



King County

Department of Natural Resources and Parks
Water and Land Resources Division
Noxious Weed Control Program
206-296-0290 TTY Relay: 711

BEST MANAGEMENT PRACTICES Evergreen blackberry (*Rubus laciniatus*) and Himalayan blackberry (*Rubus discolor* *syn. Rubus armeniacus*)

Legal Status in King County: Not listed, no legal requirement for controlling obnoxious weeds. The County Weed Board recognizes these plants are invasive and is collecting information and providing education on control. The Board encourages and recommends control and containment of existing populations and discourages new plantings.

BACKGROUND INFORMATION

Impacts and History

- Highly invasive and can be found throughout King County.
- Can be very difficult to control.
- Out competes native understory vegetation and prevents the establishment of desirable native shade intolerant trees such as Pacific Madrone, Douglas Fir and Western White Pine.
- Can limit movement of large animals when forming large impenetrable thickets.

Description

- **Himalayan blackberry** is a robust, sprawling perennial with stems having large stiff thorns.
- Main canes up to 10 feet long with trailing canes reaching up to 40 feet.
- Trailing canes typically take root at the tips.
- Leaves are large, round to oblong and toothed typically come in sets of three (trailing canes) or five (main stems).
- Individual canes can reach a density of 520 canes per square meter.
- Flowers are white to pink about one inch in diameter and borne in clusters of about 5 to 20.
- Develops edible black fruit that clings to the center core when picked.
- **Evergreen blackberry** is a robust trailing evergreen shrub that grows into impenetrable thickets.
- Ribbed reddish stems up to 10 feet in length with large curved thorns.
- Young canes arch as they grow longer that eventually reach the ground rooting at the nodes.
- Palmately compound leaves with 3 to 5 deeply lacerated leaflets.
- Flowers are white to pink about one inch in diameter borne in clusters.
- Develops edible black fruit that clings to the center core when picked.



Himalayan blackberry



© 2005 Virginia Tech
Evergreen blackberry

Habitat

- Blackberry can be found in a myriad of habitats such as vacant lands, pastures, forest plantations, roadsides, creek gullies, river flats, riparian areas, fence lines, and right-of-way corridors.
- Does not grow well in wetland areas, will grow if cane tip roots.

Reproduction and Spread

- Reproduces vegetatively by root and stem fragments, and by seed.
- Plants begin flowering in spring with fruit ripening in midsummer to early august.
- Daughter plants can form where canes touch the ground.
- Seeds can remain viable in the soil for several years.

Local Distribution

Found throughout King County.

CONTROL INFORMATION

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

- Plan your control effort including: 1) surveying of the area thoroughly for blackberry, 2) setting priorities for control, 3) selecting the best control method(s) for the site conditions and regulatory compliance issues and 4) monitoring the success of control and implementing follow up control as necessary.
- In unincorporated King County outside of wetlands, aquatic areas, wildlife network areas and their buffers, a Clearing and Grading permit is not required to clear areas of blackberry if: 1) the annual area to be cleared is less than 7000 square feet or 2) if the clearing is conducted in accordance with an approved Forest Management Plan, Farm Management Plan or Rural Stewardship Plan. Within wetlands, aquatic areas, wildlife network areas and their buffers, Clearing and Grading permits are not required if the area to be cleared is less than 7000 square feet and clearing is conducted in accordance with one of the stewardship plans mentioned above or is removed by hand labor. Clearing in excess of these limits will

require a permit, however there will be no cost for this permit provided control practices defined in this BMP and the King County Noxious Weed Regulatory Guidelines are followed.

- Control practices in critical areas should be selected to minimize soil disturbance. Any disturbed areas need to be stabilized to control erosion and sediment deposition. Refer to the King County Surface Design Manual for further information about sediment and erosion control practices. Minimizing disturbance also avoids creating more opportunities for germination of blackberry and other weeds.
- Generally work first in least infested areas, moving towards more heavily infested areas.
- Ensure habitat protection by targeting only blackberry and preserving all native and beneficial vegetation.

