GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Rubus discolor***

Rubus discolor 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Rosales	Rosaceae

Common name Armenian blackberry (English), Himalayan blackberry (English)

Synonym
Rubus procerus , auct. non P.J. Muell. ex Genev
Rubus armeniacus
Rubus fruticosus , L.
Rubus macrostemon , (Focke) Sampaio
Rubus thyrsanthus , (Focke) Foerster.
Rubus praecox , Bertol.
Rubus grabowskii , Weihe ex Gunther *et al.*

Similar species *Rubus spp.*

Summary Rubus discolor is a perennial species of blackberry that forms large impenetrable thickets of prickly canes. Thickets can become so dense that native species diversity is reduced through shading out and inaccessibility. Thorny stems block access of humans, livestock, equipment and vehicles to pastures and waterways, and leaf litter accumulations within thickets, creating potential fire hazards.

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Species Description

Rubus discolor is a strong perennial bramble, with stems that can sometimes reach 3m in height. Other stems are decumbent, trailing or scandent up to 6-12m long with straight or somewhat curved prickles 6-10mm long. Leaves are mostly 5-foliolate, bright green, glabrous above when mature and cano-pubescent to cano-tomentose beneath. There are hooked prickles on the petioles and petiolules. The leaflets are large and broad with the terminal leaflet roundish to broad oblong. Leaflets are abruptly narrowed at the apex, unequally and coarsely serrate-dentate. The inflorescence is a large terminal cluster with branches in the lower axils. Flowers are white to rose and up to 2-2.5cm across and have broad petals. Sepals are broad, cano-tomentose, conspicuously pointed and soon reflexed, approximately 7-8mm long. The fruits mature from red to shiny black and succulent (Alaska Natural Heritage Program, 2005; and Hoshovsky, 1989).

Lifecycle Stages

Rubus discolor is capable of clonal growth as well as sexual reproduction and has perennial roots that may simultaneously bear several biennial canes. During the first year, a cane remains entirely vegetative and growth is limited to elongation of the cane. In the spring of the second year, lateral shoots develop from buds in the leaf axils and the first-year leaves senesce. Growth during the second year is limited to lateral shoot elongation. Inflorescences are borne in the axils of leaves and at the terminal apex of each lateral shoot. *R. discolor* can form roots at cane apices. Daughter plants develop where these canes root. Canes produce berries in their second year and then die. Re-entry of canes into the center of the thicket result in an impenetrable mass of prickly canes. Individual canes may only live 2-3 years, yet reach a density of 525 canes per square metre. *R. discolor* can also readily propagate from root pieces and cane cuttings (Hoshovsky, 1989; McDowell and Turner, 2002).

Uses
Rubus discolor provides food and cover for many wildlife species. Fruits are eaten by numerous birds. Mammals such as the coyote, red fox, squirrels, and black bear, also feed on *R. discolor*. Deer, elk, beaver, porcupines, and rabbits consume the buds, stems, and leaves of *R. discolor* (Alaska Natural Heritage Program, 2005).

Habitat Description
Rubus discolor readily colonizes disturbed and neglected areas. It forms impenetrable thickets in wastelands, pastures, shrublands and forest plantations. Seedlings require open habitats or eroded soils for germination and establishment. It grows along roadsides, creek gullies, river flats, fence lines, open ridgetops and is common in riparian areas and right-of-way corridors. *R. discolor* tends to prefer wet sites even in relatively wet climates with an average annual rainfall greater than 76cms (30 inches) and appears to be able to tolerate flooding. *R. discolor* can grow well in infertile soils. It tolerates a wide range of soil pH and texture, (Alaska Natural Heritage Program, 2005; and Hoshovsky, 1989).

Reproduction
Rubus discolor reproduces by seed, rooting at cane apices, suckering of lateral roots, and from root and cane fragments. Thickets can produce up to 7,000 to 13,000 seeds per square metre. Seeds viability is retained for several years in the soil. Each *R. discolor* seed contains two ovules, but one usually aborts. The seeds are contained in berries, which consist of a number of loosely adhering drupelets. Berries ripen and turn black during the summer on canes more than one year old. *R. discolor* thickets themselves are poor sites for seedling development. The establishment of *R. discolor* seedlings depends on the availability of open habitats such as land neglected after cultivation, degraded pastures, areas rooted by feral pigs and eroded soils along streams. Mammals and birds readily disperse seeds. Passing through digestive tracts appears to scarify seeds and may enhance germination. It can be spread considerable distances by streams and rivers. Omnivorous mammals such as foxes may also accomplish dispersal (Alaska Natural Heritage Program, 2005; and Hoshovsky, 1989).

