

CONIFER CORNER

Livin' Large

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In the past three editions of *Conifer Corner*, we've worked our way through the various size classes of conifers recognized by the American Conifer Society (ACS). In this edition, I'll conclude the discussion with the big boys: **Large Conifers.**



Among the four size classes recognized by the ACS, large conifers represent the most diverse group in terms of species.

The ACS defines large conifers as trees that grow one foot or more per year and reach a height of 15 feet by age ten. In nature, many conifers — especially members of the Pinaceae — are large trees. In fact, their large size is one of the attributes that makes conifers such a fascinating group of plants. The tallest (379' Coast Redwood, *Sequoia sempervirens*) and largest (325" diameter Giant Sequoia, *Sequoiadendron giganteum*) trees in the world are conifers.

From a landscape design and use perspective, large conifers present both a challenge and opportunity. The challenge, of course, is that large conifers can overwhelm a small space or interfere with overhead utilities if not sited properly. Homeowners will often bring home an 8' white pine or Norway spruce in their small suburban yard, thinking their little tree will always look like a Christmas tree. Much to their dismay, they later find out that their little *Tannenbaum* has turned into a monster ready to devour their house.

While large conifers present a challenge in a tight space, they also present wonderful design opportunities where space allows. Planted *en masse* or in rows, large conifers provide screens for privacy, block unwanted views, and reduce noise from busy roads. It may be argued that deciduous trees can fulfill similar functions, but evergreen conifers do it 365 days a year. Large conifers also make dramatic and memorable specimen trees. The Harper Conifer Collection

at Hidden Lake Gardens contains over 500 plants of every color, shape and size imaginable, yet invariably it is the large conifers that make the most lasting impression. Every visitor to the Harper Collection will have a different favorite, but the large conifers such as the *Taxodium distichum* 'Pendens', *Cedrus libani* var. *stenocoma*, *Picea omorika* 'Pendula', and *Chamaecyparis nootkatensis* 'Pendula' stop nearly everyone in their tracks. Among the four size classes recognized by the ACS, large conifers represent the most diverse group in terms of species. Dwarf conifers have the largest number of total entries in the ACS database, but this reflects the large number of cultivars, particularly in species such as *Picea glauca*, *Picea abies*, *Pinus strobus* and *Tsuga canadensis*.

Large Conifers to Consider

In this section, I'll depart a little bit from the format of the earlier editions of this series and focus on individual species as opposed to cultivars. There are a couple of reasons for this. First, large conifers include a wide array of trees, many of which are interesting as the straight species. Also, the next edition of *Conifer Corner* will begin a new multi-part series that will focus on conifers in each of the form classes recognized by the ACS. This format will provide ample opportunity to discuss cultivars, including many large conifers.



A terrific trio of firs... Nordmann fir, Nikko fir, and Concolor fir.

Abies concolor, **Concolor fir** is the most widely used true fir in Michigan and a great choice for many landscape situations. The powder blue needles often cause it to be confused with blue spruce, but a quick grab of the needles will tell the difference. Concolor fir needles are rounded on the tips and flexible while blue spruce needles are sharp and stout. The needles are also noteworthy for their characteristic citrus smell when crushed. Concolor fir is native to mountainous areas of the western U.S. from central Oregon and southern Idaho to northern Mexico.

Big tree: 88" diameter, 216' height.
Yosemite National Park

Abies nordmanniana, **Nordmann fir** is native to mountain regions south and east of the Black Sea in Turkey, Georgia and the Russian caucuses. Nordmann fir has outstanding ornamental appeal with dark green lustrous needles. The needle characteristics along with its symmetrical form make Nordmann fir one of the most popular Christmas tree species in the world. Nordmann

fir also makes an excellent ornamental tree and is considered by many, including Michael Dirr, to be the most appealing of all firs.

Big tree: 142" diameter, 256' height

Cedrus libani var. *stenocoma*, **Hardy Cedar of Lebanon** — *Cedrus libani* is one of only four species in the genus *Cedrus* (*C. atlantica*, *C. brevifolia*, and *C. deodara* are the others). The genus *Cedrus* is often referred to as 'true cedars' to distinguish them from various members of the Cupressaceae, which are commonly called cedars, such as eastern redcedar (*Juniperus virginiana*) and northern white-cedar (*Thuja occidentalis*). True cedars are evergreen members of the pine family (Pinaceae) and have needles borne in clusters of 30-40 on pegs or short shoots on the stem. *Cedrus libani* var. *stenocoma* is native to central Turkey. Hardy Cedar of Lebanon makes a great specimen plant with a lot of character. The needles are bluish-silver and the branch structure is coarse with a spreading crown as trees age. *Cedrus libani* is prominently featured on the Lebanese national flag — the only tree accorded such an honor.