Early Detection and Prevention

- Blackberry is easily identifiable throughout the year.
- Manually control new infestations as early as possible .
- Monitor the control site and remove any plants returning from root fragments

Manual

- Hand pull the stem close to the ground and uproot the root ball. This method is most effective with first year plants.
- Manual control works best after rain or in loose soils where the canes are suppressed because the blackberries are growing in a forest understory.
- Digging up root crowns and major side roots is slow but will control blackberry and is effective on small infestations.
- Using a claw mattock or pulaski/mattock is also effective.
- Recheck work area because large root fragments left can re-sprout.
- If removing dense patches, area should be replanted with native plants and mulched, or reseeded with a suitable grass.
- Hand pulling and the use of hand mechanical tools of up to seven thousand square feet annually is allowable without a permit in unincorporated King County, including all critical areas and buffers.

Mechanical

- Mowing, including the use of riding mowers and tractor mounted mowers, can be very effective in controlling blackberries but also may harm desirable plants present.
- Mowing should not be used where soils are highly susceptible to compaction or erosion, or where soils are very wet.
- Several cuttings a year over several years are necessary to exhaust the roots of their reserve food supply.
- If only one cutting is done per year, cut when the plants begin to flower. If no follow-up is done, the blackberry may re-sprout from the root crown at a greater density, and could overgrow any vegetation planted.

- Cultivation in agricultural areas utilizing cultivation machinery can be effective in controlling blackberry either alone or in conjunction with mowing but is not selective and may require specific sediment and erosion control measures (see Control of Large Infestations/Monocultures).

Biological

Biological control is the deliberate introduction of insects, mammals or other organisms which adversely affect the target weed species. Biological control is generally most effective when used in conjunction with other control techniques. Biological control methods that may assist in blackberry control include the use of goats and chickens as follows:

- Goats and pigs may be effective on clearing or controlling blackberry re-growth from a year to four years old. On mature stands, goats tend to only strip leaves off of the canes. Animals may prefer alternative forage available, so reduce opportunities for selective browsing. Grazing must be continuous or else regrowth will occur. Care needs to be taken to fence off or protect any native or other valuable vegetation. The King Conservation District can provide further information of the use and management of goats for weed control.
- Chickens can potentially decrease the seed bank in blackberry cleared areas by grazing on the seeds.

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.**
- Herbicide specified in these guidelines may be used in accordance with Federal and State Law in critical areas and their buffers with certain restrictions. Refer to the **King County Noxious Weed Regulatory Guidelines** for a summary of current Federal, State and local restrictions and regulatory compliance issues.
- For control of large infestations, herbicide use may be effective, either alone or in combination with mowing. Infested areas should not be mowed until after the herbicide has had a chance to work and weeds are brown and dead.
- For several years following treatment, monitor areas for new plants germinating from the seed bank, or any missed plants.

Specific Herbicide Information

Herbicides are generally described here by the active ingredient. Many commercial formulations are available containing a specific active ingredient. References to product names are as an example only, and other equally, or more effective commercial products may be available.

Glyphosate: can effectively control blackberry. Treatment with glyphosate needs to be combined with effective re-vegetation of the site to prevent re-invasion by undesirable vegetation and to control erosion. Glyphosate is most effective on blackberry in September to October when canes are actively growing and after berries have formed. Fall treatments should be conducted before the first frost.

Selective Broadleaf Herbicides (such as triclopyr, 2,4-D and metsulfuron): most effective when blackberry is growing in a grassy area. Read the label of the product you are using to determine the optimal time to spray. Re-treatment the following year may be necessary to control any returning plants. Continue to monitor for new plants for several years after the initial treatment and following any disturbance to the soil such as tilling or construction. **NOTE: Certain additional restrictions apply for products containing 2,4-D and Triclopyr BEE (e. g. Garlon 4, Crossbow). Refer to the King County Noxious Weed Regulatory Guidelines for more details.**

Selective herbicides that are effective on blackberry include metsulfuron (e.g. Escort, Cimarron, Ally), triclopyr ester (e.g. Garlon 4) or triclopyr amine (e.g. Garlon 3A) and a combination treatment of triclopyr and 2,4-D (e.g. Crossbow).

