Rush Broom

Spartium junceum
Fabaceae

Class A Noxious Weed
Control Required

Legal Status in King County: Class A Noxious Weed (non-native species designated for control by Washington State Law RCW 17.10 and by the King County Noxious Weed Control Board). The King County Noxious Weed Control Board requires property owners to eradicate rush broom on public and private lands throughout the county. Eradication is legally defined as the elimination of a noxious weed within an area of infestation. State quarantine laws prohibit transporting, buying, selling or offering rush broom for sale or distributing plants, plant parts or seeds.

BACKGROUND INFORMATION

Impacts and History

- Rush broom can displace native and beneficial plants, causing considerable loss of grassland and open forest habitat.
- Seeds and other plant parts are toxic to humans, horses, and livestock.
- Could damage western Washington and Oregon prairies by changing the chemical composition of the soil and shading out prairie species.
- Rush broom is the most drought tolerant of the brooms.
- Dense stands can impede the movement of wildlife.
- Potential fire hazard; may increase the intensity of grassland and forest fires.
- Often found with Scotch broom, a close relative.
- Native to the Mediterranean region of Europe. Rush broom was introduced as a garden ornamental in the 1850's and then was planted along mountain highways in southern California in the 1930's. It has since naturalized in California.

Rush broom stems

Rush broom infestation in California

Description


Rush broom stems with flowers

- Yellow-flowered, evergreen shrub to small tree in the legume family. Grows 10 to 15 feet tall.
- Stems are bright green, erect, rounded (rush like), finely ribbed, and hollow.
- Flowers are fragrant, yellow, pea-like, about one inch long and grow in loose clusters at stem tips.
- Leaves are oval, small (less than ½ inch), deciduous and grow singly. Often gone by flowering time.
- Seeds pods are densely covered with long hairs and only slightly flattened.
- Distinguished from Scotch broom by stems that are round in cross-section (not deeply ridged and hard like Scotch broom), flowers at stem tips (instead of along the stem in leaf axils), seed pods that are hairy all over and not as flat, and later bloom time.

Habitat

- Tolerant of a wide range of conditions but grows best in dry, well-drained soils in full sun.
- Seedlings can establish under the canopy of mature plants in full shade.
- Tolerant of rocky or sandy, low-nutrient soils and low moisture conditions.
- Rush broom typically found in disturbed areas, roadsides, trails, parks, and vacant lots.

Reproduction & Spread


Rush broom with flowers and seed pods.

- Reproduces primarily by seed
- Flowers from late July to October.
- Seeds fall near the plant and are moved by human activity, rain and erosion.
- Seeds are further dispersed by natural forces such as erosion and flowing water, and by human disturbance such as road work and other activities.
- A single plant can produce over 10,000 seeds per year.
- Seeds can remain viable in soil for at least 5 years, probably much longer.

Local Distribution

Rush broom has limited distribution in King County and in Washington State as a whole.. It is predominantly found along roadsides, in disturbed areas, trails, parks, and in vacant lots. Also found in ornamental landscapes and home gardens where it has been planted intentionally.

CONTROL INFORMATION

Little research has been done on the control of Rush broom, therefore the recommendation in this section are based on what has been successful for other closely related brooms (Scotch broom & French broom).

Integrated Pest Management

- The preferred approach for weed control is Integrated Pest Management (IPM). IPM involves selecting from a range of possible control methods to match the management requirements of each specific site. The goal is to maximize effective control and to minimize negative environmental, economic and social impacts.
- Use a multifaceted and adaptive approach. Select control methods which reflect the available time, funding, and labor of the participants, the land use goals, and the values of the community and landowners. Management will require dedication over a number of years, and should allow for flexibility in method as appropriate.

Planning Considerations

- Survey area for weeds, set priorities and select best control method(s) for the site conditions and regulatory compliance issues **(refer to the King County Noxious Weed Regulatory Guidelines)**.
- Think about the long-term health of the site. Re-vegetation with native plants adapted to the site conditions will reduce re-infestation by Rush broom and other weeds. However, re-vegetation can limit control options since care needs to be taken not to damage young plants. Make sure re-vegetation plan is compatible with follow-up broom control activities.
- Always consider the long-term goals for the site and the community.
- Sites that have other beneficial plants present should be controlled at times when the least amount of damage will be done to the desirable plants.
- Small infestations can be effectively hand-pulled, dug up or cut at the base. Isolated plants should be carefully removed in order to stop them from infesting a larger area.
- For larger infestations, the strategy will depend on the land use of the site. In pastures, good grazing practices and management of grass and forage species will greatly improve control of Rush broom. Specific suggestions are given in the Best Management section.
- Generally work first in least infested areas, moving towards more heavily infested areas.
- Minimize soil disturbance to avoid creating more opportunities for seed germination.
- Be adaptive: If the Rush broom doesn't respond to one method, try a different method, change the timing or modify the technique.
- Be persistent. Any plants that go to seed will prolong the infestation problem. When plants become mature, they need to be removed or controlled before they go to seed. Most infestations require control work several times a year.
- Combine control methods.
- Pay attention to seasonal timing and to unexpected results. Different methods will bring variable results depending on site conditions, soil, water, competing vegetation, and site disturbance.

