

Excerpts from the first edition (2010) of *Wild Urban Plants of the Northeast: A Field Guide*

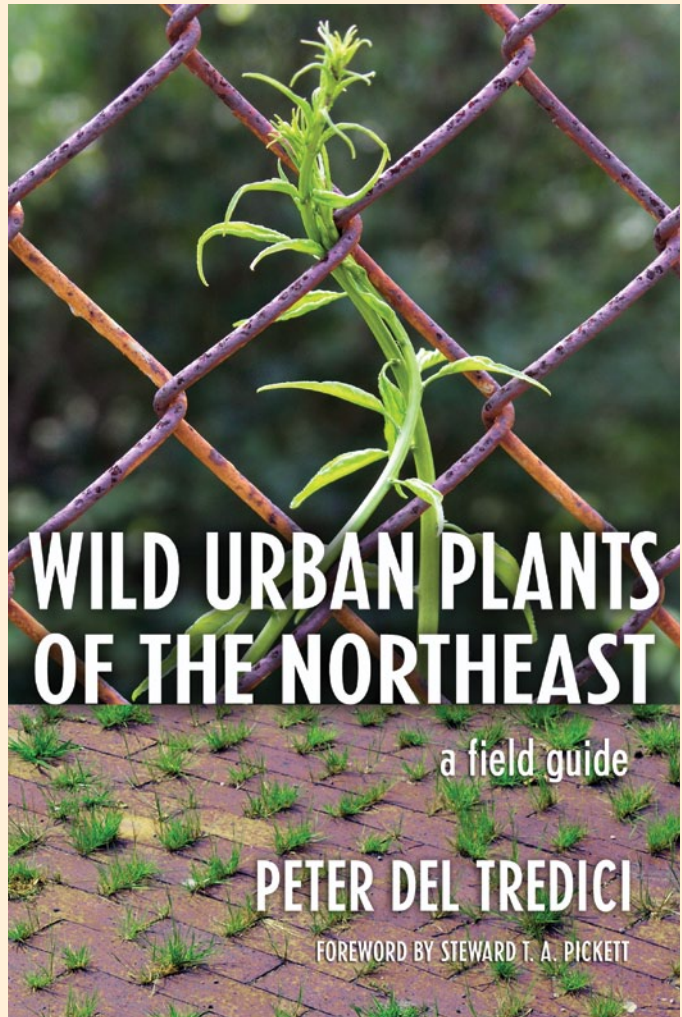
Peter Del Tredici

EDITOR'S NOTE:

Ever wonder what kind of tree that is, the one growing from a crack in the asphalt parking lot at work? Or what that tangled vine engulfing the slope by the subway station might be? *Wild Urban Plants of the Northeast: A Field Guide*, written by long-time Arnold Arboretum researcher Peter Del Tredici, may have your answer. Del Tredici's goal with this book is "to help the general reader identify plants growing spontaneously in the urban environment and to develop an appreciation of the role they play in making our cities more livable." Many of the 222 plants featured in the book could be called weeds, and some are notoriously invasive. The author eschews these labels, however, pointing out that in many urban/suburban areas the environment has been so radically altered (think non-native fill soils, soil compaction and contamination, impermeable pavement, and pollution) that the presence of *any* plants has benefits.

This handy guide is organized by plant families and includes both woody and herbaceous plants. Numerous color photographs and extensive information is provided for each species, including place of origin, descriptions of vegetative, flower, and fruit characteristics, and habitat preference. Some fascinating details emerge from the "Cultural Significance" subsections—for example: "During World War II, the silky seed hairs [of common milkweed, *Asclepias syriaca*] were used as a substitute for kapok to fill "Mae West" life vests. Between 1943 and 1945, a million such flotation devices were filled with the floss from some 24 million pounds (11 million kilograms) of milkweed pods."

Following are half a dozen plant species featured in the book. Reprinted from: Peter Del Tredici, *Wild Urban Plants of the Northeast: A Field Guide*. Copyright © 2010 by Cornell University. Used by permission of the publisher, Cornell University Press. 374 pages. ISBN 978-0-8014-7458-3.



