyme disease cases in humans, pets, or livestock.

Pathways of Spread: Japanese barberry is often introduced as an ornamental garden plant, and cultivars of this species are a popular shrub sold at nurseries. Japanese barberry can escape into natural areas through seed dispersal and vegetative growth. Plants can spread via underground clonal shoots and branch tips, which root when they touch the ground. The plant's berries remain on the stems into winter and are eaten by birds, which then disperse the seeds to new areas.



Photo 1. A dense thicket of Japanese barberry that escaped cultivation.



Photo 2. A) Japanese barberry flower and B) common barberry inflorescence.

Management: Japanese barberry is a prolific seed producer, and management should focus on reducing seed production and dispersal. Japanese barberry plants growing in direct sun produce more seeds on average than shaded plants and should be the initial focus for control. Repeated treatments will be needed, and sites should be monitored for regrowth after each treatment. Failing to do so will result in ineffective control. Due to the thorns, personal protective equipment such as gloves and eyewear should be worn when managing this plant species.

- Cutting/Mowing -

Cutting or mowing can help limit the spread of Japanese barberry but will not eliminate the plants. Japanese barberry vigorously resprouts from the root crown after it is cut. The effectiveness of this method improves if an herbicide is applied after cutting.



Photo 3. An Extractigator being used to remove an invasive shrub.

- Pulling/Digging -

Due to its relatively shallow roots compared to other invasive shrubs, pulling/digging is a very effective control method for Japanese barberry. This method works best for smaller thickets – it can be used on larger infestations but is labour-intensive. Pulling/digging is easiest when the soil is moist. The plant can resprout if parts of the root crown remain, so remove as much of the root crown and roots as possible. When removing seedlings or small plants, loosen the soil around the plant and pull steadily and slowly. Larger plants will require a spade or a lever-based weed remover tool such as an Extractigator, to remove the plant (Photo 3). Once removed, the soil should be thoroughly tamped down and covered with leaves to minimize disturbance.

- Herbicides -

Herbicides are only recommended if other management methods are ineffective or impractical for the site. Herbicides must be applied in accordance with label directions and all applicable regulations. Avoid using herbicides near water or ecologically sensitive areas. For more information about pesticide regulations in Nova Scotia, please visit

<https://novascotia.ca/nse/pests/faqs.asp>

- Herbicides (Cont'd) -

Cut surface treatments are the most effective method for applying herbicide to control Japanese barberry. This method also reduces the amount of herbicide needed. A systemic herbicide (one that travels through the plant's vascular system) such as glyphosate should be applied directly to cut stumps shortly after cutting. Foliar spray can also be used effectively in dense thickets. However, foliar spray requires more herbicide and will also kill nearby non-target species. It is recommended to apply herbicide later in the season (July to September). The herbicide is ineffective if applied in spring when sap flows upward from the roots. Once treated, plants may resprout and should be monitored for at least a year. New stems should be re-treated according to the herbicide label.

Important! Japanese barberry thickets are often infested with high densities of black-legged ticks, which are carriers of Lyme disease. When managing this species, wear tick-repellent, long-sleeved shirts, and pants. Don't forget to complete a tick check afterward, immediately wash your clothes, and put them through a dryer cycle to kill any unnoticed ticks.

- Not Recommended -

Prescribed burning is not recommended for Japanese barberry control due to its ineffectiveness, and associated wildfire hazards. While fire will kill young seedlings and damage older plants, the plants will regrow if the root crown remains intact.

Tip! It is important to remove Japanese barberry before it develops fruit. This helps reduce the chances of further spread and makes disposal easier!



Photo 4. Red, oblong-shaped fruit of Japanese barberry.



Disposal: Japanese barberry should not be placed in home composters for disposal. This will lead to local spread. Home composters do not reach the temperature required to kill the plant material. Instead, Japanese barberry plant material should be cut into small pieces, placed in black contractor-grade garbage bags, double bagged, and left in the sun for several weeks to solarize. Japanese barberry plant material without fruits can be piled on an impermeable surface such as asphalt or a tarp and left to dry in direct sunlight for several weeks. Once the plant material is no longer viable and fully dried, call your local waste management facility for directions on collection and disposal. Let them know if the plant material contains seeds or soil, as additional measures may be required to prevent further spread. Contact information for your local waste management facility can be found at the following website: <https://novascotia.ca/nse/waste/about.asp>. Dried plant material without fruit can be burned on site to reduce the risk of spread. Ensure to follow local burning regulations and restrictions. Details on restrictions can be found at: <https://novascotia.ca/burnsafe/>

To learn more about invasive species and how to prevent their spread, visit the Nova Scotia Invasive Species Councils website at: <https://nsinvasives.ca>

Prepared by:

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Reference & Further Reading:

Mitchell, Emily and Simkovic, Vicki. 2024. Japanese Barberry (*Berberis thunbergii*): Best Management Practices in Ontario. Ontario Invasive Plant Council.

Report Observations!



Observations of Japanese barberry should be reported on **iNaturalist**.

Uploading to **iNaturalist** is free and easy to do! Download the app on your mobile device, create an account, take photos of the organism, and upload the observation.



If you prefer not to use iNaturalist, observations can be reported directly to the **NSISC** website.

