



Wild Blackberries

Integrated Pest Management for Home Gardeners and Landscape Professionals

Wild blackberries are often found growing as weeds in home landscapes, along roadsides, forestlands, coastlines, riparian areas, brushlands, and disturbed areas (Figure 1). The term blackberry or bramble refers to a group of shrubs and trailing vines in the genus *Rubus*. These plants belong to the rose family (Rosaceae) and are closely related to several economically important crops including apples, pears, peaches, cherries, strawberries, blackberries, and raspberries.

Of the 11 species of *Rubus* that occur in California, 4 are non-native. These include cutleaf blackberry (*Rubus laciniatus*) (Figure 2), elmleaf blackberry (*R. ulmifolius*), Himalayan blackberry (*R. armeniacus*) (Figure 3), and Pennsylvania blackberry (*R. pensilvanicus*). Pennsylvania blackberry is originally from the eastern and central United States and has become naturalized in parts of California. The other 3 are exotic plants which originate from areas within and around Europe, Asia, and North Africa.

Cutleaf blackberry and Himalayan blackberry tend to be the most weedy and problematic of the introduced blackberries. They are often collectively called wild blackberries. Although the remaining *Rubus* species are native, both thimbleberry (*R. parviflorus*) (Figure 4) and California blackberry (*R. ursinus*) (Figure 5) are occasionally considered weeds because of their vigorous growth.

IDENTIFICATION AND BIOLOGY

Blackberries have showy flowers that range in color from pink to white and either occur singly or in clusters at the end of shoots (Figure 6). Each flower is about 1 inch across with 5 petals. The fruits are red to black in color, edible, and tasty when ripe (Figure 7).

Both Himalayan and cutleaf blackberry are evergreen and have 5-angled stems. Himalayan blackberry is easily distinguishable from the other blackberries by its robust thorns and 5 distinct



Figure 1. Blackberries growing along a roadway and encroaching into the home landscape.



Figure 2. Cutleaf blackberry, *Rubus laciniatus*.



Figure 3. Himalayan blackberry, *R. armeniacus*.

Authors:

Scott R. Oneto, UC Cooperative Extension, Central Sierra.

Joseph M. DiTomaso, Emeritus, UC Davis Plant Sciences.

leaflets, each one toothed and usually oval. By comparison, cutleaf blackberry has 5 very deeply dissected leaflets, and California blackberry has only 3 leaflets.

California blackberry can be confused with poison oak since both plants have 3 leaflets. Although they grow in similar habitats, poison oak lacks thorns along the stems and produces whitish fruits instead of the recognizable dark-purple fruit of a blackberry. For more information, see the UC IPM *Pest Notes: Poison Oak*.

Thimbleberry is the only non-vining species of weedy blackberries. It also lacks prickly stems and has a simple leaf with no leaflets. Thimbleberry and California blackberry are deciduous and have rounded stems. See Table 1 for a comparison of the 4 species discussed.

Blackberry plants can live for 25 years or longer, however individual canes only live for 2 years. New canes are produced annually from the root crown, replacing those that die. One-year-old canes are entirely vegetative and only produce leaves. The following year the canes will flower, fruit and die.

Many animals feed on blackberries; consequently, seeds spread easily from one area to another in animal droppings. Blackberry seeds have a hard seed coat and can remain dormant for an extended period. Once seeds germinate and the plants become established, expansion of the thicket is almost entirely a result of vegetative growth. New plants start from crown regrowth, suckers from rhizomes (underground stems), and seeds that germinate in fall and spring. In addition, tips of canes that contact the ground often form roots, creating daughter plants that contribute to the lateral expansion of the plant (Figure 8). Over time a single plant can cover a very large area.

Bumblebees and honey bees are the primary pollinators of wild blackberry flowers. The flowers can be self-pollinated, but cross pollination increases fruit set.

IMPACT

Blackberries can be highly competitive shrubs and vines that grow rapidly and form dense stands. The scrambling habit of Himalayan and the other vining blackberries smother existing plants and inhibit the growth of desirable plants. The tangled mass of thorny stems (Figure 9) blocks access of humans, pets, livestock, wildlife, equipment, and vehicles to recreational areas, pastures, and waterways. In addition, their vigorous growth and accumulation of dead stems can create a dangerous fire hazard.

In urban areas, wild blackberries can serve as a source of food and shelter for rats and other vertebrate pests making it a highly undesirable plant to have growing near a home or structure. In areas where grapes are grown, blackberries can serve as an alternate host for Pierce's disease, a devastating bacterial pathogen that can cause death in grapevines.

Although blackberries can be weedy or harbor unwanted pests, there are also benefits to having them in the landscape. Blackberries provide an important source of food and cover for many birds, mammals, and insects. Likewise, many people enjoy harvesting the berries in late summer when they ripen.

