Himalayan blackberry

Rubus discolor Weihe & Nees

Synonyms: *Rubus procerus* auct. non P.J. Muell. ex Genev, *R. fruticosus* L.
Other common names: Himalayaberry
Family: Rosaceae

Description
Himalayan blackberry is a strong perennial bramble, with stems up to 30 feet long, frequently taking root at tips. The stems are very strongly angled with large curved spines. Stems may live only two to three years. Leaves are mostly 5-foliolate, bright green and smooth above, grayish-tomentose beneath. The leaflets are large and broad, oblong, 2½ to 5 inch long, and sharply toothed. The inflorescence is branched and 5- to 20-flowered. The flowers are white to rose and up to 1 inch across. The fruits mature from red to shiny black and succulent (Hitchcock and Cronquist 1961, Hoshovsky 2000).

There are several species of native blackberries and raspberries that could be confused with Himalayan blackberry. Himalayan blackberry is distinguished from other species of this genus by having five leaflets. The stem of Himalayan blackberry is strongly angled and furrowed, not round. Only Himalayan blackberry has curved prickles with wide bases (Hitchcock and Cronquist 1961, Hultén 1968, Viereck and Little 1972).

Ecological Impact
Impact on community composition, structure, and interactions: Himalayan blackberry forms large impenetrable thickets of prickly canes within a few years. The density of canes can reach of 525 canes per square meter. A large quantity of litter and develops in mature thickets. The thickets create dense shade, reducing native species diversity and likely limiting mammal movement (Hoshovsky 2000, Tirmenstein 1989). Himalayan blackberry has been reported to hybridize with number of other *Rubus* species. This bramble 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 blackberries. Deer, elk, beaver, porcupines, and rabbits consume the buds, stems, and leaves of blackberries (Tirmenstein 1989).
Impact on ecosystem process: Himalayan blackberry is a pioneer plant that colonizes intertidal zones in California, preventing the establishment of other native plants (Hoshovsky 2000, Tirmenstein 1989). Dense thickets are a fire hazard (Hoshovsky 1989, Hoshovsky 2000).

Biology and Invasive Potential
Reproductive potential: Himalayan blackberry reproduces by seed, rooting at cane apices, suckering of lateral roots, and from root and cane fragments (Hoshovsky 2000, Richardson 1975). Thickets can produce up to 7,000 to 13,000 seeds per square meter. Seeds viability is retained for several years in the soil (Hoshovsky 2000).
Role of disturbance in establishment: Himalayan blackberry readily colonizes disturbed and neglected areas. Seedlings require open habitats or eroded soils for germination and establishment (Hoshovsky 2000). Seeds, remaining in the long-lived seed bank, can germinate profusely after disturbance (Tirmenstein 1989).
Potential for long-distance dispersal: Seeds are readily dispersed by mammals and birds. Passing through digestive tracts appears to scarify seeds and may enhance germination (Brunner et al. 1975). It can be spread considerable distances by streams and rivers (Hoshovsky 2000).
Potential to be spread by human activity: Himalayan blackberry is widely cultivated; it has escaped and become naturalized throughout the western US (Hitchcock and Cronquist 1961).
Germination requirements: Germination is often slow due to hard coat and a dormant embryo. Plants a long warm (68° to 86° F for ninety days) followed by a long cold period (36° to 41° F for an additional ninety days) (Hoshovsky 2000).

Growth requirements: This plant can grow well in infertile soils. It tolerates a wide range of soil pH and texture, but requires adequate soil moisture. It prefers areas with an average annual rainfall greater than 30 inches (Hoshovsky 2000). It appears to be tolerant of flooding. Young seedlings require full sunlight for survival (Hoshovsky 2000).
Congeneric weeds: *Rubus argutus* Link, *R. ellipticus* Sm., *R glaucus* Benth., *R niveus* Thunb. are considered invasive species in Hawaii (Plans of Hawaii 2003).
Listing: Rubus discolor is considered to be noxious in Oregon (Invaders Database System 2003, USDA 2002).

Distribution and abundance
Native and current distribution: Himalayan blackberry is native to western Europe and northern Africa. It has naturalized in southwestern Asia, Australia, Polynesia, North and South America, South Africa, and New Zealand (USDA, ARS 2005). It probably was introduced to North America in 1885 as a cultivated crop (Hoshovsky 2000, Tirmenstein 1989). It has become widely naturalized in the Northeast from Delaware to Virginia, and in the Pacific Northwest from northern California through southern British Columbia eastward to Idaho (USDA 2002). Himalayan blackberry is common in wastelands, pastures, and second growth forests. Additionally, it grows along roadsides, creek gullies, river flats, and fence lines. It is common in riparian areas (Ertter 1993, Hoshovsky 2000).

Management
Himalayan blackberry is a difficult species to control because of its extensive vegetative reproduction and because it often grows in very sensitive wetland habitats. Mechanical removal or burning may by the most effective ways of removing mature plants. Additional treatments with some herbicides can promote vegetative growth from lateral roots. This species is shade-intolerant, so reestablishment may be prevented by planting fast-growing shrubs or trees. Resprouting is problematic, and many years of follow-up efforts are necessary for control. The introduction of herbivorous insects and fungi to control Himalayan blackberry is not supported by USDA because of the risk posed to commercially important *Rubus* species (Hoshovsky 1989, Hoshovsky 2000).

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