

Saxifraga rivularis* ssp. *arctolitoralis
(Jurtzev & V.V. Petrovsky) M.H. Jørgensen & Elven

Saxifragaceae

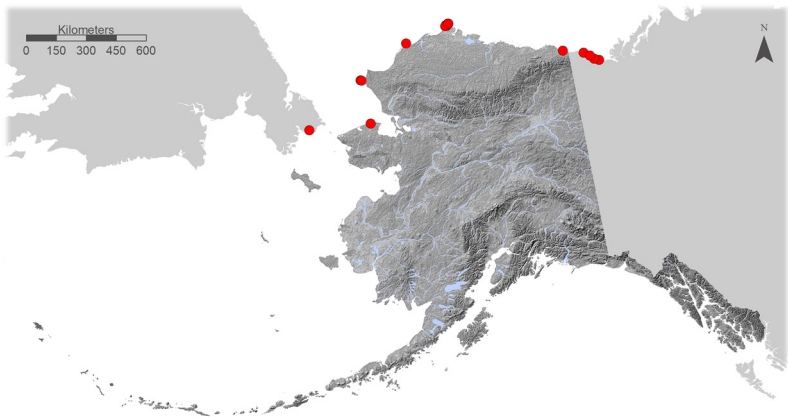
Synonyms: *Saxifraga arctolitoralis*

Global Distribution: Russian Far East through Alaska and northern Canada to Greenland (ssp. *rivularis* is amphi-Atlantic).

Alaska Distribution: Arctic Tundra, Bering Tundra.

Ecoregions Occupied: Beaufort Coastal Plain, Brooks Foothills, Kotzebue Sound Lowlands.

Conservation Status: S2 G5T2T3.



Description^{96, 174, 175}

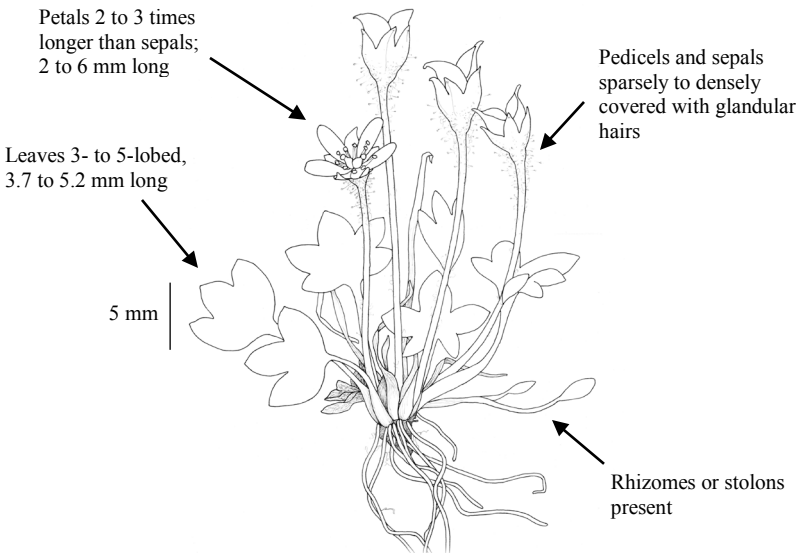


Illustration by Matthew Carlson

Saxifraga rivularis ssp. *arctolitoralis*

- General:** Perennial herb, mat-forming or loosely tufted, from thin rhizomes or stolons; stems one to several, usually erect, sometimes ascending, purple-tinted; bulbils present at stem bases.
- Leaves:** Basal leaves petiolate, sheathing, kidney-shaped, 3.7 to 5.2 mm long, slightly fleshy, glabrous to sparsely hairy, 3- to 5-lobed; lower stem leaves 1 or 2, short petiolate, sheathing, 3- to 5-lobed; upper stem leaves 1 or 2, sessile, not lobed.
- Flowers:** Inflorescences purple-tinted; flowers arranged in groups of 2 to 3, or less commonly solitary, at the ends of stems; pedicels and sepals sparsely to densely covered with glandular hairs 0.3 to 0.6 mm long; sepals erect, elliptic to ovate; petals white, sometimes pink-tinged, oblong to elliptic, 2 to 6 mm long, 2 to 3 times longer than the sepals.
- Fruits:** Capsules 2-beaked, containing numerous seeds.