Big tree: 132" diameter, 92' height. Mt. Lebanon, Lebanon



Ruggedly handsome. Hardy Cedar of Lebanon shows character born of age.



A rose by any other name... Controversies over nomenclature notwithstanding, Alaska yellow cedar adds character and grace to the landscape.

Chamaecyparis nootkatensis, Alaska yellow cedar, Alaska false cypress — Remember when you took your first botany class and learned that we used Latin scientific names for plants to avoid confusion over common names? Forget about it. The taxonomy of Alaska yellow cedar has taken more plot turns in recent years than an episode of *Law and Order*. Following the discovery of a new conifer species in Vietnam in 2001, Alaska yellow cedar was listed along with the new species in the genus *Xanthocyparis*. Since then, some taxonomists performed genetic analyses and argued that *Xanthocyparis* should be lumped, along with many *Cupressus spp.*, in the genus *Callitropsis*. Confused? You should be. Regardless of the taxonomic machinations, I suspect that the name *Chamaecyparis nootkatensis* will be with us in the nursery and landscape trade for a while — just like most of us of a certain age will always consider Pluto to be a planet. No matter what the scientific or common name, Alaska yellow cedar is a great landscape tree. It is a good grower and has a wonderful drooping appearance. Native to the Pacific coast of southern Alaska, British Columbia, and the Cascades of Washington and Oregon, its pendulous branches help to slough off heavy snow loads common in that part of the world.

Big Tree: 164" diameter, 200' height on Vancouver Island, British Columbia

Metasequoia glyptostroboides, Dawn Redwood — Like Ginkgo, *Metasequoia* is considered a 'living fossil'. The genus was originally described in 1941 from Chinese fossils from the Mesozoic era. Although local people in China knew the tree and used it as an ornamental, living trees were not formally described by botanists until 1948. Seeds collected by Arnold Arboretum in the late 1940s were distributed to universities and arboreta and this attractive, fast-growing tree found its way into the nursery trade. Ironically, millions of *Metasequoia* have been planted as ornamental trees, but the species is considered critically endangered due to a loss of its native habitat in China.

Big tree: *Metasequoia* is extremely fast-growing and some trees planted in the U.S. from the original collections in the 1940s are reportedly 3' in diameter. The largest tree recorded in China (87" diameter, 164' height) was killed by lightning in 1951.

Giant Sequoias, *Sequoiadendron giganteum*, are widely used as landscape trees in the West. Cultivars such as 'Powder Blue' are listed as hardy to Zone 6.





The upturned branches of Serbian spruce reveal the silvery underside of its needles producing a bicolor display.

Picea omorika, **Serbian spruce** is an outstanding ornamental conifer with about 20 cultivars recognized by the American Conifer Society. Even as a straight species, however, Serbian spruce is a great landscape tree. The needles are dark green above and silver-blue below, giving a bicolor effect. The narrow crown and drooping branch habit add to its ornamental appeal. Serbian spruce is native to a relatively small range in western Serbia and eastern Bosnia. Although not as fast-growing as Norway spruce, Serbian spruces can grow 1'-2' per year on good sites.

Big tree: 40" diameter, 164' height in its native range

Picea orientalis, **Oriental spruce** — Like Nordmann fir, the native range of Oriental spruce forms a crescent around the east of the Black Sea in Turkey and Georgia. Oriental spruce is an attractive ornamental tree with a straight, tight form. Shoots are somewhat reminiscent of Norway spruce with dark green needles on orange-brown stems. The needles of *Picea orientalis* are very short and tightly appressed along the stem. The ACS database lists about 40 cultivars of various forms and colors. The straight species is an extremely attractive tree and one that should see more use in the landscape.

Big tree: 157" diameter, 187' height in the Russian Caucasus

Centers of attention... Surrounded by dozens of outstanding plants at the Harper Collection at Hidden Lake Gardens, large conifers such as this *Picea orientalis* 'Skylands' (right center) still command attention.