MANAGEMENT

Eradication is not always required or practical. Instead, focus on controlling a wild blackberry population to a desired level.

The two primary methods for managing blackberries are mechanical removal and treatment with herbicides. Blackberries can regenerate from the crown or rhizomes following mowing, hand pulling, tillage, burning, or herbicide treatment. This makes them difficult to control and management measures often require follow-up treatment.



Figure 4. Thimbleberry, *R. parviflorus*.



Figure 5. California blackberry, *R. ursinus*.



Figure 6. Blackberry flowers.



Figure 7. Blackberry fruit.

Mechanical Control

Small infestations can be removed by hand-pulling or mechanical grubbing. A variety of tools can aid in removal including shovels or picks, chains, or specialized tools such as the Brush Grubber or The Uprooter. It is easiest to remove plants in early spring or late fall when the soil is moist and roots can be dislodged. Pulling plants when the soil is dry and hard usually will break off the stems, leaving roots that will vigorously resprout. It is extremely difficult to hand-pull large plants.

For more rural areas, tractors with a brush rake or bucket can be useful for removing the above ground canes, but often leaves pieces of roots that can readily resprout. In some cases, brush removal in late summer, when plants experience moisture stress, can slow their ability to recover. However, using large equipment to clear land creates a perfect environment for resprouting and new seedling establishment, making follow-up control essential.

Using a lawn mower for blackberries results in poor control unless performed repeatedly throughout the growing season. In fire-prone areas, use extreme caution when mowing during spring and summer because of the potential for mowers to spark wildfires. Mowing later in the blackberry plant growing season also can spread seeds.

Despite the lack of long-term control, mowing or chopping can provide short-term canopy reduction that will encourage the growth of desirable grasses and broadleaf plants. Similarly, cutting mature plants with loppers near the base will provide poor control unless you perform it repeatedly throughout the season. Lopping can lead to vigorous resprouting. Lopping or mowing can be combined with an herbicide treatment to increase control.

For home gardeners, using a rototiller repeatedly throughout the year after the canes have been removed can be an effective technique for controlling blackberries. Digging out roots

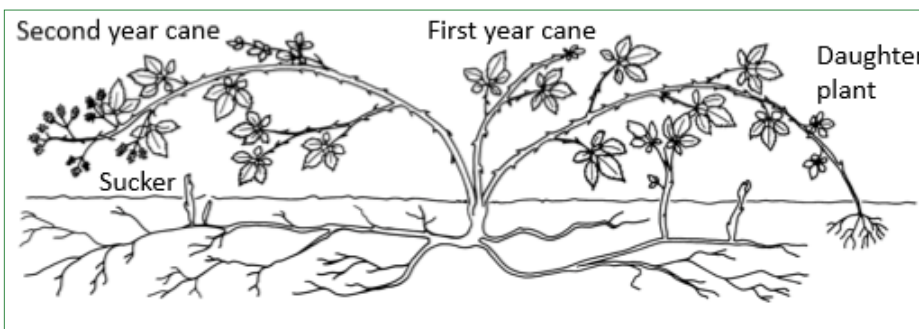


Figure 8. Growth of a blackberry plant from a central crown.

Table 1. Comparison of blackberry species.

Species	Stem Shape	Thorny Stem	Leaf Shape	Native to California
Cutleaf blackberry (<i>R. laciniatus</i>)	5-angled	Yes	5 very deeply lobed leaflets	No
Himalayan blackberry (<i>R. armeniacus</i>)	5-angled	Yes	5 distinct leaflets, toothed & oval	No
Thimbleberry (<i>R. parviflorus</i>)	Rounded	No	Simple leaf	Yes
California blackberry (<i>R. ursinus</i>)	Rounded	Yes	3 leaflets	Yes

(cultivation) only once, however, can fragment the rhizomes and spread the weed.

Cultural Control

By itself, burning is not an effective method for controlling blackberries. Although burning can remove large amounts of debris, in many cases it can increase the population, as it removes competitive vegetation, releases nutrients into the soil, and stimulates the germination of seeds left in the soil.

Cutting the aboveground vegetation of blackberries and allowing it to dry on site, followed by burning, can effectively control resprouting. Burning is more effective if you follow it with an herbicide application, subsequent

burnings, and revegetation using desirable species. It is important to employ a control strategy following a burn, otherwise the blackberry population in subsequent years may become worse than before.

Grazing can provide control in small areas if the grazing pressure is high enough to continually suppress growth. Goats and sheep have been shown to feed vigorously on resprouting shrubs, including blackberries.