***Toxicodendron radicans* (L.) Kuntze** **Poison Ivy**

SYNONYMS: *Rhus radicans*, *Rhus toxicodendron*, poison vine

LIFE FORM: deciduous vine; up to 50 feet (15 m) long

PLACE OF ORIGIN: eastern North America

VEGETATIVE CHARACTERISTICS: This ubiquitous and highly variable vine can climb tall trees, grow as a ground cover, or form a dense, spreading shrub. Regardless of its growth habit, all of its branches have a distinct horizontal orientation. The older climbing stems produce conspicuous aerial roots (the meaning of the word *radicans*) that give them a “bearded” appearance. The alternate, compound leaves are composed of 3 glossy leaflets (source of the old warning “leaves of three, let them be”), each about 4 inches (10 cm) long with smooth or coarsely toothed margins; the terminal leaflet always has a petiole while the lateral leaflets are nearly sessile. Leaves of plants growing in the shade turn dull yellow in fall; plants in full sun turn bright red.

FLOWERS AND FRUIT: Poison ivy produces clusters of inconspicuous 5-petaled, yellowish green, insect-pollinated flowers in the axils of the leaves from May through June on separate male and female plants. The berries on female plants turn from green to gray to white when they mature in September.

GERMINATION AND REGENERATION: Fruits are eaten by birds, and seeds germinate beneath their roosts. Established plants spread by underground rhizomes and stems that root where they touch the ground.

HABITAT PREFERENCES: Poison ivy grows best in moist soils in shade or full sun, but can also be found in dry, sandy sites. Its tolerance of high salt concentrations accounts for its abundance near the ocean as well as along busy roadsides. In the urban environment it is common on rock outcrops and stone walls; climbing up telephone poles, buildings, and chain-link fences; along unmowed highway banks and railroad tracks; and climbing up tree trunks in moist or dry woodlands.

ECOLOGICAL FUNCTIONS: Tolerant of roadway salt and compacted soil; food and habitat for wildlife; erosion control on slopes.

CULTURAL SIGNIFICANCE: Touching any part of this plant, in summer or winter, causes allergic dermatitis in 60–80% of people. The offending ingredient is urushiol, which is located in the sap. Once absorbed through the skin it causes a characteristic itchy rash within a day or two of contact. Poison ivy has been used in traditional medicine and was one of the herbs sold by the Shakers to treat chronic paralysis, rheumatism, skin diseases, and bladder paralysis. In 1624 Captain John Smith became the first European to describe the plant, which “being but touched causeth rednesse, itching, and lastly blisters, the which howsoever after a while passe away of themselves without further harm.”

SIMILAR SPECIES: Poison ivy is often confused with Virginia creeper (*Parthenocissus quinquefolia*), a climbing vine with 5 leaflets per leaf and nonhairy stems.



Poison ivy foliage



Aerial roots give poison ivy stems a distinctive "bearded" appearance



Poison ivy will climb on anything



The mature, horizontal growth habit of poison ivy growing on an iron fence



Poison ivy in full fall color along a roadside chain-link fence



Poison ivy fruits ripen in September

Paulownia tomentosa (Thumb.) Sieb. & Zucc. ex Steudel
Princess Tree

SYNONYMS: *Paulownia imperialis*, empress tree, karri-tree, royal paulownia

LIFE FORM: deciduous tree, up to 60 feet (18 m) tall

PLACE OF ORIGIN: temperate East Asia

VEGETATIVE FEATURES: *Paulownia* is fast-growing, sparsely branched tree with stout, pithy twigs. On mature trees the opposite, heart-shaped leaves are 6–12 inches (12–30 cm) long and nearly as wide, and are covered with velvety hairs, especially on the undersides; on juvenile trees the leaves can be up to 2 feet (70 cm) long and have 2 small secondary lobes. The leaves fall while green or turn brown after experiencing a hard freeze in autumn.

FLOWERS AND FRUIT: Prominent clusters of fuzzy brown flower buds develop at the ends of the branches in the fall. The buds remain in a rudimentary state of development throughout the winter, then expand in April or May to produce spectacular 2 inch (5 cm) long tubular flowers. The flowers, which are pale violet with dramatic yellow stripes on the inside of the corolla, are pollinated mainly by bees. They are followed by pointed, pecan-shaped woody capsules about 1.25–2 inches (3–5 cm) long that split open to release hundreds of small, wind-dispersed seeds in the fall. The spent pods often remain on the tree for several years. A mature *Paulownia* tree can produce up to 20 million seeds per year.

