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Photo: Great Smoky Mountain NP



Photo: James H. Miller, USDA FS



Photo: Paul Wray

## Tree of Heaven

*Ailanthus altissima*



**Habit:** Deciduous small to large tree; 12-20 m (40-65 ft) tall and 60-100 cm (24-40 in) in diameter; crown wide-spread with multiple branches.

**Leaves:** Alternate; pinnately compound with 11-30 lance-shaped leaflets; leaves 30-90 cm (1-3 ft) long; 1-5 small gland tipped teeth near the base of each leaflet; dark green above, pale green below, turn yellow in fall; smell like rancid peanut butter when crushed.

**Stems/bark:** Twigs very stout, light to dark brown, smooth with large V-shaped leaf scars; bark thin, gray to brownish gray, smooth with shallow cracks appearing on older trunks.

**Flowers:** Small, yellow-green, five-petaled; borne in dense clusters near ends of upper branches; bloom in late spring; male and female flowers on different plants; pollen has an offensive odor.

**Fruits/seeds:** Two-winged, papery, flat samara; reddish when ripe; develop in clusters on female trees in fall; persist in winter; germinate readily; dispersed by wind, birds and water.

**Habitat:** Shade intolerant; thrives in poor soils; found in disturbed soils, fence rows, fields, roadsides, woodland edges, forest openings and rocky areas.

**Reproduction:** By seed and vegetatively via root suckering; up to 350,000 seeds produced annually by a single plant.

**Similar species:** Crushed leaves or broken stems of native sumacs (*Rhus* spp.), walnuts (*Juglans* spp.) and ash (*Fraxinus* spp.) lack rancid peanut butter aroma and gland-tipped teeth at base of leaves.

**Comments:** Native to Asia. Extensive cloning; allelopathic properties present; very fast growing.

**Monitoring & rapid response:** Monitor roadsides and woodland edges, paths; hand pull seedlings before taproot develops (< 3 months) as taproot fragments may resprout. Resprouts following cutting, girdling, mowing, and burning—follow-up treatment required; girdling followed by herbicide most effective; treat cut stumps with herbicide—all stems in a clone must be treated; basal bark treatment with herbicide provides good root kill, particularly in fall; foliar herbicide treatment is effective on small trees.