Biological Control

Because many *Rubus* species are native or of economic importance, biocontrol isn't a practical control method in California. The blackberry leaf rust fungus (*Phragmidium violaceum*) was discovered in 2005

on the coast of Oregon and has since spread through most of California. It appears to have been accidentally introduced. It partially defoliates Himalayan and cutleaf blackberries and reduces tip rooting. The fungus is native to Europe, the Middle East, and Africa and has been used for years to control native blackberry plants in Australia and New Zealand. It is not an approved biological control agent and has not shown sustained control of Himalayan blackberry over a wide region.

Chemical Control

California residents can use postemergence herbicides containing the active ingredients triclopyr and glyphosate for controlling blackberries. These herbicides can be used either alone or as a combination of glyphosate with triclopyr or glyphosate with imazapyr. Depending on the herbicide, you can apply these as foliar sprays, a cut-stump treatment, or as a basal bark application. Pest control businesses hired by residents are able to use other active ingredients for blackberry control (See REFERENCES).

When using herbicides for wild blackberry control, be sure to prevent them from getting on desirable plants. Because glyphosate is a nonselective compound, it will damage or kill other plants. Triclopyr is a broadleaf herbicide that will not injure grasses but will damage or kill other broadleaf plants. In areas near water, it is important to use the correct formulation of these herbicides. Ester formulations of triclopyr or imazapyr, for example, are not registered for use near water, and most glyphosate formulations cannot be used near water. When possible, it is best to avoid the use of herbicides in and around water to protect water quality.

Home gardeners and professional applicators should always wear appropriate protective equipment as stated on the herbicide label or per California regulations. Always follow directions on the pesticide label for use, storage, and disposal.

Foliar Sprays. Herbicides applied to the canopy of blackberries are often applied when the plants are actively growing from April to September. Herbicides can be applied as a foliar spray using one of two methods. The first is spray-to-wet, where all leaves and stems should glisten following an application. Coverage, however, should not be to the point of runoff. Spray-to-wet applications are made using a backpack or hand sprayer with a flat fan or adjustable spray nozzle.

The other foliar method is a low-volume technique called drizzle application, using a spray gun fitted with an orifice disk (Figure 10). Rather than spraying the entire canopy as in a spray-to-wet treatment, the drizzle application is waved over the canopy in a “drizzle” pattern. It is important to note that the two foliar techniques use the same amount of herbicide on a given plant, it is just the total volume of water as the carrier that varies. In a spray-to-wet application, total spray volume can range between 20–100 gallons of mixed spray solution per acre. For the drizzle technique, the volume is between 2–5 gallons per acre.

For spray-to-wet applications, products containing at least 41% glyphosate as the active ingredient can provide good to excellent control of blackberries when applied at 1.2 to 2 ounces of product per gallon of water (1.0%–1.5% of the total solution). Some products available for use in the home landscape with this concentration of active ingredient are Roundup Pro, FarmWorks Grass & Weed Killer 41% Glyphosate Concentrate, RM43 Total Vegetation Control, Compare-N-Save Grass & Weed Killer Concentrate, and Remuda Full Strength.

Glyphosate products that have a lower concentration of active ingredient, such as Roundup Concentrate (18% active ingredient), will require 2 to 4.5 ounces of product per gallon of water (1.5%–3.5% of the total solution) for effective control. Glyphosate is best applied in late summer or early fall after flowering but before the leaves fall.

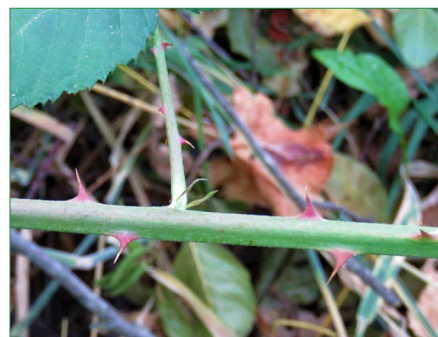


Figure 9. Thorny stems of Himalayan blackberry.



Figure 10. Spray gun used to make a drizzle foliar application.

Triclopyr is available over-the-counter in either amine or ester formulations. Triclopyr ester is more effective on blackberries, since this formulation is more easily absorbed into the foliage and stems. Products containing a minimum of 61% active ingredient of the ester formulation can provide good to excellent control when applied at 1 to 1.2 ounces of product per gallon of water (0.75%–1% of the total solution). One such product with this concentration is Brushtox Brush Killer with Triclopyr. Other less concentrated formulations, such as Crossbow, are also available for licensed professionals.

Mixing triclopyr ester with commercially available seed oils can offer better penetration.

One available product is Hasten-EA modified vegetable oil concentrate. Mix this at 1.25 ounces of product per gallon of herbicide solution (1% of the total solution).

Amine formulations of triclopyr are

available in products such as Bio Advanced Brush Killer Plus, Ortho Brush-B-Gon Poison Ivy and Poison Oak & Brush Killer, and Monterey Brush & Vine Control. The best time to apply triclopyr is late spring or early summer when plants are actively growing. When air temperatures are higher than 80°F, it is better to use glyphosate or the amine formulation of triclopyr, since the ester form is subject to vaporization.