Early Detection and Prevention

- Seedlings appear in fall or spring, mature plants flower between late July and October.
- Small populations can be pulled or dug up, but the site should be monitored for several years for plants growing from root fragments and from the seed bank.
- After the control is complete, re-vegetate the site with non-invasive vegetation to compete with broom seedlings, but make sure re-vegetation plan is compatible with follow-up weed control activities.
- Prevent plants from spreading from existing populations by washing vehicles, boots and animals that have been in infested areas.
- If animals are being moved from an infested pasture to an un-infested pasture, if possible first hold them for at least five days so that any seeds pass out of the animals' digestive system.
- Do not purchase or introduce this invasive plant into your yard or landscape. According to state quarantine laws it is illegal to buy or sell Rush broom, or any of its cultivars.

Manual

- When digging or pulling, make sure to remove as much root as possible so the plant will not re-sprout. This method can be highly labor-intensive and to be fully effective all mature plants in the site need to be pulled so that no new seeds are produced. Both methods are significantly easier when soils are moist.
- Pulling of medium to large plants is much easier with a **Weed Wrench™**, a solid steel tool for pulling woody plants. Several wrenches are available to borrow from the King County Noxious Weed Control Program (206-296-0290). Weed wrenches may be purchased from The Weed Wrench Company at 877-484-4177 or http://www.weedwrench.com.
- Pulling disturbs the soil and creates ideal conditions for broom seed germination so sites will need to be carefully monitored for new growth.
- Expect the level of control work to be intensive for the first several years due to the seed bank, soil disturbance that occurs when pulling or digging and regrowth of plants from the crown if not completely dug up.
- **Do not put plants with seed pods in compost or yard waste**. Plants with seed pods should be disposed of with trash to avoid spreading this Class A noxious weed.

Mechanical

- Cutting Rush broom is not effective for long term control without combining with other methods.
- Mechanical control methods can be used to temporarily suppress larger infestations with either manually operated brush cutting tools or tractor mounted mowers.
- Plants should be cut between flowering and seed pod maturation to prevent seed spread.
- Mowing in the spring followed by a fall herbicide application, once plants have re-grown, can be an effective control method.

- Bulldozing is not a recommended control method. It tends to spread seeds on a site and removes all other vegetation that was competing with the broom.

Biological

- Several biological control insects have been released in Washington State including Rush broom bruchid (*Bruchidius villosus*), a beetle whose larvae feed on developing seeds, and Rush broom seed weevils (*Exapion fuscirostre* or *Apion fuscirostre*). Results are still tentative for these control agents.
- Because Rush broom is a Class A noxious weed in Washington and very limited in distribution at this time, biological control is not a viable option for Rush broom in King County. State Law requires eradication of Class A weeds and this is not obtainable with biological control.

Chemical

- Herbicides should only be applied at the rates and for the site conditions and/or land usage specified on the label. **Follow all label directions**.
- For your personal safety, at a minimum, wear gloves, long sleeves and pants, closed toe shoes, and appropriate eye protection. Follow label directions for any additional personal protection equipment needed.
- For herbicide use in critical areas and their buffers, certain restrictions apply depending on the site and jurisdiction. In unincorporated King County, refer to the **King County Noxious Weed Regulatory Guidelines** for a summary of current restrictions and regulatory compliance issues. Elsewhere, check with the local jurisdiction.
- For control of large infestations, herbicide use may be necessary.
- The best time to use foliar spray on broom is typically in the spring and again in the fall when plants are actively growing. Basal bark and other non-foliar treatments can be performed any time of the year depending on the herbicide used.
- **Infested areas should not be mowed or cut after an herbicide application until herbicide has had a chance to move throughout the plant.**
- Re-treatment the following year is necessary to control late-germinating plants. Continue to monitor for new plants for at least ten years after the initial treatment and following any disturbance to the soil such as tilling or construction.

Application Methods

- Foliar spraying requires a thorough wetting of the actively growing plant parts.
- Basal bark and cut stump application are also effective with triclopyr ester and 2,4-D, but these are fairly labor-intensive methods. Wiping concentrated herbicide on a recently cut stump (within moments of cutting) involves more time than foliar spraying but is more target-specific and will damage fewer nearby plants.
- There are tractor-driven booms that wipe on herbicide. This may be particularly effective on young (2 year old) plants that can not be controlled by cutting due to resprouting but are high enough above other plants to allow wiping only the broom plants.

Specific Herbicide Information

Glyphosate (e.g. Aquamaster, Roundup): can effectively control Scotch broom and is likely to be effective on Rush broom as well. Apply to actively growing plants in spring. Addition of a surfactant will improve results. Glyphosate is non-selective and will damage grass and other vegetation it comes into contact with. Treatment with glyphosate needs to be combined with effective re-vegetation of the site to prevent broom seedlings from re-infesting the area. Re-treatment the following year is necessary to control late-germinating plants.

