

HIMALAYAN BLACKBERRY
Rubus procerus (Rubus discolor)

Life History/Identification:

The Himalayan blackberry is a robust, clambering or sprawling, evergreen shrub that can grow up to ten feet in height. The stems of the plant are biennial. Sterile first year stems develop from buds at or below the ground surface and bear only leaves. During the second year, lateral branches develop in the axils of the first year stems and produce both leaves and flowers. The flowers have a showy appearance and are borne in clusters of three to twenty at the ends of the shoots. Flowers are most commonly white, but rose or reddish flowers also occur. The berries of Himalayan blackberry are relished by many animals and do not stay on the plants long after ripening. Birds and animals disperse seeds to new locations. The seeds can remain viable in the soil for a period of at least several years, but the specific length of viability has not been documented. Typically, Himalayan blackberry produces good seed crops every year, which further allows the plant to spread rapidly.



The plant is also capable of extensive vegetative regeneration. The mostly biennial stems usually develop from perennial rootstocks or creeping stems. The Himalayan blackberry is known to spread extensively by trailing stems which root at the nodes. Rapid vegetative spread occurs even in the absence of disturbances. The plant usually grows in open weedy sites, such as along field margins, railroad right-of-ways, and on abandoned farms. It is also common in riparian woodlands and intertidal zones. Himalayan blackberry grows well on a variety of barren, infertile soil types, and can tolerate a wide range of soil pH and texture. The plant does, however, require adequate soil moisture and is not tolerant of long droughts.

Northern Arizona Localities:

Himalayan blackberry has been found at elevations up to 6,000 feet in Arizona. There is an infestation in the West Fork of Oak Creek, which was probably introduced by the former occupants of the site, when the property was privately owned. However, now that the area has reverted to public ownership, removal of this species is an objective. The infestations in West Fork have formed dense patches of thorny stems that compete with native species for habitat around the various springs and creeks. The plant can also detract from the recreational experience in West Fork because the thorns can cause injury to passing hikers. Himalayan blackberry is also found on several sites in the Verde Valley, including springs and disturbed areas.

Origin & Impact:

Himalayan blackberry was introduced into North America from Eurasia. Northern Arizona has five native species in the *Rubus* genus, which benefit birds and animals with food and shelter. Correct identification before control is necessary to avoid impacting native species.

Himalayan blackberry is an aggressive, non-native pest that can disturb delicate ecosystems. The scrambling habit of the plant smothers native plant growth, and it is able to out-compete resident vegetation for resources such as water and light. In addition, the tangled mass of thorny stems blocks access of humans, livestock, equipment, and vehicles to pastures and waterways. Recreational values can be degraded by the presence of Himalayan blackberry and other thorny exotics.

In forest areas, blackberries often invade open areas created by large disturbances. When grazed by cattle and horses, the thorny stems can lodge into the mouth and/or nasal passages of the

animal, causing injury and behavioral problems. However, grazing goats may provide some control. Another aspect of Himalayan blackberry is that they are a good source of food and shelter for rodents.

Control:

Although the eradication of several other non-native species in the forests of Northern Arizona is currently more urgent, control of Himalayan blackberry should occur where it is practical. There are several species of native blackberry, as well as other native flora, that could be displaced by this exotic intruder. However, keep in mind that total eradication is probably not possible. Due to the prolific amount of seed production and dispersal, and the long stems that can root wherever they touch the ground, control is an arduous task. Himalayan blackberry can quickly become the fairy-tale thicket that dares the fruit picker or hiker to venture inside its snarled web.

Cultural Control:

One way to discourage the further spread of Himalayan blackberry is to encourage the planting of native species of blackberries in or near wildland settings. Be careful not to spread the seeds when picking the berries of the non-native plant. Do not use exotic blackberries for erosion control or as an ornamental.

Mechanical Control:

Clipping and digging out blackberry plants with clippers and a shovel or mattock provides for a good start at management. Removal of as much of the root system as possible is extremely important because the plants will come back from roots left in the soil. Remember to wear the proper protection on arms, legs, hands, and eyes when dealing with this plant. Repeated tilling can control Himalayan blackberry, and it has been proven to be an effective method in cultivated fields. A single tilling, however, will only serve to fragment and encourage the growth of rhizomes. Mowing is not effective against Himalayan blackberry. It can stimulate the formation of lateral roots and promote suckering. It can be useful, however, for short-term control, where the reduction of the number of plants is complimented by another method of control. Burning is not effective because the plants resprout from rhizomes after a burning. Like mowing, burning can be useful in temporarily reducing the canopy of existing plants.

