



United States Department of Agriculture
Natural Resources Conservation Service
Plant Materials Program

Skamania Germplasm

Sitka alder

Alnus viridis (Chaix) DC. ssp. *sinuata* (Regel)

Löve & D. Löve

A Conservation Plant Release by the Corvallis Plant Materials Center, Corvallis, Oregon



Foliage, male catkins, and immature female cones (strobili) of Skamania Germplasm Sitka alder. Photo by Dale Darris.

Skamania Germplasm is a selected class, natural tract pre-variety of Sitka alder (*Alnus viridis* ssp. *sinuata*) released in 2006 by the USDA Natural Resources Conservation Service, Corvallis, OR, in cooperation with the Agricultural Experiment Station of Oregon and the Agricultural Research Center of Washington. It is intended for conservation use at lower elevations in western Oregon and western Washington.

Description

Like Sitka alder in general, Skamania Germplasm is an open, rounded, deciduous shrub that forms a symbiotic association with nitrogen fixing bacteria which can improve soil fertility. Plants are typically multi-stemmed and bushy and grow up to 20 ft tall. The branches are slender, smooth, slightly zigzagged in appearance, and covered with a thin, reddish brown or gray bark. The leaves alternate on the stem and are oval with a pointed tip, ¾ to 2½ inches long, shiny green, and doubly toothed along the margins. Male and female flowers (catkins) appear in early spring and the small cone-like fruits (strobili) containing winged nutlets (seeds) mature in late fall or early winter. Sitka alder has a shallow root system. Life expectancy of this selection is 25 years.

Source

Skamania Germplasm Sitka alder (PI-504381, 9040484, PVGOR4) originates as seed collected from a natural grove growing above the north shore of the Columbia River at an elevation of 200 ft near Beacon Rock in Skamania County, Washington (122°01' W long., 45°38' N lat.). While not bred or hybridized, it was selected as the best performer in a common garden study of 64 alder populations evaluated at the Corvallis Plant Materials

Center from 1983 to 1990. It was chosen for its rapid growth rate, early bud break, vigor, higher stem density, size, better foliage appearance, and abundant fruit/seed production.

Conservation Uses

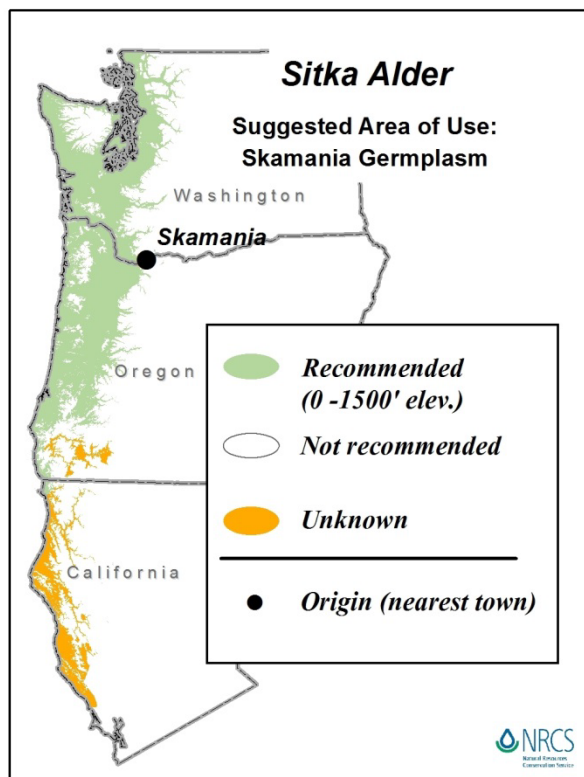
Skamania Germplasm is recommended for riparian corridor management and erosion control along low velocity streams and rivers. It also has potential use for reclamation of eroded, low-fertility sites and as a companion or nurse tree in new conifer plantations. Sitka alder can enhance site productivity through nitrogen fixation and the buildup of soil organic matter from the accumulation and decomposition of its nutrient-rich leaf litter. This selection may also be used in field windbreaks on moist sites.