Triclopyr (e.g. Garlon 3A,Garlon 4, Crossbow): apply any time Rush broom is actively growing. Foliage must be thoroughly wet. With Garlon 3A it is important to use a high volume of water (see PNW Weed Management Handbook for more information). Will not injure most grasses. Retaining the grass will help reduce the germination of Rush broom seeds in the soil. Garlon 4 and Crossbow can be used for basal bark applications any time of year. **NOTE: Make sure to follow all grazing and harvesting restrictions described on the product label. Also, certain additional restrictions apply for products containing Triclopyr BEE (e. g. Garlon 4, Crossbow). Refer to the King County Noxious Weed Regulatory Guidelines for more details.**

The mention of a specific product brand name in this document is not, and should not be construed as an endorsement or as a recommendation for the use of that product. Chemical control options may differ for private, commercial and government agency users. **For questions about herbicide use, contact the King County Noxious Weed Control Program at 206-296-0290.**

SUMMARY OF BEST MANAGEMENT PRACTICES

Small Infestations in Native and/or Desirable Vegetation

- Dig or pull up plants by hand when soil is moist (fall through spring). This method is very effective on seedlings and smaller plants up to 1" in diameter.
- Replace any divots created when removing the plants to lessen the amount of disturbed soil.
- Apply appropriate herbicide by spot spraying to minimize off target injury.
- Monitor site throughout growing season and remove any new plants.
- If using an herbicide in a grassy area, use a selective herbicide to avoid injury to the grass.
- Do not leave bare soil, use heavy mulch or replant to help compete with broom seedlings. This is especially important if small evergreen trees are being grown.
- Shade makes broom grow more slowly, so competitive plantings will improve long term management of broom populations.

Large Infestations in Grassy Areas

- Mowing multiple times per season for several seasons can keep broom from setting seed, but is unlikely to kill the plants..
- Large infestations can be controlled with herbicides. (See the Chemical section of this BMP).

- Smaller amounts of herbicide will be needed if plants are first cut or mowed as there will be less plant matter to treat. However, plants need to be actively growing when sprayed.
- Eradication of Rush broom with a single herbicide application is unlikely. Typically it takes several applications, over the course of a few years, to reduce a large infestation to a level that is manageable by other means.
- Suppression of large infestations of broom with a selective herbicide can greatly increase grass production, which in turn increases the suppression of the broom.
- Promote healthy grassy areas by seeding and fertilizing. Use a mix of grass and clover species to improve resistance to broom. Fertilize according to the soil needs.
- If utilizing biological control, plants need to be checked to make sure no seeds are allowed to disperse. Because Rush broom is a Class A noxious weed in Washington and very limited in distribution at this time, prevention of seed production is crucial for preventing the movement of this species to more areas of the state.

Control in Riparian Areas

- Additional permits may be required for control of infestations in riparian areas. See Noxious Weed Regulatory Guidelines for more information (http://dnr.metrokc.gov/wlr/lands/weeds/pdf/Noxious_Weeds_Regulatory_Guidelines.pdf).
- When large areas of weeds are removed, the cleared area needs to be replanted with native or non-invasive vegetation and stabilized against erosion. Refer to the King County Surface Water Design Manual for further information about sediment and erosion control practices (call 206-296-6519 or go to http://dnr.metrokc.gov/wlr/Dss/Manual.htm for information).
- Survey area and document extent of infestation.
- Target only the Rush broom, retain all native and beneficial plants.
- Focus on manual removal for small infestations if possible.
- For larger areas where herbicide use is warranted, apply with a wick wiper or spot spray using low pressure and large droplet size or use basal or cut stump methods.
- When large areas of weeds are removed, the cleared area needs to be replanted with native or non-invasive vegetation and stabilized against erosion.
- If a non-selective herbicide is used in grassy areas, the area should be re-seeded to prevent reinvasion by weeds.
- Infested areas will need to incorporate a management plan lasting for several years to control plants germinating from the seed bank.

Control along Road Rights-of-Way

- Pull small infestations if possible.
- Spot spray with glyphosate if weeds are in areas with no desirable grasses.
- If plants are in grassy areas, use a selective broadleaf herbicide; if controlled with a non-selective herbicide, re-seed after control is completed.
- If plants are on a steep slope make sure to re plant with plants of varying root depth to stabilize slopes.

Rush Broom Disposal Methods

- **Do not put plants with seed pods in compost or yard waste**. Seeds are very tough and long-lived. Plants with seed pods should be disposed of with trash or taken to a sanitary landfill to avoid spreading this Class A noxious weed.
- Stems without seeds may be chipped and left on site, burned (after obtaining appropriate permits), placed with yard waste to be recycled at a commercial composting facility, or can be disposed of at a King County transfer station.

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