Chemical Control *(Noted here are chemical control techniques that have been used in other areas. Always check with weed specialists or chemical suppliers before treatment to ensure correct dosage and application. Mention of these products does not imply endorsement by the USDA Forest Service, Northern Arizona Weed Council or The Nature Conservancy.):*

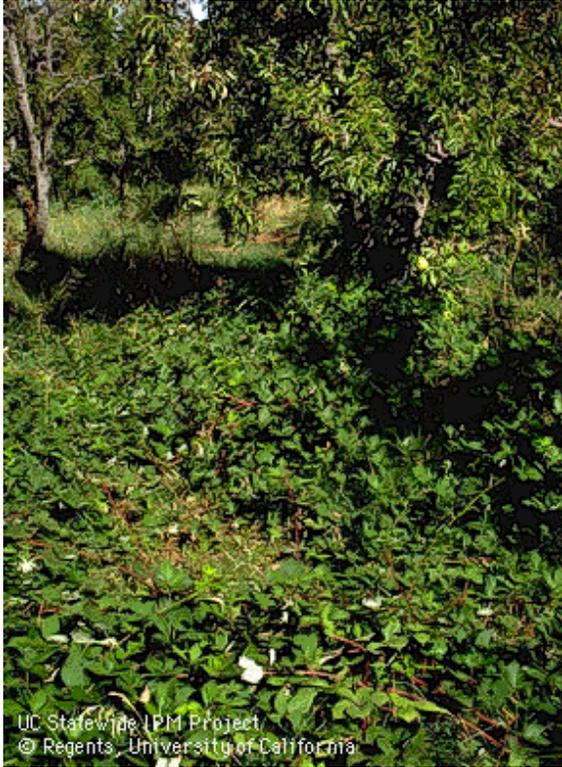
- 1) Glyphosate applied at a 0.5 to 1.5% solution in the late summer or early fall can provide good to excellent control. Complete foliage coverage is essential, and burning or mowing 40 to 60 days after application of glyphosate increases the level of control.
- 2) Dicamba plus 2,4-D, or dicamba alone, applied in late summer gives good control of wild blackberries. However, 2,4-D alone provides only fair control and will result in resprouting.
- 3) Triclopyr ester (1% solution) sprayed in the midsummer months is effective. Concentrated forms of triclopyr can be applied to basal regions of the plant with the use of backpack sprayers. Thoroughly cover a six to twelve inch basal section of the stem, but not to the point of runoff.

Biological Control *(No exotic species should be introduced into an ecosystem without extensive research into the long-term effects. Mention of the species below does not imply appropriateness for use in Northern Arizona.):*

Biological control is not an available method of control for this species. No successful biological control efforts have been fully tested in the US, although they exist in Australia.

Note: No single control method, or any one-year treatment program, will ever achieve effective control of an area contaminated with Himalayan blackberry. The rapid growth, high seed viability, fast rate of spread, and long seed dormancy of this plant require long-term

cooperative integrated management programs and planning to prevent, contain, and reduce Himalayan blackberry infestations.



Species Action Plan
Himalayan Blackberry
Rubus procerus

Life History/Identification: Himalayan blackberry is an exotic species found throughout many parts of the country. The plant was originally from Eurasia. It was probably introduced as a cultivated plant. The Himalayan blackberry typically grows in open weedy sites, such as along field margins, railroad right-of-ways, roadsides, and on abandoned farms. It has escaped cultivation or remains on formerly human occupied sites in various locations on the Coconino, Kaibab and Prescott National Forests. Individual plants can live up to 25 years. The Himalayan blackberry is a robust, clambering or sprawling, evergreen shrub, which grows up to 10 feet in height. Leaves are pinnately to palmately compound, with three to five broad leaflets. It has showy flowers that form at the ends of the shoots. Flowers are white or pink with five petals. Fruits are black and very tasty to humans and animals when ripe. Many animals eat the berries; therefore, seeds are spread

from one area to another in animal feces. New populations can be form from these seeds. New canes (stems) grow from the base of established plants each year to replace those that die. Sterile first-year stems develop from buds at or below the ground surface and bear only leaves. During the second year, lateral branches develop and produce both leaves and flowers. New plants can also start from rhizomes.

Status: Himalayan Blackberry is an invasive exotic. It is not recognized as a noxious weed on the Coconino, Kaibab and Prescott National Forests and is not on the Arizona Noxious Weed List.

Impacts: Himalayan Blackberry competes with native species for resources such as water and light. It can replace native vegetation by forming dense that can physically exclude native vegetation, or by out competing native species. Due to the presence of thorns, Himalayan blackberry can physically block access to an area by humans and animals. The thorny stems of Himalayan blackberry can cause injury to grazing animals by lodging in the mouth and nasal passages.

