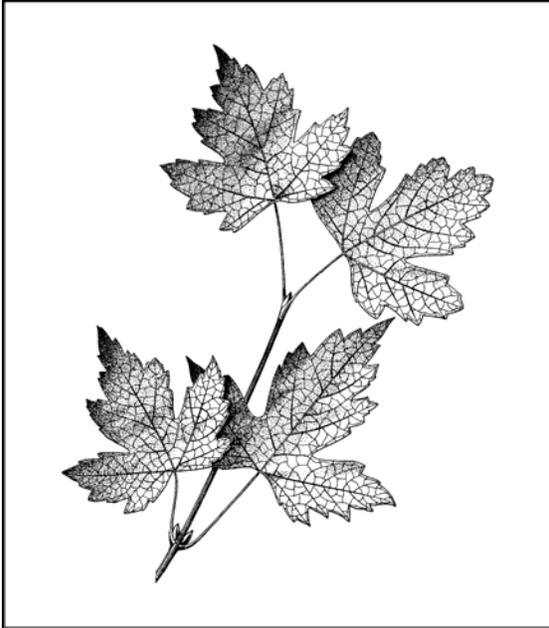


Acer glabrum Torr.
ACERACEAE

Rocky Mountain maple

Synonyms: *Acer tripartitum* Nutt.



General Description.—Rocky Mountain maple, also known as mountain maple and Douglas maple, is an upright, deciduous shrub or small tree, that ranges in height from 2 to 10 m, depending on variety and habitat. It usually grows with multiple stems, suckering from the base, and narrow crowns, and may be spindly in closed stands. The stem bark is thin, smooth, and gray, brown, or reddish brown. Branches are opposite and sparse with reddish twigs. Roots are woody, extensive, and often deep. Leaves vary considerably, depending on variety. They are opposite, glabrous, and have three to five lobes and rarely three distinct leaflets, and range from 2 to 10 cm wide and long. The margins are serrate or doubly serrate. They may be papery or leathery, depending on location and variety. Rocky Mountain maple occurs as monoecious and dioecious trees that have small greenish flowers borne in loose, few-flowered terminal corymbose cymes. Fruits are light brown (when mature) double samaras that diverge at angles less than 45° with wings about 2 cm long. (Abrams 1951, Anderson 2001, Wasser 1982, Welsh and others 1987).

Range.—Rocky Mountain maple occurs from southern Alaska south into northern Mexico and east from the Pacific Coast to Alberta, South Dakota and Nebraska (Anderson 2001). There are currently six recognized varieties: var. *diffusum* from the Pacific Southwest, var. *douglasii* from the Pacific Northwest, var. *greenei* from California, var. *glabrum* from the inland West, var. *meomexicanum* from the inland Southwest, and var. *torreyi* from Oregon, California, and Nevada (Natural Resources Conservation Service 2003). They differ at least in leaf shape, size, and thickness.

Ecology.—Rocky Mountain maple is moderately shade tolerant. It can grow (slowly) in the understory and midstory of closed coniferous forest but grows in full sun as well. A pioneer in disturbed areas, it starts from sprouts and seeds in burned areas, clearcuts, avalanche fields, and road sides, cuts and fills. It may grow along streams in drier areas. Rocky Mountain maple is a member of a huge number of plant associations, and is frequently dominant during seral stages of succession (Anderson 2001, Johnson 1995). The species grows in soils derived from most rock types, in all soil textures, and in skeletal soils. These are moist, well-drained to somewhat poorly drained soils that are moderately acid to slightly alkaline. It may be found at elevations from 350 m in British Columbia to 3,900 m in Colorado and Utah. Rocky Mountain maple is slightly more common in southern than northern aspects. Some of its locations have mean annual precipitation as low as 230 mm and as high as 1,500 mm (Anderson 2001). It tolerates competition well, usually outgrowing and overtopping young trees and most shrub species. Dull red leaf spots are caused by an unknown pathogen and bright red eriophyid mite colonies develop on the underside of leaves in some areas. The effects of these and other diseases appear to be negligible to populations of the species.

Reproduction.—Flowering occurs in early spring, depending on the elevation and latitude (Wasser 1982). Fruits mature in late summer or early autumn. Good seed crops occur every 1 to 3 years. There are about 30,000 cleaned seeds/kg (Zasada

and Strong 2003). Seeds disperse by whirling sideways as they descend, often carried by the wind. Seeds sometimes lie dormant for one or two growing seasons before germinating. Germination is epigeal. Natural seedlings can be common to abundant.

Growth and Management.—Rocky Mountain maple seedlings grow about 30 cm/year (Hansen 2003). On good sites sprouts may reach 1.3 m within 2 years and 3 m in 10 years. Maximum heights are reached in 30 to 40 years (Anderson 2001). Fruits can be picked by hand from low shrubs or clipped or shaken from tall shrubs and small trees. Mechanical dewinging may be advantageous to reduce bulk and improve handling before planting. The seeds can be stored for up to 3 years (Hansen 2003). Stratification of 180 days at 20 to 30 °C followed by 180 days at 3 to 5 °C is recommended before sowing. Germination of about 40 percent can be expected in about 30 days (Zasada and Strong 2003). Alternately, seeds are sown after collection and beds are maintained for 2 years because a substantial amount of the germination will occur after the second winter. Seeds are sown 0.6 to 2.5 cm deep and mulched in shaded beds. Seedlings are produced as bare-root stock or containerized plants (Zasada and Strong 2003). The species can be propagated by layering and rooted cuttings (Hansen 2003).

Benefits.—Rocky Mountain maple is an important part of the forest understory and pioneer vegetation following fires and clearcuts. It helps protect the soil, adds beauty to the forest, and furnishes food and cover for wildlife. It is an important browse species for domestic livestock, especially sheep, and wild ungulates. Samples of summer growth contained about 8.7 percent crude protein, 3.1 percent fat, 34.0 percent crude fiber, 51.0 percent N-free extract, and 3.2 percent ash. Samples of winter browse contained 5.9 percent crude protein, 2.4 percent fat, 33.3 percent crude fiber, and 54.2 percent N-free extract (Anderson 2001). The seeds and vegetative parts are consumed by ruffed and blue grouse, grosbeaks, and small mammals (Anderson 2001). The wood is hard, close-grained, and flexible. It was used by Native Americans for arrow shafts, snowshoe frames, ceremonial equipment, hut frames, and drying and smoking racks. The inner bark furnished material for mats and ropes. Today, the wood is mainly used for firewood (Hansen 2003) and smoking meat (Johnson 1995). The young shoots may be cooked and eaten as a vegetable (Pratt and others 2003). Native Americans made

infusions and decoctions of the twigs and wood to treat swelling and nausea, respectively (Moerman 1986). Rocky Mountain maple is widely used in environmental restoration projects within its native range and is an important ornamental species valued for its petite size, tolerance to shade, and bright red, yellow, and orange autumn colors (Hansen 2003).

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