GERMINATION AND REGENERATION: The seeds germinate in spring on bare ground. Mature plants typically produce root suckers, especially following damage to the primary trunk. These shoots can arise at a considerable distance from the trunk, and most people assume they are seedlings.

HABITAT PREFERENCES: Princess tree is a light-demanding, drought-tolerant plant that grows in a variety of disturbed urban habitats, including vacant lots, chain-link fence lines, pavement and masonry cracks, rock outcrops, and highway and railroad banks. This species is currently most abundant in the mid-Atlantic region but can be expected to move farther north as the climate becomes warmer.

ECOLOGICAL FUNCTIONS: Heat reduction in urban areas; tolerant of roadway salt and compacted soil; erosion control on slopes; soil building on degraded land.

CULTURAL SIGNIFICANCE: *Paulownia* was introduced into North America in 1844. Its spread throughout the East was supposedly facilitated when seeds used as packing material to protect imported Chinese porcelain were discarded. The species is often hyped in Sunday newspaper supplements as a “wonder tree” that grows 6 feet (2 m) a year. Its light, fine-grained wood is highly valued in Japan for making a variety of specialized items.

SIMILAR SPECIES: Hardy catalpa (*Catalpa speciosa*) has smooth leaves and long, cigar-shaped fruits.



Princess tree seedling colonizing an abandoned building in New London, Connecticut



Growth habit of a spontaneous princess tree in New London, Connecticut



Princess tree saplings growing in good conditions produce huge leaves

Princess tree flowers



Winter twig of princess tree showing spent fruits and immature flower buds ready to open in spring

***Vitis riparia* Michx. Riverbank Grape**

SYNONYMS: frost grape, wild grape

LIFE FORM: deciduous woody vine; climbing up to 60 feet (18 m)

PLACE OF ORIGIN: eastern North America

VEGETATIVE CHARACTERISTICS: Riverbank grape produces simple, alternate leaves with 3 lobes and relatively few hairs on the underside; they are palmately veined with toothed margins and 4–8 inches (10–20 cm) long. The vines climb by means of forked, coiling tendrils that are produced along the stem opposite the leaves. With age, the dark brown stems can become several inches (5–15 cm) thick with bark shedding off in thin strips. Leaves turn yellow in the fall.

FLOWERS AND FRUIT: Separate male and female plants produce inconspicuous chains of greenish yellow, insect-pollinated flowers in late spring to early summer; they arise in the axils of the leaves and are about 4 inches (10 cm) long. The purple-black fruits are smaller than cultivated grapes, about 0.25–0.5 inch (6–12 mm) in diameter, and are produced abundantly by female plants in the fall.

GERMINATION AND REGENERATION: Riverbank grapes are eaten by a variety of birds, and the seeds germinate freely under their roosts; trailing stems root where they touch the ground.

HABITAT PREFERENCES: Seedlings are highly shade tolerant; once they reach the sunny forest canopy the vines spread out and begin flowering. Wild grapes are vigorous climbers that can easily overwhelm adjacent vegetation. In the urban environment they are common in the understory of moist woods and thickets, along the banks of streams and rivers, climbing chain-link fences, and on roadside guardrails. Like most vines, wild grapes grow best when their roots are situated in moist, shady soil and their leaves are in full sun.

ECOLOGICAL FUNCTIONS: Tolerant of roadway salt; food and habitat for wildlife; erosion control on slopes.

CULTURAL SIGNIFICANCE: The fruit is edible and makes excellent jelly. Native Americans made a tea made from the leaves for medicinal use. Established wild grapes can be very destructive to forest trees, particularly when weighted down by heavy, wet snow or ice.

RELATED SPECIES: The leaves of fox grape (*Vitis labrusca* L.) have a dense covering of brownish or whitish hairs on the underside, giving them a rusty or grayish appearance when they blow in the wind. The fruits are large, about 0.75 inch (2 cm) in diameter, and sweet. This species is one of the parents of the famous hybrid ‘Concord’ grape developed in 1852 by Ephraim Bull of Concord, Massachusetts.