© Bruce Bennett 2005

Ecology

Elevation:	Known from near sea level.
Landform:	Arctic seashores, soil banks, disturbed tundra, polygon tundra, hummocks.
Soil Type:	Silt, clay, ¹⁷⁵ sand, mud, gravel; often a colonizer of bare soil.
Moisture regime:	Dry to wet; usually in well-drained sites.
Slope:	Flat ground to steep or collapsing banks.
Aspect:	No particular aspect.
Vegetation type:	Wet meadows, moss, sparsely vegetated.
Associated species:	<i>Arctagrostis latifolia</i> , <i>Cochlearia groenlandica</i> , <i>Equisetum arvense</i> , <i>Puccinellia phryganodes</i> , <i>Ranunculus pygmaeus</i> , <i>Saxifraga foliolosa</i> , <i>Stellaria humifusa</i> , <i>Stellaria laeta</i> .
Longevity:	Perennial, clonal colonies interconnected by thin rhizomes are possibly long-lived. ⁹⁶
Phenology:	Flowering late June, probably earlier, through late July; fruiting mid-July through August.
Population estimate:	There are 9 known occurrences in Alaska, 8 of which have not been relocated since 1980; at least one population was locally common in 1971.
Reproductive Biology:	Plants regularly produce seed, largely through self-fertilization; ¹⁷⁶ plants also reproduce vegetatively from runners. ¹⁷⁶ In <i>Saxifraga rivularis</i> ssp. <i>rivularis</i> from Svalbard, 12.7% of seed germinated successfully after one year of storage. ¹⁷⁷ The small seeds are well-suited to long distance wind dispersal across snow and ice. <i>Saxifraga rivularis</i> ssp. <i>arctolitoralis</i> has likely spread from Beringian regions to northeastern Canada and Greenland in several independent events. ¹⁷⁸

Similar Species^{96, 174, 175}

Saxifraga rivularis ssp. *arctolitoralis* is the only subspecies of *Saxifraga rivularis* that occurs in Alaska and the other Beringian regions. However, it co-occurs with *Saxifraga rivularis* ssp. *rivularis* in eastern Canada. The two subspecies can be distinguished according to the morphological features listed in the table below.

Species	Plants	Hair Crosswalls	Inflorescences
<i>Saxifraga rivularis</i> ssp. <i>arctolitoralis</i>	Stems and inflorescences purple-tinted	Purple	1.7 to 3 cm long; sparsely to densely covered with glandular hairs
<i>Saxifraga rivularis</i> ssp. <i>rivularis</i>	Mostly green or purple-tinted only in inflorescence	Usually colorless, sometimes pale purple	2.7 to 7 cm long; glabrous or sparsely covered with glandular hairs

Saxifraga rivularis ssp. *arctolitoralis*

Saxifraga rivularis ssp. *arctolitoralis* is easily confused with *Saxifraga hyperborea*, which often grows in the same or adjacent habitat. Cody (1996) referred to *Saxifraga hyperborea* as *Saxifraga rivularis* s. l.²⁴ Hultén (1968) split *Saxifraga hyperborea* between his concepts of *Saxifraga rivularis* ssp. *flexuosa* and *Saxifraga rivularis* ssp. *rivularis* but did not include a taxon referable to *Saxifraga rivularis* ssp. *arctolitoralis*.²⁵ Reports of *Saxifraga rivularis* ssp. *arctolitoralis* from non-arctic regions are attributable to *Saxifraga hyperborea*. The table below shows the morphological features that distinguish these two taxa and additional superficially similar *Saxifraga* species.

Species	Habit	Rhizomes	Leaves	Petals
<i>Saxifraga rivularis</i> ssp. <i>arctolitoralis</i>	Mat-forming	Often present	3- to 5-lobed, 3.7 to 5.2 mm long	2 to 3 times longer than sepals; 2 to 6 mm long
<i>Saxifraga hyperborea</i>	Tufted, not mat-forming	Rhizomes and stolons absent	3- to 5-lobed, 3 to 6 mm long	1.5 times longer than sepals; 2 to 3.4 mm long
<i>Saxifraga cernua</i>	Solitary or in tufts	Weakly rhizomatous	3- to 7-lobed, 5 to 18 mm long	5 to 12 mm long
<i>Saxifraga bracteata</i>	Solitary or in tufts	Weakly rhizomatous	5- to 7-lobed, 7.4 to 11.2 mm long	Roughly equal to sepals; 2 to 5 mm long
<i>Saxifraga radiata</i>	Tufted	Weakly rhizomatous	5- to 7-lobed, 5 to 20 mm long	7 to 15 mm long