Metsulfuron should be applied to fully leafed-out blackberry before fall leaf coloration. Good coverage is essential to achieve control.

Triclopyr (amine and ester) and triclopyr + 2,4-D should be applied when actively growing. Foliage must be thoroughly wetted with herbicide.

2,4-D can harm certain grasses, alfalfa, clover and other legumes. The addition of a suitable surfactant may improve the control results.

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

- Properly identify targeted blackberries
- Mark all desirable vegetation around control area, ensuring that no native plants are removed.
- Small infestations of less than 200 square feet can be effectively and relatively easily hand-pulled or dug up. Isolated plants should be removed in order to prevent them from infesting a larger area.

- Cut above ground portion of blackberry with loppers or pruners. Dig up or pull the remaining root ball.
- Pull or dig up the plants when the soil is wet.
- Replace any divots created when removing the plants to lessen the amount of disturbed soil.
- Apply appropriate herbicide with wick wiper or by spot spray to the cut stumps 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.

Large Infestations/Monocultures

- Properly identify invasive blackberries.
- Mark all native vegetation in and around the control area, ensuring that no native plants are removed.
- Mow down the blackberry with weed-eaters, brush mowers or machetes.
- Following mowing, either dig up the root-ball if labor is available or treat re-sprouting blackberry regrowth with an appropriate herbicide (See the Chemical section of this BMP).
- Mechanical cultivation is also an option for controlling invasive blackberries in agricultural areas. After initially mowing down the above ground vegetation, deep cultivation of the land can control root balls if done multiple times. Yearly spot control of returning seedlings or re-growth will likely be necessary.
- For large areas, it may be more cost-effective to apply herbicide to the mature blackberry plants and then mow the dead canes.
- When large dense areas of blackberry are removed, the bare areas created need to be stabilized and re-vegetated with native or non-invasive vegetation to prevent erosion and re-invasion of blackberries and other weeds (refer to the King County Surface Water Design Manual or equivalent for incorporated areas). Ensure that a high standard of blackberry control has been achieved prior to revegetating the site.
- If a non-selective herbicide is used in grassy areas, the area needs to be re-seeded to prevent reinvasion by weeds.
- Infested areas will require follow-up management lasting for several years to control plants re-growing from the seed bank and rhizomes.

Riparian and Aquatic Area Control Issues

- Focus on manual removal for small infestations if possible. Follow procedures listed above.
- For larger areas where herbicide use is warranted, apply with a wick wiper or spot spray using low pressure and large droplet size.
- Blackberry shrubs can be found growing along wetland margins but are typically daughter plants off of a main cane. Control can be achieved by cutting the canes down to the ground. The roots can not withstand the anaerobic soil conditions without the supporting canes.
- Pay particular attention to regulatory compliance issues for aquatic areas described in the King County Noxious Weed Regulatory Guidelines.

Road Rights-of-Way Control Issues

- Manually remove infestations if possible.
- If plants are in grassy areas, use a selective broadleaf herbicide; if controlled with a non-selective herbicide, re-seed after control is completed.
- An effective mowing program can control blackberries along a Right of Way. Any blackberries remaining outside the mowed area will quickly re-invade the cleared areas.
- Spot spray blackberries with glyphosate in areas with no desirable vegetation.

References

Blackberry (*Rubus fruticosus* aggregate.) Retrieved February 1, 2005

<http://www.dpiwe.tas.gov.au/inter.nsf/WebPages/RPIO-4ZW2MF?open#IntegratedManagement>

Controlling Himalayan Blackberry (*Rubus armeniacus* [*R. discolor*, *R. procerus*]) in the Pacific Northwest. The Nature Conservancy. February, 2002

<www.tncweeds.ucdavis.edu/moredocs/rubdis01.pdf>

Rees, N.E., P. Quimby Jr., G. Piper, E. Coombs, C. Turner, N. Spencer and L. Knutson, editors. 1996. Biological Control of Weeds in the West. Western Society of Weed Science.

VT Forestry I.D. Cards - evergreen blackberry Retrieved January 31, 2005

<http://www.cnr.vt.edu/dendro/dendrology/carddetail.cfm?Genus=Rubus&Species=laciniatus>