



VEGETATION MANAGEMENT GUIDELINE

Smooth sumac (*Rhus glabra* L.)

SPECIES CHARACTER

DESCRIPTION

Smooth sumac is a shrub or small tree that can grow to 20 feet (6.1 meters) tall and has a spreading crown. Smooth sumac is typically found in stands of dense, multi-stemmed clones. The bark is light brown and smooth on young plants. Twigs are stout, angular, smooth, and covered with a whitish, waxy coating that can be wiped off. Buds are small with a round-ovoid leaf scar almost completely encircling the bud, alternate, pubescent, and gray-brown in color. Leaves are pinnately compound with 7-31 acuminate, serrate leaflets that are green on upper surface and nearly white on lower surface. Leaves turn red in autumn. The small, numerous flowers occur in terminal, much branched clusters. The fruit is a cluster of red drupes. Each drupe (a fleshy fruit with a hard or stony center) is round, has short hairs and contains a single seed. Some individuals may react negatively from contact with the juice of smooth or staghorn sumac, which can cause dermatitis (irritation of the skin). Individuals highly sensitive to poison sumac or poison ivy should wear gloves and long sleeves when cutting sumac.

SIMILAR SPECIES

Black walnut is a tree with pinnately compound leaves, serrate leaflets that are green on both surfaces, but often has the end leaflet lacking. Winged sumac has pinnately compound leaves and serrate leaflets with winged leaf stalks. Staghorn sumac has pinnately compound leaves and serrate leaflets with velvet-covered twigs. Smooth sumac should be accurately identified before attempting any control measures. If identification of the species is in doubt, the plant's identity should be confirmed by a knowledgeable individual and/or by consulting appropriate manuals or keys.

DISTRIBUTION

Smooth sumac is native to and occurs throughout the U.S. and into southern Canada, but is most common in the eastern U.S. It occurs throughout Illinois but is not as common in southern counties as winged sumac.

HABITAT

This species is usually found on disturbed sites, abandoned fields, railroad edges, fence rows, rights-of-way, etc. It also grows in native communities such as mesic, dry-mesic, and dry upland prairies, and openings in oak forests.



LIFE HISTORY

This native but sometimes aggressive shrub occurs in clones and spreads by seeds and rootstocks. It flowers from late May until mid-August. Seeds are formed by September. It sprouts easily, grows rapidly. Aboveground stems are relatively short-lived, but the roots persist and form new stems. Re-sprouts grow rapidly and can reach 3 feet in one year.

EFFECTS UPON NATURAL AREAS

Smooth sumac is known to shade and replace prairie plants and endangered species. It is one of the primary woody invaders of glades and hill prairies in much of Illinois, where its dense clones eliminate other native species.

CONTROL RECOMMENDATIONS

RECOMMENDED PRACTICES IN NATURAL COMMUNITIES OF HIGH QUALITY.

Managers first must decide what part of the population should be removed. In general, sumac can be left in ravines and draws within prairie communities. It should not be eliminated totally from communities where it occurred in pre-European settlement times, but should be controlled where it has invaded or spread to the detriment of other native vegetation.

With all control methods, the entire clone should be treated. Stems may be cut with an axe, lopper, gasoline powered brush cutter, or sharp blade in late spring-early summer shortly after flowering. Cutting at this time can help control the spread of sumac since this is the time when carbohydrate reserves are the lowest and the species has a reduced capacity to respond to top-removal. Sprouts then should be cut again in August. Spot-treating cut stumps with glyphosate (trade name Roundup) will minimize re-sprouting. The label recommends using a 25.0% - 50.0% active ingredient solution Roundup for stump treatment, a 25.0% active ingredient solution has proven effective. Roundup can be applied to cut stumps either with a low pressure hand-held sprayer or by wiping it on the stump with a sponge paint applicator or similar device. The herbicide applicator must be extremely careful not to contact non-target species with Roundup since this herbicide is nonselective and will kill most photosynthetically active plants when the herbicide is applied in July or August. By law, herbicides only may be applied as per label instructions and by licensed herbicide applicators or operators when working on public properties.