Sitka alder is useful for wildlife habitat enhancement. Elk will browse the tender young shoots, while deer feed on leaves and twigs. Alder twigs and leaves are consumed by muskrats, rabbits, and squirrels, while the seeds, buds, or catkins are an important source of winter food for numerous song and game birds. Small birds also use the shrub as nesting habitat. Sitka alder is a source of pollen for honeybees, native bees, and other insects during the spring.

Area of Adaptation and Use

The anticipated area of adaptation and suggested area of use for Skamania Germplasm encompasses the western Columbia Gorge, Willamette Valley, Cascade and Olympic Mountains, Coast Range, and Puget Lowland Ecoregions below an elevation of 1,500 ft, including the Umpqua Valley of Oregon. This is roughly equivalent to the lower elevations of USDA Major Land Resources Areas (MLRA) 1, 2 and 3. Area of use may extend to portions of MLRAs 4 and 5 in southwestern Oregon and northwestern California, but more testing is needed (see map below).

Sitka alder grows best on somewhat poorly-drained to well-drained mineral soils with a regular water supply. However, it is less tolerant of wet soils than red alder. The species is best adapted to medium to coarse textured soils found along riparian zones, flood plains, and rocky slopes. Skamania Germplasm will also tolerate silts and silty clays. Soil pH can range from 3.8 to 7.5. The species is usually found in full sun, but has intermediate shade tolerance and can persist under a forest canopy. Similar adaptation is presumed for Skamania Germplasm.



Suggested area of use for Skamania Germplasm Sitka alder. Map by Ian Reid.

Establishment and Management for Conservation Plantings

Establishing Sitka alder directly from seed has met with mixed success and similar results are expected for Skamania Germplasm. Ideal seeding rates are unknown, but depth should be less than ¼ inch. Fall sowing is best in order to overcome seed dormancy during winter. With adequate weed control, Skamania Germplasm can readily establish using container or bareroot seedling stock. Fall planting is recommended along with the use of mulch and protection from animals. Spacing is 4 to 6 ft for most riparian, revegetation, and windbreak plantings on suitable sites. Irrigation is useful the first growing season. In forestry, Sitka alder can be interplanted with young conifers to improve long-term site productivity. Spacing must be adjusted to minimize competition with crop trees. However, specific management guidelines are site and crop tree dependent and are not yet developed for Skamania Germplasm.

Ecological Considerations

In certain northern latitudes and higher elevation growing regions, Sitka alder can readily volunteer into disturbed areas, making it potentially weedy and a competitor with valuable timber trees. However, in the intended area of use (lower elevations in western Oregon and western Washington), Skamania Germplasm is considered to have only a moderate ability to reproduce and spread naturally.

Skamania Germplasm is a known host for root weevils, aphids, and scales. It is also a potential host for other insect pests of Sitka alder such as flea beetles, leaf rollers, borers, sawflies, and leaf miners. Pathogens of Sitka alder include leaf spots, powdery mildew, alder top-kill, and stem cankers. The degree of susceptibility of Skamania Germplasm to these diseases is unknown but their occurrence was minor or lacking during the evaluation period.

Seed and Plant Production

Dry seed is typically dormant so it should be cold moist chilled for 2 months at 34 to 38°F or fall sown to promote germination. Propagation using hardwood cuttings has not been successful. The species is amenable to both containerized and bareroot nursery production using seed. It is suggested that the roots of seedlings be inoculated by the producer with suitable strains of N-fixing bacteria (*Frankia* species) and ectomycorrhizal fungi.

Availability

For conservation use: Skamania Germplasm seedlings and container stock are only available from a few specialized growers.

For seed or plant increase: A G2 seed orchard is maintained by the NRCS Corvallis Plant Materials Center. Certified G2 seed is available to growers for G3 seedling production. Growers may establish their own orchards for seed production using certified seedlings.

For more information, contact:
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Citation

USDA Natural Resources Conservation Service. 2013. Release brochure for Skamania Germplasm Sitka alder (*Alnus viridis* ssp. *sinuata*). USDA NRCS Corvallis Plant Materials Center, Corvallis, OR.

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