Drizzle Application. The drizzle application method is useful for managing plants in areas that are difficult to access. The drizzle nozzle will reach a target plant 15 to 20 feet away compared to 2 to 3 feet with a flat fan nozzle. Because of the larger droplets, the drizzle method also minimizes drift. The lower volume of water also reduces the number of times needed to reload and can minimize applicator fatigue as well as the total weight of the sprayer.

For drizzle applications, glyphosate products with 41% active ingredient can provide good to excellent control of blackberries when applied at 13 ounces of product per gallon of water (10% of the total solution).

You also can apply triclopyr ester using a drizzle application. Products containing 61% active ingredient should be applied using 13 ounces of product (10% of the total solution) and 25 ounces of seed oil (20% of the total solution) per gallon of water.

Remember that although the drizzle technique uses a more concentrated herbicide solution, it is applied at a lower volume. One gallon of mixed herbicide solution should adequately treat one-half acre of densely populated blackberry.

Cut-Stump Application. Cut-stump treatments are most effective in spring during active plant growth or in the fall. Immediately after cutting, apply the herbicide to the cut surface with

a paint brush, spray bottle, or plastic squeeze bottle.

Delaying application will result in poor control, because the cut surface will quickly dry, preventing movement of the chemical into the plant. For small diameter stems, cut the stems with loppers or clippers and paint or sponge the herbicide solution onto each cut end.

For triclopyr ester products containing 61% active ingredient, use 1 part product and 4 parts water. The 8% amine formulation works well undiluted.

You also can apply glyphosate as a cut-stump application. If using a product containing 18% glyphosate, make a 1:1 solution of the product and water. For products that contain 41% glyphosate, use 1 part product and 3 parts water.

Cut stump applications can be made in the spring or fall. Follow similar timelines as given for glyphosate and triclopyr under foliar treatments.

Basal Bark Application.

Concentrated formulations of triclopyr ester can be applied to the basal stems of blackberries using a backpack sprayer or spray bottle. Thoroughly cover a 6 inch band around the basal section of the stem. Basal bark applications can be made almost any time of the year, even after leaves have senesced. For triclopyr ester products with 61% active ingredient, the application ratio is 13 ounces of product (10% of the total solution) and 25 ounces of seed oil (20% of the total solution) per gallon of water. In areas where people frequently harvest the fruit of wild blackberries, a late-fall basal bark treatment, after the berries have been picked is desirable to avoid human contact with the chemical. Glyphosate and the amine formulation of triclopyr provide poor control using this technique.

A single application of an herbicide does not always completely control

blackberries. Re-treat when new, sprouting leaves are fully expanded, generally when the plants are about 2 feet tall. Monitor treated areas closely for at least a year and retreat as necessary.



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WARNING ON THE USE OF PESTICIDES

Pesticides are poisonous. Some pesticides are more toxic than others and present higher risks to people, nontarget organisms, and the environment. A pesticide is any material (natural, organic, or synthetic) used to control, prevent, kill, suppress, or repel pests. "Pesticide" is a broad term that includes insecticides, herbicides (weed or plant killers), fungicides, rodenticides, miticides (mite control), molluscicides (for snails and slugs), and other materials like growth regulators or antimicrobial products such as bleach and sanitary wipes that kill bacteria.

Always read and carefully follow all precautions and directions provided on the container label. The label is the law and failure to follow label instructions is an illegal use of the pesticide. Store all chemicals in the original labeled containers in a locked cabinet or shed, away from food or feeds, and out of the reach of children, unauthorized persons, and animals. Never place pesticides in food or drink containers. Consult the pesticide label to determine active ingredients, correct locations for use, signal words, and personal protective equipment you should wear to protect yourself from exposure when applying the material.

Pesticides applied in your garden and landscape can move through water or with soil away from where they were applied, resulting in contamination of creeks, lakes, rivers, and the ocean. Confine pesticides to the property being treated and never allow them to get into drains or creeks. Avoid getting pesticide onto neighboring properties (called drift), especially onto gardens containing fruits or vegetables ready to be picked.

Do not place containers with pesticide in the trash or pour pesticides down the sink, toilet, or outside drains. Either use all the pesticide according to the label until the container is empty or take unwanted pesticides to your local Household Hazardous Waste Collection site. Contact your county agricultural commissioner for additional information on safe container disposal and for the location of the Hazardous Waste Collection site nearest you. Follow label directions for disposal of empty containers. Never reuse or burn the containers or dispose of them in such a manner that they may contaminate water supplies or natural waterways.

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ANR Associate Editor: AM Sutherland

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