

## *Saxifraga rivularis*

Alpine brook saxifrage

### Status

Federal status: G5? N?, Not listed

NH state status: S1, Endangered

ME state status: Not ranked or listed

Flora Conservanda Division 2, regionally rare taxa with fewer than 20 occurrences in New England. Population trends are uncertain. Two of the historic occurrences in New England may not have been revisited in over 100 years. The other historic occurrence was surveyed for in 1990 and not found.

The expert panel estimated the WMNF viability at outcome B- to C+ now and in the next 20 years. Generally secure, but rare and hard to find populations, so it shouldn't be considered as high as other alpine species discussed by panel. It is expected that recreation impacts will increase in the next 20 years, but so will public awareness, which may mitigate some impacts.

### Distribution

An arctic species in North America and Eurasia. In North America, it is circumboreal, extending south to Newfoundland, eastern Quebec, Ontario, Manitoba, and the mountains of the western U.S. Disjunct in New Hampshire.

There are three historic occurrences and one extant occurrence documented in New Hampshire, in Sargents Purchase and Thompson and Meserve. There is some question about whether all known occurrences are on the WMNF. Several sources indicate an occurrence on state lands on Mt. Washington, however New Hampshire Natural Heritage Inventory indicates that all four documented occurrences are on WMNF lands. One historic occurrence includes reference to a water tower, which may indicate it is on State lands. The only extant occurrence documented by NHNHI is definitely on WMNF lands.

### Habitat

In New Hampshire, *Saxifraga rivularis* is an alpine obligate that occurs in alpine ravines, wet and mossy areas, wet cliffs, and some dry-mesic heath alpine/subalpine communities. It occurs in very small, disconnected patches. *Saxifraga rivularis* may benefit from reduced competition associated with low to moderate disturbance. It may be a nitrophile.

Considered by the expert panel to be part of the snowbank/streamside/wet ravine alpine communities, though it also uses dry-mesic heath habitats. Heavy late melting snow and high moisture levels characterize Snowbank/streamside/wet ravine alpine communities. Hydrology may not be as important to this species as others in these communities.

### Limiting Factors

Trampling by hikers is the greatest threat to this species, especially because the populations are so few and localized. The extant occurrence on the WMNF occurs right on a trail, but only in rock crevices. Based on this, there is an amount of disturbance that is limiting, but lesser amounts of disturbance may help reduce competition.

Global warming and acid rain may be threats, but it is uncertain how much they impact alpine species, and they are less important other threats.

#### Viability concern

*Saxifraga rivularis* occurs in multiple alpine communities, making selection of focal or surrogate species inappropriate. The White Mountains, if not the WMNF, contain the only population(s) in the eastern U.S. Generally secure, but rare enough and hard to find populations, so its viability shouldn't be considered as high as other alpine species of potential concern.

#### Management activities that might affect viability

The activity with potential to impact this species that the WMNF has some control over is trampling by hikers. Management that would reduce the density of trails in the alpine zone or help keep hikers on designated trails would reduce the potential for trampling.

Trail construction or other development in the alpine zone could affect this species if it would directly impact suitable habitat, alter the hydrology of a suitable area, or increase human traffic near suitable habitat. Trail maintenance activities could alter habitat suitability or directly impact individuals.

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