Northern Arizona Localities: Himalayan blackberry is present in the West Fork of Oak Creek, and at several sites in the Verde Valley. It may be present in other areas of the Coconino, Kaibab and Prescott National Forests.

Control: Control of several other species on the forests is currently more urgent. However, extermination and control of this species should occur where it is practical. There are several species of native blackberry that could be displaced by this exotic as well as other native flora that must compete for the existing habitat.

1. Cultural Control

Prevention of further spread of this species will be difficult where it exists. The berries are relished by any species of animals and birds as well as humans. The seeds will probably continue to spread from existing sources. One way to discourage the further spread of this species is to encourage planting native species of blackberries especially in or near wild land settings.

2. Mechanical Control:

Clipping and digging can be used to control Himalayan blackberry. Hand clippers such as those used in gardening projects are used to remove the above ground portions of the plants. Roots are then dug up using a shovel or other digging tool. This method is labor intense and the individuals doing the digging should wear protective clothing including gloves, long sleeved shirts, long pants and eye protection. The plants can then be stacked and burned or left at the site and allowed to decompose. Care should be taken to remove any berries if the plants are to be left. The berries can leave seeds behind and provide a source for regeneration. More than one visit will probably be needed. Rhizomes could remain in the soil, allowing regeneration of plants on the site.

Repeated tilling can control wild blackberries. This has proven effective in cultivated fields. However, a single tilling will only fragment the rhizomes allowing regeneration of additional plants.

Mowing is not effective. It can stimulate the formation of lateral roots and promote suckering. It can be useful for short-term control where a reduction in the number of plants present is desirable. This can be useful in promoting growth and competition in other plant species.

Burning is not effective for eradicating wild blackberries. The plants resprout from rhizomes after burning. Burning can be useful in temporarily reducing the canopy of existing Himalayan blackberry plants. This could temporarily reduce competition with native vegetation. Himalayan blackberry plants are well adapted to invade recently burned sites. Most blackberries sprout vigorously after fire. Plants can readily reoccupy recently burned sites through seed protected from the direct effects of fire by overlying soil or duff. Seed generally remains viable for long periods of time and germinates in abundance after disturbance

3. Chemical Control: *Noted here are chemical control techniques in use in other areas. Always check with weed specialists or chemical suppliers to ensure correct dosage and application. Mention of these products does not imply endorsement by the Northern Arizona Weed Council, San Francisco Peaks Weed Management Area, the USDA Forest Service, nor the Nature Conservancy. Currently herbicide use is not approved for use on lands under the jurisdiction of Coconino, Kaibab and Prescott National Forests. Always check with your local land manager before using herbicides on public land.*

Several methods of application and several different herbicides have been used for control of wild blackberries in other areas such as California. Repeated treatments are generally needed for

effective control. Caution must be used to prevent human contamination especially during berry picking time.

Soil application of herbicides approved for brush control such as tebuthiuron have been used. Tebuthiuron is a non-selective herbicide, which is applied to the base of the plant.

Foliar application can be used if applied at the proper time in the growing season. It must be applied when it can be transported throughout the plant by natural photosynthetic activity, generally during the growing season. Glyphosphate, Dicamba, and Triclopyr have been used.

Basal bark treatment can be used any time of the year. Triclopyr has been used. Caution is needed in areas where berry picking occurs.

Dormant stem and leaf treatment can be used. Triclopyr has been used. Caution is needed in berry picking areas.

4. Biological Control. There are no approved biological control agents for use on *Rubus procerus*.

5. Integrated Control:

Integrated control involves the use of two or more control methods in combination for control of the target plant. The combination usually is more successful than a single method. Hand removal of the plants and burning the removed plants was the only integrated control method suggested for Himalayan blackberry in the literature reviewed. Other methods may exist, but none were documented in the literature reviewed.

References:

Arizona Noxious Weed List, Plant Services Division, Arizona Department of Agriculture, Phoenix, AZ

Fire Effects Database <http://svinet2.fs.fed.us/database/feis/plants/index.html>

UC Pest Management Guidelines Wild Blackberries
<http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7434.html>

Wildlands Restoration Team, Santa Cruz, CA. A Plague of Plants <http://www.wildwork.org>

Phillips, B.G., David Lutz and Debra Crisp 1997 Noxious Weed List for Coconino, Kaibab and Prescott National Forests. On file at Forest Supervisors Office, Coconino National Forest.

Photo from UC Pest Management Guidelines Wild Blackberries
<http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7434.html>

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