Riverbank grape on a telephone line in Detroit

Riverbank grape overwhelming adjacent vegetation



Tangle of riverbank grape stems



Riverbank grape foliage



Riverbank grape fruits



The woolly undersides of fox grape leaves are distinctive

***Daucus carota* L. Wild Carrot**

SYNONYMS: Queen Anne's lace, bird's nest

LIFE FORM: herbaceous biennial; up to 3–4 feet (1–1.3 m) tall

PLACE OF ORIGIN: Eurasia and North Africa

VEGETATIVE CHARACTERISTICS: Wild carrot is a tall, slender plant with finely dissected, pinnately compound foliage that has an aromatic, carrot-like odor. During its first year the plant forms a rosette of bipinnately compound leaves—up to 6 inches (15 cm) long—that remain green through the winter; the second year it sends up a tall flowering stalk with alternate leaves. The stout, whitish taproot is difficult to pull out of the ground.

FLOWERS AND FRUIT: Wild carrot produces numerous lacelike white flowers in flat-topped, terminal clusters (umbels) from June through September; they can be insect- or self-pollinated. About one in four plants has a single deep purple flower (the “fairy seat”) in the center of the cluster of all-white flowers. As the seeds develop, the umbels close up and develop a form resembling a bird's nest. The tiny seeds are covered with numerous barbs that facilitate their dispersal by animals. A single plant can produce up to 4,000 seeds, and the tall stalks are often bent over by their weight.

GERMINATION AND REGENERATION: The seeds germinate readily on disturbed, sunny sites in spring.

HABITAT PREFERENCES: Wild carrot tolerates full sun and dry soil. It is common in abandoned grasslands and urban meadows, vacant lots, rubble dumps, rock outcrops, stone walls, roadsides, and railroad rights-of-way. In its native European habitat it is common in coastal meadows.

ECOLOGICAL FUNCTIONS: Disturbance-adapted colonizer of bare ground; tolerant of roadway salt and compacted soil; food for wildlife.

CULTURAL SIGNIFICANCE: Seeds of wild carrot have long been used in European traditional medicine as a “morning-after” contraceptive, and in India to reduce female fertility. Indeed, Dioscorides' first-century herbal, *De Materia Medica*, clearly describes its anti-fertility properties. The use of wild carrot as a contraceptive has been documented in the Appalachian Mountains of North Carolina as well, passed down through oral tradition (Riddle, 1999). The plant has also been used as a diuretic to cure kidney and bladder stones and to eliminate worms. Although it is considered the ancestor of the domestic carrot, the roots are barely edible. In *American Weeds and Useful Plants* (1859), Darlington interpreted the presence of this plant as a sign of moral weakness: “When it gets on the premises of a careless, slovenly farmer, it soon multiplies so as to become a source of annoyance to the whole neighborhood.”



Wild carrot growth habit



Wild carrot flowering on a roadside



Wild carrot foliage



Wild carrot flower head with "fairy seat" in the center



Developing seeds of wild carrot

***Chenopodium album* L. Common Lambsquarters**

SYNONYMS: fat hen, pigweed, mealweed, goosefoot, bacon-weed, wild spinach

LIFE FORM: summer annual; up to 6 feet (2 m) tall

PLACE OF ORIGIN: Europe

VEGETATIVE CHARACTERISTICS: The stems have conspicuous grooves and are usually green, but sometimes show some purple coloration at the point where the branches are attached. The plant branches freely and develops a broad, pyramidal shape at maturity. The alternate leaves are dull green, 2–4 inches (5–10 cm) long, roughly triangular to rhomboidal (hence the common name goosefoot), and have irregular teeth and gray to white, “mealy” undersides. The whole plant has a semi-succulent appearance and sometimes turns purplish at the end of the growing season. Lambsquarters produces a short, tenacious taproot.

FLOWERS AND FRUIT: Large, pale green inflorescences terminate the branches in late summer; the bisexual flowers lack petals, are inconspicuous, and are mainly self-pollinated. The fruits are tiny, bladderlike structures containing a single seed. A large plant can produce up to 75,000 seeds.

GERMINATION AND REGENERATION: Seeds fall to the ground at maturity and germinate in early summer; they are also eaten and dispersed by ground-feeding birds. Buried seeds can remain viable in the soil for decades if not centuries.

