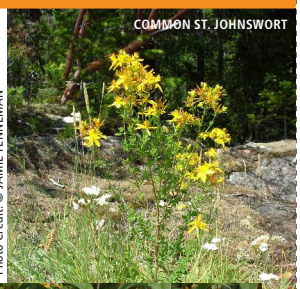
Hypericum species

COMMON ST. JOHNSWORT & AARON'S BEARD



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ENGLISH NAMES Common St. Johnswort[1]; Aaron's Beard, Creeping St. Johnswort[2]

SCIENTIFIC NAMES *Hypericum perforatum*[1] and *H. calycinum*[2]

FAMILY Clusiaceae (Mangosteen)

Common St. Johnswort and Aaron's Beard are rhizomatous yellow-flowering perennials.

RANGE/KNOWN DISTRIBUTION

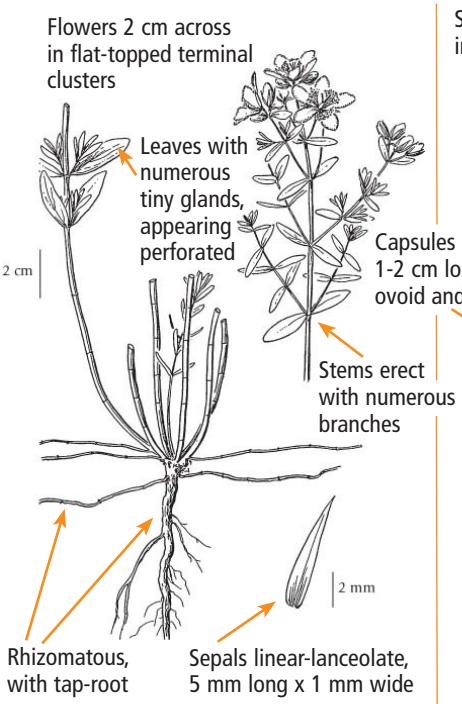
Both species are native to Eurasia and North Africa. Common St. Johnswort is now widely distributed in the temperate areas of both hemispheres and is considered a weed in its native range. In BC, it grows at low to mid-elevations in coastal areas, grasslands, and open forests. It is widespread along major transportation corridors on Vancouver Island and southwest BC, and in scattered pockets in the Interior. Aaron's Beard is found as a garden escapee, at sites where yard waste has been dumped, and at abandoned homesteads.

IMPACTS ON GARRY OAK AND ASSOCIATED ECOSYSTEMS

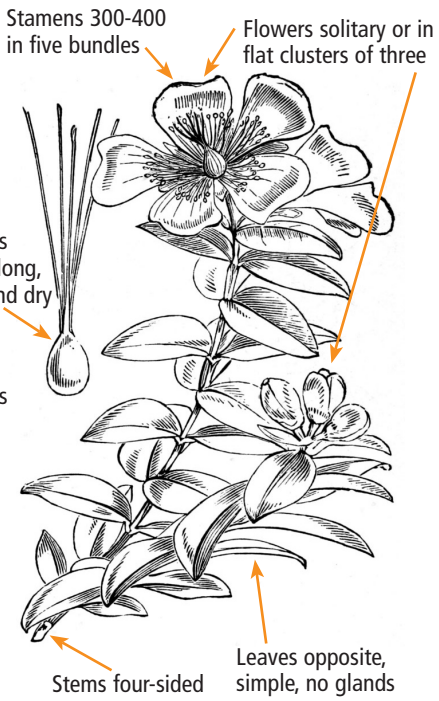
Common St. Johnswort and Aaron's Beard can reduce species diversity where they establish. Both do well in Garry Oak habitat conditions. Populations can form dense colonies with extensive creeping rhizomes, growing to 1 m tall. Common St. Johnswort impedes growth and regeneration of native forbs, shrubs, and trees by competing for nutrients and space. It is toxic to animals so is primarily a concern for livestock; however, small burrowing mammals have been observed to avoid it, and birds in general do not eat its fruit. Aaron's Beard is provincially listed as a nuisance weed. It does not yet appear on other invasive species lists in BC but is listed in Australia, New Zealand, and parts of Europe having similar climate regimes.

FIELD DESCRIPTION

Common St. Johnswort grows 30–120 cm tall from a rhizome. Numerous bright yellow flowers are 2 cm in diameter with five separate petals. Flowers are arranged in a flat-topped terminal cluster of 25–100+ per plant. Leaves are opposite, oval shaped, with prominent veins, 1–3 cm long x 0.5–1.5 mm wide, and with numerous tiny, translucent black-edged glands giving a perforated appearance. Stems are erect, two-sided, rust coloured, with numerous branches. Density of stems arising from



Common St. Johnswort, *Hypericum perforatum;* Illustration from Illustrated Flora of British Columbia, G.W. Douglas, G.B.Straley, D.V. Meidinger and J. Pojar (eds.), (1998). © Province of British Columbia



Aaron's Beard, *H. calycinum;* Illustration by Walter Hood Fitch ca 1860

rhizomes ranges from 12–37 per m^2. Fruits are membranous sticky capsules, 5–8 mm long, containing numerous dark brownish seeds, 1.0–1.3 mm long; the capsules are pitted in longitudinal rows, and have a gelatinous coating.