If sumac is intermingled with desirable native plants, Roundup should not be used and the sumac should be cut twice, once in July and once in August. Cutting at the appropriate time is crucial for effective control. Double-cutting (once in July and once in August) may need to be repeated for several consecutive years to achieve effective control in dense populations.

Basal bark or cut stump treatment with oil based triclopyr herbicide (trade name Garlon 4, Tahoe 4E) may be effective. Garlon 4 should be mixed vegetable or mineral oil to form a 10.0% active ingredient solution. For basal bark applications, spray basal portions of the stems to a height of 12 - 15 inches (30 - 38 cm) to thoroughly wet the stem, but not to the point of runoff. For best results the circumference of each stem

should be treated. Basal bark treatments can be employed at any time during the year, except when snow cover is present, if rain is forecast within twelve hours after application, or when stems are wet.

Foliar applications of the broadleaf specific herbicides may be effective while reducing damage to non-target grasses and sedges. Triclopyr formulated as a triethylamine salt (Garlon 3A, Tahoe 3A) has proven effective when applied as a 0.4% active ingredient solution. Treated shrubs may survive initial treatment and begin stunted growth the following year. Typically, the leaves will be much smaller and lack the glossiness of healthy leaves. Follow-up treatment may be necessary. A 0.5% active ingredient solution of 2,4 D marketed under a number of trade names including Platoon, may also be an effective control measure.

Injection using the EZ-Ject lance with Roundup capsules is an effective control. For plants with numerous stems, each stem greater than 2 cm (3/4 inch) may need to be treated to ensure the plant is killed. Stems larger than 5 cm (2 inches) in diameter should be injected with an additional capsule for each 2.5 cm (1 inch) increase in stem diameter. For plants with multiple stems less than 1.5 cm (1/2 inch), a capsule may be injected into the upper portion of the root crown.

Where fire will carry through a stand, burning in August will often kill mature plants, but sprouts must be cut. However, August burns may disrupt late nesting wildlife. In glades and prairies, an occasional August burn may be sufficient. Studies indicate that germination rates of seeds trapped in the litter layer increased following prescribed burning (Cain and Shelton 2003). However, prescribed burning did not significantly affect germination rates for seeds in contact with mineral soil or 45 cm above ground level. Fire plus herbicide may provide better long term effects.

For maintenance control, stems near the edges of high-quality prairie or glade communities should be cut and the stumps spot-treated with Roundup, as described above, to prevent invasion by rootsprouts. An occasional August fire may be sufficient to keep the sumac population in check. Midsummer (July or August) mowing or cutting of sumac can reduce its vigor.

RECOMMENDED PRACTICES ON BUFFER AND SEVERELY DISTURBED SITES

The control procedures recommended above for high quality natural areas are also applicable to buffer and severely disturbed sites. In addition, foliar applications of Garlon 3A or Tahoe 3A (a selective translocated herbicide that is a formulation of triclopyr) or 1.0-2.0% Roundup applied according to label instructions also are effective. If herbicides are used, great care should be taken to avoid contacting non-target plants with the herbicide. In addition, **do not spray so heavily that herbicide drips off the target species.** The herbicide should be applied while backing away from the treated area to avoid walking through the wet herbicide. Large smooth sumac clones should not be allowed to develop next to naturally open communities.

INEFFECTIVE OR FAILED PRACTICES

- hand control: fall or winter cutting removes above ground growth, but sumac will resprout vigorously.

- mowing: early- or late-season mowing has little effect and is not practical on all sites, particularly steep glades and hill prairies. As mentioned above, midsummer mowing or cutting is an effective control with repeated visits.
- fire: early spring fires can actually increase sprouting and encourage the spread of smooth sumac. Dormant season (late fall, winter) fires do not control sumac.
- herbicides: herbicides that are not translocated through the plant may not be effective if applied during the dormant season.
- grazing: encourages sumac growth and spread.
- biological controls: no feasible biological controls are known.

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