

Hypericum canariense

Canary Islands St. Johnswort

Clusiaceae

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OVERVIEW

Hypericum canariense is native to Canary Islands and Madeira where it is widely cultivated as an ornamental. It is occasionally cultivated in botanical gardens elsewhere in the world, including California and Hawai'i, where it is now spreading from initial plantings, forming dense monotypic thickets, and crowding out other vegetation (Wagner et al. 1999, TNC 2002). It has also recently been collected from the southwestern part of Western Australia and is currently being evaluated as a potential weed there (Sandy Lloyd pers. comm.). In California, *H. canariense* crowds out both native and non-native vegetation, and can even out-compete other aggressive weeds such as pampas grass (*Cortaderia jubata*) (TNC 2002). In Hawai'i, *H. canariense* is known only from Kula, East Maui. The infestation is locally dense near the epicenter located at Ka'ono'ulu Gulch where Kekaulike Ave. crosses, at about 3,000 ft (914 m) elevation, with scattered pockets of plants spreading along roads, in yards, gulches, and pastures. From there, the infestation extends over approximately 175 acres (71 hectares) eastward to Pohakuokala Gulch and upwards to about 4,000 ft (1,219 m) elevation. *H. canariense* is thriving in this cool, dry climate and appears to have not reached its full distribution yet on Maui. Natural areas that are potentially threatened by invasion of *H. canariense* include mid to high elevation shrubland, grassland, gulches, and mesic to xeric forests.

TAXONOMY

Family: Clusiaceae (Mangosteen family) (Wagner et al. 1999), Hypericaceae (Hypericum family) (Bailey and Bailey 1976).

Latin name: *Hypericum canariense* L. (Bailey and Bailey 1976, Wagner et al. 1999).

Synonyms: *H. floribundum* Aiton (Bailey and Bailey 1976, Wagner et al. 1999), *Webbia platysepala* Spach (Wagner et al. 1999).

Common names: Canary Islands St. Johnswort (TNC 2002).

Taxonomic notes: *Hypericum* is a genus of about 400 species throughout most tropical and temperate regions of the world, however usually absent from most lowland tropical regions (Wagner et al. 1999).

Nomenclature: The name is derived from *hypereikon*, from the Greek word, *hyper*, meaning above, and *eikon*, meaning picture, referring to the flowers of certain *Hypericum* species which were placed above images during a midsummer festival, *Walpurgisnacht*, to ward off evil (Wagner et al. 1999).

Related species in Hawai'i: According to Wagner et al. (1999) the only other species of *Hypericum* known to be naturalized on Maui is *H. mutilum*. This species is naturalized on east Maui, on irrigation roads, and grows to about knee high. Other species which

occur in the state include: *H. gramineum*, *H. parvulum*, and *H. perforatum*. *H. perforatum* (klamath weed) is documented as a weed in the United States due to its toxicity to grazing animals, widespread distribution, and difficulty in eradication (US-DOA 1971). *H. perforatum* was recently found being cultivated on Maui.

DESCRIPTION

"Many-branched shrubs 1-4 m tall. Leaves oblong-lanceolate to narrowly elliptic-lanceolate, 5-7 cm long, 1.2-1.6 cm wide, glabrous, glandular punctate with translucent glands, base cuneate to attenuate, sessile and somewhat amplexicaul. Flowers 2-3 in cymes terminating the upper stems, the cymes arranged in panicles, pedicels 10-20 mm long in fruit; sepals ovate to lanceolate, ca. 3 mm long, apex acute to obtuse; petals yellow, spatulate, ca. 17-19 mm long, apex hooded; stamens 12-36, in 3 clusters; styles 3. Capsules coriaceous, ovoid, 3-lobed, apex truncate. Seeds numerous, pale reddish brown, elongate-cuneate, 1.4-1.6 mm long, reticulate." (Wagner et al. 1999).

BIOLOGY & ECOLOGY

Cultivation: Many species in the genus, *Hypericum*, are easily cultivated and grown from seeds as ornamentals for borders, rock gardens, shrubs and ground covers (Bailey and Bailey 1976). *H. canariense* is widely cultivated for ornament in its native habitat, the Canary Islands and Madeira (Wagner et al. 1999). It has numerous bright yellow flowers and a nice shrubby habit. In the United States, *H. canariense* is cultivated in southern states of at least California and Hawai'i (Bailey and Bailey 1976, Wagner et al. 1999). Though not widely grown in home gardens or as a landscape plant, *H. canariense* is sometimes grown in arboretums and botanical gardens (TNC 2002). In addition, internet sources reveal that seeds of *H. canariense* are available for sale (Platt 2002).