Aaron's Beard is a low-growing stoloniferous (rooting at nodes along horizontal creeping stems) semi-evergreen sub-shrub, widely cultivated for its flowers and dense ground covering form. Aerial, four-sided stems grow to 80 cm tall. Leaves are opposite, broadly oval to elliptical, lacking glands, and 3–10 cm x 1.2–3 cm. Bright yellow flowers are 6–9 cm in diameter and are arranged singly or in flat clusters of three. The five petals are egg-shaped and surround a dense tuft of 300–400 protruding yellow stamens (in five bundles) with orange-red anthers. Fruits are capsules 1–2 cm long, ovoid, and dry. Seeds are 1.5–2 mm long, broadly cylindrical, with a network of sculpturing on the surface. *Hypericum anagalloides* is a native species that could be confused with *H. perforatum,* but the former is a species of moist to wet bogs, ditches, and lawns—sites that are more moist than where *H. perforatum* is typically found.

LIFE HISTORY

Common St. Johnswort reproduces by seeds and from short rhizomes. The root system of seedlings grows to 30 cm deep in the first growing season. The mature plant root system extends 1.2 m–1.5 m deep and 1 m laterally, storing energy that allows plant survival through drought. New crowns may be produced from lateral root buds that form in response to disturbance. A mature plant can produce up to 30 flowering stems annually. Flowering occurs from June to September, with capsules persisting to early fall, when seeds are shed. Plants die back to a basal rosette that survives through winter; upright shoot and stem growth occurs in spring. Seed production per inflorescence is 30,000–100,000. Seeds have a gelatinous coat that facilitates dispersal by animals, wind, and water, and which can delay germination for several years until suitable environmental conditions occur. Aaron's Beard reproduces mainly vegetatively from rhizomes. Its flowers are hermaphroditic, having both male and female organs. However, most of the seeds abort before maturing.

HABITAT

Both species can establish quickly on disturbed sites in grasslands, meadows, woodlands and open forests, trails, and roadsides in moist to dry conditions. Both tolerate a variety of soils, from rocky and shallow to deep and fertile, but require a moderately warm and long growing season for life cycle completion. A popular yet invasive ground cover, Aaron's Beard is adapted to coastal exposures, and will grow in full sun to shade in heavy clay soils.

MANAGEMENT

Develop a long-term, realistic program for invasive species removal before undertaking any work. Before taking action, obtain expert advice. Please refer to the introductory section of this manual.

PHYSICAL CONTROL: For both species, mechanical control alone is not recommended because buds can arise from parent plants after mechanical damage or disturbance. Taking care to protect native plants, hand-dig small patches, ensuring all stem and rhizome parts are removed and destroyed. Immediately mulch the site and over-plant with suitable native grasses or forbs when seasonally appropriate. Monitor for several years, removing any re-sprouting stem and root fragments and seedlings. For larger infestations, use bio-control.

BIOLOGICAL CONTROL: Common St. Johnswort is considered to be under biological control in BC, primarily by Klamath Weed Beetle *(Chrysolina quadrigemina)*, and two other introduced beetle species that

feed on the plant: *C. hyperici,* and *C. varians*. Klamath Weed Beetle is now present on Vancouver Island and can be collected from plants the beetles are feeding on and released at new sites. There are no known biological controls for Aaron's Beard, although Klamath Weed Beetle was found feeding on this species in California.

CHEMICAL CONTROL: *Herbicides should only be used under expert advice and with extreme caution in Garry Oak ecosystems.* Common St. Johnswort has shown a resistance to herbicides in Australia; however, combinations of the selective herbicides 2,4-D and picloram, or 2,4-D and the non-selective glyphosate have been successful in the US. Treatments may need to be repeated annually until new plants no longer emerge.

OTHER TECHNIQUES: Burning is not recommended as a means of control because plants can persist as underground rhizomes, which will vegetatively reproduce. Above-ground parts can be fire-resistant.

PREVENTATIVE MEASURES: Prevent establishment by immediately removing dumped yard waste and young establishing plants. Common St. Johnswort seedlings are highly susceptible to competition, particularly by vigorous perennial grasses. Maintain trails to minimize widening, braiding, and soil compaction by establishing a dense cover of native grasses, forbs, and shrubs on either side. Re-vegetate bare soil similarly.

PERSISTENCE: Common St. Johnswort generates large seed banks. Seeds may be viable in the soil for up to 10 years; however, controlling vegetative reproduction is of greater importance in reducing infestations for both species.

GENERAL COMMENTS

Common St. Johnswort is widely cultivated for its anti-depressant properties. Its sap contains hypericin, a phototoxin that can cause skin irritation in livestock having light-coloured skin, and sometimes in humans, when exposed to sunlight.

SELECT REFERENCES

Krueger, J., and R.Sheley. 2002. St. Johnswort *(Hypericum perforatum)*. Montana State University, Montguide MT199810 AG, 4 pp.

Sellentin, E. January 27, 2012. Personal Communication. Sellentin's Habitat Restoration & Invasive Species Consulting Ltd., Comox, BC.

A bibliography of literature specific to Common St. Johnswort and Aaron's Beard is available at www.goert.ca/invasive.

For more information contact the Garry Oak Ecosystems Recovery Team, or see the website at www.goert.ca