Pinus koraiensis, Korean pine is not as fast a grower as some conifers discussed here, but can become a large tree with age. Korean pine is a white (five-needle) pine that is closely related to *P. cembra* and *P. sibirica*. It is native to Korea, northeast China, far east Russia, and central Japan. In parts of Asia, Korean pine trees are used as a major source of pine nuts. Korean pine has a soft texture and straight form when young, becoming more irregular with age.

Big tree: 78" diameter, height 138' in Ussuri Nature Reserve, Russia

This white pine at the Michigan Library and Historical Museum is a testament to the species' importance in the State's development.

These white pines have grown 2 to 4 feet per year since they were planted about 15 years ago.



Pinus strobus, Eastern white pine — Although I've made an effort to avoid some of the most common large conifers such as *Picea abies* and *Picea glauca* to provide a little more variety, I can't ignore Michigan's homegrown giant, *Pinus strobus*. Eastern white pine is the largest tree species that occurs east of the Mississippi. In pre-settlement times, vast tracts of huge white pines covered much of eastern North America, including Michigan. White pine figures prominently in American history and Michigan history. In colonial times, "Surveyors-Generals of His Majesties Woods" procured the tallest and straightest white pines for ships' masts for the Royal Navy, marking trees for felling with a broad arrow on the trunk. The 'broad arrow' policy was among the grievances that led to the American Revolution. In Michigan, white pine was key to the lumbering era that fueled Michigan's economic growth in the second half of the 19th century. While most of the huge old-growth pines have been felled and skidded off on ice sleds or big wheels, we can still enjoy large white pines in our landscapes. As a straight species white pine is among the fastest growing landscape conifers in the upper Midwest, with Norway spruce probably the most serious challenger for title of fastest growing landscape conifer in Michigan.

Big tree: 73" diameter, height 132' in Morrill, Maine

Korean pine at the University of Minnesota Landscape Arboretum near Minneapolis demonstrates the species' outstanding form and cold hardiness.



***Pseudotsuga menziesii*, Douglas-fir** — As a species, Douglas-fir is among the largest and fastest growing conifers in the world. It's important to recognize that there are two forms of Douglas-fir, and they vary widely in their growth potential. Travelers to the west coast of the Pacific Northwest have no doubt seen giant specimens of the coastal form, *P. menziesii* var. *menziesii*. The coastal variety of Douglas-fir lacks sufficient cold hardiness for the Great Lakes region, so we rely on the Rocky mountain form *P. menziesii* var. *glauca* for landscape use and as Christmas trees. By the way, the correct way to write the common name is with the hyphen (Douglas-fir) to indicate that it is not a true fir.

Big tree: The difference in growth between Douglas-fir varieties is reflected in their largest trees:

- var. *menziesii*: 301' height, 163" diameter at Jedediah Smith Redwood State Park, California
- var. *glauca*: 139' height, 101" diameter in Deschutes National Forest, Oregon

***Taxodium distichum* var. *distichum*, Baldcypress** is a great landscape plant. Along with larches and Dawn Redwood, it is one of the few deciduous conifers widely used for landscape planting. Baldcypress occurs along the Atlantic coastal plain and Gulf coast from southern Delaware to Texas. The central portion of the range extends northward to the southern tip of Indiana and Illinois. Despite its southern roots, baldcypress is a broadly adapted tree and grows well in Zone 5 and survives to Zone 4a in Minnesota. More importantly, baldcypress is adapted to flooding and can withstand poor drainage much better than most other conifers. A closely related tree, Pond cypress is often listed as a separate species (*T. ascendens*), but is currently considered a variety of *T. distichum* (var. *imbracatum*).

Big tree: 144' height, 205" diameter.
Williamsburg, Virginia

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Douglas-fir by the MSU Plant and Soil Science Building rise above surrounding yellowwoods.



Telling baldcypress apart from Dawn Redwood is as easy as ABC.... Baldcypress leaves (shown here) are alternate on the stem. Dawn redwood is opposite. Remember ABC - Alternate Baldcypress.



CHUB'S CHOICES

Conifer expert Chub Harper lists his top five favorite large conifers:

<i>Chamaecyparis nootkatensis</i> 'Pendula'	Weeping Nootka cypress
<i>Picea omorika</i> 'Pendula'	Weeping Serbian spruce
<i>Pinus flexilis</i> 'Vanderwolf's Pyramid'	Vanderwolf's Limber pine
<i>Pinus koraiensis</i> 'Glauca'	Blue Korean pine
<i>Taxodium distichum</i>	Bald or Swamp cypress