HABITAT PREFERENCES: Lambsquarters tolerates a wide variety of soil types and moisture and light regimens, but reaches its full potential in rich soil. The plant is noteworthy for its ability to remain green after other plants have “browned out” from drought or frost. It is common in all sorts of disturbed sites, including neglected ornamental landscapes, minimally maintained public parks, vacant lots, rubble dumps, small pavement openings, chain-link fence lines, rock outcrops, stone walls, unmowed highway banks and median strips, and railroad rights-of-way.

ECOLOGICAL FUNCTIONS: Tolerant of compacted soil; food and habitat for wildlife; soil building on degraded land; phytoremediation in degraded urban landscapes by absorbing heavy metals (zinc, copper, and lead) and binding them to organic matter.

CULTURAL SIGNIFICANCE: Young lambsquarters shoots are edible in the spring after the fine powder that typically covers the leaves is washed away. In times of famine in Europe the seeds were boiled to make gruel or baked into bread (Napoleon and his troops had to live on this at times). The grain quinoa, which has recently become popular as a health food, is the seed of *Chenopodium quinoa*, a species cultivated at high elevations by the Incas.

RELATED SPECIES: Mexican tea or wormseed (*Chenopodium ambrosioides* L.) is an upright plant that can grow up to 3 feet (1 m) tall and is native to Central and South America. It produces small, bright green, narrow leaves with wavy margins; while it grows best in full sun, it tolerates shade. The foliage emits a pungent camphor or anise-like odor when crushed, and the seeds have long been used to expel worms, especially in children. Mexicans call the plant *epazote* and use it as an aide to digestion and typically add it to chili sauces and bean dishes to reduce flatulence.



Lambsquarters in full flower



Lambsquarters flowers



Lambsquarters growing between a sidewalk and curb



Lambsquarters foliage



Lambsquarters seeds are included free of charge in most topsoil



Mexican tea growth habit

Panicum dichotomiflorum Michx. Fall Panicum

SYNONYM: smooth witchgrass

LIFE FORM: summer annual; from 6 inches (30 cm) to 4 feet (1.3 m) tall

PLACE OF ORIGIN: eastern North America

VEGETATIVE CHARACTERISTICS: The growth habit of fall panicum can vary from totally prostrate (when growing in poor soil) to upright (when growing in rich soil), and its stems display a distinctive zigzag form. The leaf blades are mostly smooth with a conspicuous white midrib; the leaf sheaths are also smooth and typically are reddish purple. The fibrous root system is extremely tenacious.

FLOWERS AND FRUIT: Fall panicum produces wind-pollinated flower panicles from late summer through fall, followed by loose, spreading seed heads that turn purple and then brown with the first frost.

GERMINATION AND REGENERATION: The seeds germinate readily on bare ground.

HABITAT PREFERENCES: This species is very common in the urban environment, especially in sunny sites with compacted soil, including small pavement cracks and under highway guardrails where blacktop and concrete come together.

ECOLOGICAL FUNCTION: Disturbance-adapted colonizer of bare ground.

CULTURAL SIGNIFICANCE: The presence of fall panicum in cracks in parking lots and sidewalks creates the impression of neglect.

RELATED SPECIES: Switchgrass (*Panicum virgatum* L.) is a large, clump-forming perennial grass native to North America. It often grows in dry soils along sandy roadsides and at the upland edge of salt marshes and other wetlands. Its dead leafy stems persist through the winter. Because of its ability to produce abundant biomass on marginal land—it can grow up to 7 feet (2.1 m) tall—switchgrass is being promoted for cultivation on marginal land as a source of cellulosic ethanol. Many cultivars of this species have been selected for ornamental purposes.



Fall panicum growth habit



Fall panicum taking over an abandoned parking lot



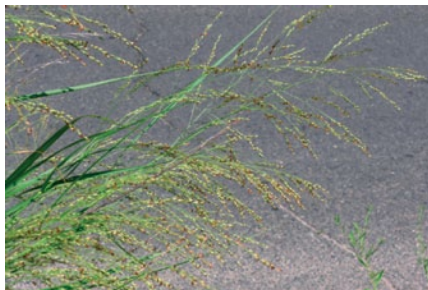
Fall panicum in its urban niche



Switchgrass growing in a median strip



Fall panicum in bloom



Switchgrass in bloom