

Rubus glaucus

Andean raspberry

Rosaceae

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OVERVIEW

Rubus glaucus is known from the island of Hawai'i and is about to be published as naturalized from the island of Maui. On Maui, this thorny bramble is capable of climbing high into the canopy of surrounding native forest trees and displays aggressive behavior in both mesic and wet forest areas. It is locally established in a few sites on Maui and is not easily controlled. On Maui, island wide eradication may not be feasible at this time. *Rubus glaucus* will likely continue to spread. This species could be controlled if detected early in natural areas.

TAXONOMY

Family: Rosaceae (rose family) (Wagner et al. 1999).

Latin name: *Rubus glaucus* Benth. (Wagner et al. 1999).

Synonyms: None known.

Common names: Andean raspberry, Andes berry (PLANTS 2003, Starr et al. in press).

Taxonomic notes: The genus *Rubus* is a large genus made up to about 250 species primarily of north temperate regions and the Andes of South America (Wagner et al. 1999).

Nomenclature: The genus name *Rubus* is the Latin name for bramble and originates from the word *ruber*, meaning red (Wagner et al. 1999).

Related species in Hawai'i: In Hawai'i, there are two endemic *Rubus* species, including *Rubus hawaiiensis* ('akala), known from mesic to wet forest and subalpine woodland, 660-3,070 m (2,165-10,072 ft), on Kaua'i, Moloka'i, Maui, and Hawai'i, and *R. macraei* ('akala), known from East Maui and Hawai'i (Wagner et al. 1999). Several naturalized species also occur in Hawai'i, including *Rubus argutus* (prickly Florida blackberry), *R. discolor* (Himalayan blackberry), *Rubus ellipticus* Sm. (yellow Himalayan raspberry), *Rubus niveus* (hill or mysore raspberry), *R. rosifolius* (thimbleberry), and *R. sieboldii* (Wagner et al. 1999).

DESCRIPTION

"This species is distinguished by its thin white petals, sharp thorns, white undersides of leaves, and thimble shaped fruits." (Starr et al. in press). It is also known for the long, tailed tips of the sepals (Dr. D. Boufford pers. comm.).

"The primocanes are erect and arching, light green with a glaucous bloom. the canes may be over 5 m long with tips touching the ground and rooting. Leaves have three leaflets

that are white to very pale green on the lower surface. Petals are white. Fruit is 2-3 cm long, dark red to black when ripe, and is sweet and flavorful." (Gerrish et al. 1992).

BIOLOGY & ECOLOGY

Cultivation: *Rubus glaucus* is widely cultivated in South America for its edible fruits (GRIN 2003). *Rubus glaucus* was introduced to the University of Hawai'i at Manoa agricultural experimental farms on Hawai'i in the late 1960's (Gerrish et al. 1992).

Invasiveness: Since its introduction to Hawai'i, *Rubus glaucus* has begun to spread. *Rubus glaucus* was previously reported as naturalized and spreading from the Puna district, Hawai'i, but fertile material was not available at the time (Wagner et al. 1999). *Rubus glaucus* has since been collected and officially documented as naturalized in the State from the island of Maui (Starr et al. in press). On Maui, this vigorous thorny climber is locally established in a few areas of East Maui, where it can be seen climbing high into the canopy of other trees and filling gulches. It is vigorous in both wet and arid disturbed forest areas on Maui and could potentially become much more widespread.

Pollination: Not known.

Propagation: *Rubus* species can be propagated from seeds and cuttings.

Dispersal: In Hawai'i, *Rubus glaucus* is spread long distances in the horticulture trade. *Rubus* species are known to be spread by fruit eating birds and mammals.

Pests and diseases: Not known.

DISTRIBUTION

Native range: *Rubus glaucus* is native from Mexico to Ecuador (St. John 1973). GRIN (2003) lists the following countries as native for *Rubus glaucus*: Southern America: Colombia; Costa Rica; Ecuador; Guatemala; Panama; Peru - Huanuco.

Global distribution: *Rubus glaucus* is cultivated South America for its edible fruits.

State of Hawai'i distribution: *Rubus glaucus* was introduced to the University of Hawai'i at Manoa agricultural experimental farms on Hawai'i in the late 1960's (Gerrish et al. 1992). It is now naturalized in the area (Wagner et al. 1999). According to Gerrish et al. (1992), "Vigorous fruiting plants of *R. glaucus* can readily be found at the Volcano Agricultural Experiment Station, Puna District, and outside the farm along Wright Road. By 1981, this species had spread about a mile to other agricultural lots in Volcano, and into the edge of the native forest of O'la'a Tract in Hawai'i Volcanoes National Park." They add, "Fruiting plants can also be found at about 2,800 ft (853 m) elevation, in the Hamakua Agricultural Experimental Station above Pa'auilo, Hamakua." *Rubus glaucus* is also known from Maui (see below).

Island of Maui distribution: On Maui, this vigorous thorny climber is established in at least along the Waikamoi Flume Rd., Olinda; Crater Rd., Kula; and Polipoli. At the

Olinda site, 4,200 ft (1,280 m) elevation, this thorny climber is naturalized over .75 miles (1.2 km) of the Waikamoi Flume Rd. and adjacent forest where it sprawls on vegetation and climbs 20 ft (6 m) into the canopy and is not yet widespread but is definitely locally established and spreading (Starr et al. in press). At the Kula site, 4,000 ft (1,219 m) elevation, *Rubus glaucus* is known from a few small patches along Crater Rd. (Starr et al. in press). Gerrish et al. (1992) also report having found a *Rubus glaucus* population in this area, near Sunrise Protea Farms, 4,000 ft (1,219 m) elevation. In the Polipoli area, 5,200 ft (1,585 m) elevation, *Rubus glaucus* is locally rampant where it is filling gulches and forming thickets along the road.

CONTROL METHODS

Control of *Rubus* species is not easily done. Often, the plant covers large areas, is hard to handle, is hard to kill, and re-sprouts. Chemical control in Hawai'i is done for other species of *Rubus*, but it is very difficult to completely remove established populations.

Physical control: Mechanical control of this species is tough due to sharp prickles and large thickets. It may be possible to pull or dig up small seedlings. The entire plant, above and below ground, must be carefully removed to prevent re-growth. Plants are sometimes cut back to reduce biomass before chemical control is done.

Chemical control: Various forms of chemical methods can be used to control *Rubus* spp., including foliar, stem injection, cut stump and basal stem methods using glyphosate or triclopyr products.

Biological control: Several biological control agents have been introduced to Hawai'i for the related species, *Rubus argutus* (prickly Florida blackberry).

Cultural control: The public could be discouraged from growing weedy plants such as *Rubus glaucus*. Future introductions of *Rubus* species should be done with caution.

Noxious weed acts: *Rubus ellipticus* is a noxious weed in Hawai'i (GRIN 2003).

MANAGEMENT RECOMMENDATIONS

Rubus glaucus is locally established in a few locations on Maui and Hawai'i. On Maui, *Rubus glaucus* is known from Waikamoi Flume Rd., Olinda; Crater Rd., Kula; and Polipoli where it is vigorous and climbs high into the canopy, fills gulches, and forms thorny thickets. It may be too well established to eradicate on Maui at this time. New locations in natural areas could be controlled if detected at an early stage.

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