Thuja occidentalis  
White-Cedar

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INTRODUCTION

This slow-growing tree reaches 25 to 40 feet in height and spreads to about 10 to 12 feet wide, preferring a wet or moist, rich soil (Fig. 1). Transplanting is moderately easy if plants are root-pruned and either balled and burlapped or potted. White-Cedar likes high humidity and tolerates wet soils and some drought. The foliage turns brownish in winter, especially on cultivars with colored foliage and on exposed sites open to the wind.

GENERAL INFORMATION

Scientific name: Thuja occidentalis  
Pronunciation: THOO-yuh ock-sih-den-TAY-liss  
Common name(s): White-Cedar, Arborvitae, Northern White-Cedar  
Family: Cupressaceae  
USDA hardness zones: 2 through 7 (Fig. 2)  
Origin: native to North America  
Uses: hedge; recommended for buffer strips around parking lots or for median strip plantings in the highway; reclamation plant; screen; specimen; no proven urban tolerance  
Availability: somewhat available, may have to go out of the region to find the tree

DESCRIPTION

Height: 25 to 40 feet  
Spread: 10 to 12 feet  
Crown uniformity: symmetrical canopy with a regular (or smooth) outline, and individuals have more or less identical crown forms

Figure 1. Middle-aged White-Cedar.
Figure 2. Shaded area represents potential planting range.

**Foliage**

_Foliage_:

- **Leaf arrangement**: alternate (Fig. 3)
- **Leaf type**: simple
- **Leaf margin**: entire
- **Leaf shape**: scale-like
- **Leaf venation**: none, or difficult to see
- **Leaf type and persistence**: evergreen; fragrant
- **Leaf blade length**: less than 2 inches
- **Leaf color**: green
- **Fall color**: no fall color change
- **Fall characteristic**: not showy

**Fruit**

_Fruit_

- **Fruit shape**: oval
- **Fruit length**: < .5 inch
- **Fruit covering**: dry or hard
- **Fruit color**: brown

_Fruit characteristics:_ does not attract wildlife; inconspicuous and not showy; no significant litter problem; persistent on the tree

**Trunk and Branches**

_Trunk/bark/branches:_ grow mostly upright and will not droop; not particularly showy; should be grown with a single leader; no thorns

_Prune requirement:_ needs little pruning to develop a strong structure

_Breakage:_ resistant

_Current year twig color:_ brown; green

_Current year twig thickness:_ thin

_Wood specific gravity:_ 0.31

**Culture**

_Light requirement:_ tree grows in part shade/part sun; tree grows in full sun

_Soil tolerances:_ clay; loam; sand; slightly alkaline; acidic; extended flooding; well-drained

_Drought tolerance:_ moderate

_Aerosol salt tolerance:_ low

_Soil salt tolerance:_ moderate
Figure 3. Foliage of White-Cedar.

**Other**

**Roots:** surface roots are usually not a problem  
**Winter interest:** no special winter interest  
**Outstanding tree:** not particularly outstanding  
**Invasive potential:** little, if any, potential at this time  
**Ozone sensitivity:** tolerant  
**Verticillium wilt susceptibility:** not known to be susceptible  
**Pest resistance:** very sensitive to one or more pests or diseases which can affect tree health or aesthetics

**USE AND MANAGEMENT**

Best used as a screen or hedge planted on 8 to 10-foot-centers. There are better specimen plants but it can be placed at the corner of a building or other area to soften a view. Many of the natural stands in the United States have been cut. Some remain in isolated areas along rivers throughout the East.

White-Cedar has given rise to many cultivars, many of which are shrubs. Cultivars include: ‘Booth Globe’ - low, rounded with a flat top; ‘Compacta’ - dense and compact; ‘Compacta Erecta’ - semi-dwarf, pyramidal; ‘Douglasii Pyramidalis’ - dense, columnar; ‘Emerald Green’ - good winter color; ‘Ericoides’ - dwarf, brownish foliage in winter; ‘Fastigiata’ - narrow, columnar; ‘Globosa’ - dense, rounded; ‘Hetz Junior’ - dwarf, wider than it is tall; ‘Hetz Midget’ - slow grower, quite dwarf, rounded; ‘Hovey’ - low and rounded; ‘Little Champion’ - globe shaped; ‘Lutea’ - yellow foliage; ‘Nigra’ - dark green foliage in winter, pyramidal; ‘Pumila’ (Little Gem) - rounded, dwarf; ‘Pyramidalis’ - narrow pyramidal form; ‘Rheingold’ - rounded form with yellow to bronze new growth; ‘Rosenthalli’ - dense, pyramidal; ‘Techny’ - pyramidal, dark green, hardy; ‘Umbraculifera’ - flat topped; ‘Wareana’ - low and dense, pyramidal; ‘Woodwardii’ - rounded and spreading.

**Pests**

Arborvitae leaf miner mines out the leaf tips, causing them to turn brown. Translucent areas are seen where the miner has been active.

Scales of several types infest the stems and foliage. Sprays of horticultural oil control overwintering stages.

Mites cause yellowing and speckling of the foliage. The mites are seldom noticed because they are so small.

Bagworms can devour large quantities of foliage very quickly.

**Diseases**

Leaf blight causes brown spots on the leaves in late spring. The affected foliage appears scorched, then drops.