Invasiveness: In both California and Maui, Hawai'i, *H. canariense* is spreading from initial plantings (PLANTS 2002). *H. canariense* is also listed by Randall (2002) in the global compendium of weeds for Western Australia, where it has recently been collected. In California, infestations form dense thickets and crowd out native and non-native vegetation. It is reported that the only native plants left after *H. canariense* invades are those that are at least 1.5 m tall (TNC 2002). In addition, *H. canariense* can comprise 90-100% of the vegetation cover in infested areas (TNC 2002). Spread at a rate of up to 45-90 m per year have been observed in favorable conditions in California (TNC 2002). On Maui, numerous fine, light, wind dispersed seeds readily germinate along roads, in yards, open pastures, in gulches, on steep banks, and scrub areas. It seems to tolerate higher elevations and may be a potential invader to the upper slopes of Haleakala, Maui. Visiting botanists from the Canary Islands said that this plant will love our mountain (Charles Chimera pers comm.).

Pollination: Observation of numerous Hymenoptera visiting flowers, including honey bees and syrphid flies, were made. It is uncertain whether these insects are pollinating the plants.

Propagation: Plants can be grown from seeds.

Dispersal: This plant seems to be a popular component in botanical gardens around the world. In California, this plant is thought to have escaped from cultivation as well (TNC 2002). Other *Hypericum* species are a recent trend in medicinal plantings. Once mature, *H. canariense* produces large amounts of viable seeds (TNC 2002). These light seeds are probably wind dispersed. Seedlings then germinate wherever seeds land.

Pests and Diseases: Observation of plants on Maui found numerous insects associated with *H. canariense*, including: *Apis mellifera*, honey bee, visiting flowers; *Asynonchus godmanii*, fuller rose beetle, Coleoptera: Curculionidae, damage included some notching on leaf margins; *Olla abdominalis*, grey lady bird beetle, Coleoptera: Coccinellidae, perhaps feeding on aphids; an unknown Lepidoptera, small brown and yellow larva found in the flowers; and other insects including aphids, syrphids, crickets, spiders (*Cheiracanthium diversum*), flies, and wasps. None of these insects were doing much damage to the plants. The Lepidoptera larva probably did some damage to flowers, though probably not enough to severely impact seed set.

DISTRIBUTION

Native range: *H. canariense* is native to the Canary Islands and Madeira, and is often located in xerophytic scrub or forested areas from 150-800 m (492-2,625 ft) elevation (TNC 2002). The Canary Islands are a group of seven volcanic islands located in the North Atlantic Ocean at about 28 degrees north off the northwestern coast of Africa. Madeira is just north of the islands at about 32 degrees north. They are mountainous islands with a high peak on the island of Tenerife at 3,710 m (12,172 ft) elevation. Like the Hawaiian Islands, the Canary Islands are located in the trade wind belt and have a variety of climates and ecosystems as one moves up, down, leeward, and windward on the high mountains. The average annual temperature ranges from 50-68 F (10-20 C) in January to 68-86 F (20-30 C) in July (Hammond 1986). More specifically, average summer temperature is 22 C (72 F) and average winter temperature is 18 C (64 F) (Astudillo 1996). The average annual rainfall is listed by Hammond (1986) as under 10 in (25 cm). The average annual rainfall is listed by Passold (2001) as less than 20 in (51 cm).

Global distribution: *H. canariense* is cultivated and spreading in California. In southern California, *H. canariense* is spreading in areas near San Diego and Santa Barbara Counties below 100 m (328 ft) in coastal sage scrub and grassland (CalEPPC 1999). In northern California, *H. canariense* currently occupies about 25-40 hectares (62-99 acres) near Gazo Creek, San Mateo County (TNC 2002). It is also found along the coast of Pescadero where it is rapidly expanding in range, and is expected to expand inland (TNC 2002). *H. canariense* was recently collected in Western Australia where it is currently being evaluated as a potential weed (Sandy Lloyd pers. comm.).