General Impacts
Rubus discolor colonizes areas initially disturbed and then neglected by humans. It then forms large impenetrable thickets of prickly canes with densities reaching 525 canes per square metre. A large quantity of litter develops in mature thickets. The thickets create dense shade, reducing native species diversity and likely limiting mammal movement in gaining access to water. In addition, the tangled mass of thorny stems blocks access of humans, livestock, equipment, and vehicles to pastures and waterways. These dense thickets and litter buildup represent potential fire hazards (Alaska Natural Heritage Program, 2005; and Hoshovsky, 1989). It has the potential to hybridize with native species of *Rubus* (Oppenheimer pers.comm., 2006).
R. discolor is a perennial weed which is difficult to control due to its ability to regenerate from sections of root stock. In forest areas, timber-logging operations create large open areas that are often invaded by *R. discolor*. When grazed, the thorny stems can injure nasal passages of livestock. Another undesirable aspect of *R. discolor* is that they are a good source of food and shelter for rats (DiTomaso, 2006; and Hoshovsky, 1989).

Management Info
Rubus discolor is a difficult species to control because of its extensive vegetative reproduction and because it often grows in very sensitive wetland habitats. This species is shade-intolerant, so planting fast-growing shrubs or trees may prevent reestablishment. Resprouting is problematic, and many years of follow-up efforts are necessary for control. Plants can be eliminated by grubbing with follow-up treatment a year later, repeated mowing, and by pasturing with goats. Goats eat blackberries readily, and seem to prefer them to other plants. An economic analysis in Australia showed that running goats on a blackberry-infested pasture was cheaper than using herbicides to manage the berries. (Alaska Natural Heritage Program, 2005; Cox, 2003; and Francis, UNDATED).
Chemical: Research has shown that the herbicides picloram, 2,4,5 T, and a combination of aminotriazole & ammonium thiocyanate are effective at controlling *R. discolor* (Amor, R.L., 1972). Fechtig and Furtick (1964) assesed the efficacy of various herbicides on *R. discolor* and found that only picloram at rates 2 lb./acre gave complete control of *R. discolor* on assessment 5 months after treatment. Lower rates of picloram (1 lb./acre) gave 95 % control, while 2,4,5 T at 1, 2 and 4 lb./acre gave respectively 75, 85 and 93 % control.
Foliar application of Trichlopyr amine at 2% effective, as is cut stump af Trichlopyr amine at 100%, especially as primocanes emerge (Oppenheimer pers.comm., 2006).
Biological: A highly virulent strain of *Phragmidium violaceum* (bramble leaf rust) from central France has shown to offer some evidence of specificity; being effective on *R. discolor*. The infection weakens growth and reduces the rate of spread of the weed, making it more manageable. The State of Victoria in Australia has investigated and approved blackberry as a candidate for biological control by *Phragmidium violaceum*. Unfortunately results so far show the program as being unsuccessful because the rust has not caused significant damage to its host. In the United States, the introduction of herbivorous insects and fungi to control *R. discolor* is not supported by USDA because of the risk posed to commercially important *Rubus* species (Alaska Natural Heritage Program, 2005; DiTomaso, 2006; Dodd and Lloyd, 1992; and Parsons *et al.* 1984).
Biological control in Hawai`I should be discouraged without rigorous testing because of 2 endemic *Rubus* spp. (*R. hawaiiensis*, and *R. macraei*), the latter restricted to high elevations on East Maui and Hawai`i Islands, and considered rare (Oppenheimer pers.comm., 2006).

Pathway
R. discolor probably was introduced to North America in 1885 as a cultivated crop (Alaska Natural Heritage Program, 2005).Humans transported *R. discolor* long distances for use as an ornamental (Starr *et al.* 2003).

Principal source: Alaska Natural Heritage Program, 2005. Himalayan blackberry - *Rubus discolor* Weihe & Nees
Hoshovsky, 1989. Element Stewardship Abstract for *Rubus discolor, (Rubus procerus)*

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ALIEN RANGE

[2] AUSTRALIA
[1] NEW ZEALAND
[28] UNITED STATES
[2] CANADA
[1] SOUTH AFRICA

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Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.
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