State of Hawaii distribution: *H. canariense* is known from Kula, East Maui 970-1,100 m (3,182-3,609 ft) elevation (Wagner et al. 1999) where it was documented as sparingly naturalized at the time. It seems well adapted to the climate and is now well established in the area. It is not known from any other Hawaiian Islands. Inventories of botanical gardens on other islands may be necessary to be sure it is not present.

Island of Maui distribution, population structure: On Maui, *H. canariense* is presumed to have originated from near Ka'ono'ulu Gulch where Kekaulike Ave. crosses the gulch. There is an old bridge and a botanical gardens also located in the gulch. Recently, the owner of the botanical gardens reported that when he first purchased the garden in 1968, the area was being held in pasture, and a small patch of *H. canariense* existed near the bridge. When he began to clear wattle (*Acacia mearnsii*) in the garden area, a few *H. canariense* plants germinated and were left to grow. He then noticed that the plants had aggressive growth and were heavy seeders, so he began to pull up the *H. canariense* seedlings as they came. The weed has required constant management ever since. In this area, the infestation is especially dense. It is most noticeable during flowering periods (spring / April) when shrubs are covered with numerous bright yellow flowers. Pockets of fairly dense infestations occur in nearby gulches, yards, and roadsides. The density of the infestation decreases as one gets further, within a few miles, from the epicenter of the infestation. No known outliers separate from the infested Kula site are known from the rest of the island. The current area of infestation is made up of dense pockets that stretch out over approximately 175 acres (71 hectares) from a low elevation of just below 3,000 ft up to just over 4,000 ft (914-1,220 m). The infestation centers off of Kekaulike Ave. and is bounded on the east by Pohakuokala Gulch and Crater Rd. and on the west by Waipoli Rd. The soils are volcanic and the climate is dry and sub-tropical. The land use type is residential, agricultural, and pastoral. Many other aggressive weedy species are also naturalizing in this area including, but not limited to the following: *Asparagus asparagoides*, *Buddleia madagascariensis*, *Cortaderia* spp., *Cotoneaster pannosus*, *Morella faya*, *Passiflora mollissima*, and *Pyracantha* spp.

CONTROL METHODS

Physical control: Small seedlings can be pulled. Medium sized plants can be grubbed out. Larger plants are harder to pull or dig up, but it can be done. Plants will re-sprout if cut and not treated with an herbicide.

Chemical control: On Maui, plants in the way of road crews appear to be getting some control. We observed plants that appeared to have been cut at the base, rebounded, then sprayed with a foliar herbicide. These plants appeared damaged, but not totally dead. Plants on Maui have been successfully controlled with a basal bark application of triclopyr (Garlon 4) (Pat Bily pers comm.). In addition, California information suggests that a cut stump herbicide application of glyphosate (Round Up) at full strength is an effective control method (TNC 2002). They suspect that lower concentrations may be effective, but have not done any trials.

Biological control: No biological control agents are currently known, though numerous biological control agents have been introduced to the United States to combat a related species, *H. perforatum*.

Cultural control: The public could be asked not to plant *H. canariense* or other potentially harmful non-native plants. Plants that are observed that are not within the current infestation zone can be reported.

Noxious weed acts: None.

MANAGEMENT RECOMMENDATIONS

H. canariense is an aggressive invader in both California and Maui, Hawai'i. It is also present and being considered as a potential weed in Western Australia. In Hawai'i, the only known location in the state is in Kula, Maui. *H. canariense* seems to thrive in this dry, cool, upland environment and poses a potential future threat to upland native shrubland, grassland, gulches, and possibly some wooded areas of Haleakala. Currently, there is no established control campaign being waged against this aggressive invader. Without persistent and diligent control, *H. canariense* will continue to spread, possibly establish several infestation loci, and become more costly and difficult to manage in the future. This species could be a potential candidate for inclusion in the Hawai'i Department of Agriculture's noxious weed list. This would prohibit transport and further planting. More intense surveys of the gulches above the current infestation on Maui would help refine the upper boundary. This would probably be best done around April or after rains when *Hypericum* is in full bloom which makes it easier to map. Information on distribution and weedy potential of other *Hypericum* spp. in the State and elsewhere would be useful. Other places in the world with similar habitat should take note that *Hypericum canariense* is likely to invade if planted.

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