

Welcome to the Jim Cope Conifer Trail

This trail has a diverse collection of pines, spruces, larches, cedars and firs from around the world making it one of regional significance. The Grand Opening of CEC conifer trail was celebrated on May 5, 2002 and it continues to offer an enjoyable hike.

Conifers are a diverse group of trees and shrubs found worldwide. They are the most abundant trees of cold temperate forests and rank among the world's most important natural resources. An ancient lineage, dating back to a hundred million years, the conifers survive today in a variety of forms and shapes. Though mostly evergreen, there are a few species that are deciduous and some have a grayish, bluish color to their leaves. Although there are many tropical species, most conifer species require cooler weather to thrive.

In 1948, when Jim and Helen Cope purchased their 30 acre farm, they could stand on their front porch and see the town of Centerville. Since then, more than 10,000 trees have been planted, starting with Scotch Pines and White Pines. These trees were cut and sold for Christmas trees and boughs. The early plantings helped prepare the heavy clay soil for trees with more demanding requirements. They also protected the young experimental trees from the cold, drying winds of winter and the heat of summer.

Over the years the diversity of species within the conifer collection has increased. The best represented groups are the firs, spruces and pines.

The firs have short, blunt, flat, and usually shiny needles and prefer high elevations or northern climates. The spruces have short, sharp-pointed, angled needles and prefer cool summers and snowy winters.

The pines have longer, sharp pointed needles that grow in bundles of two, three or five and are well adapted to the temperate climate of Indiana.

Other unique and lesser known species are also highlighted. In all there are 15 genera and 55 species on the Jim Cope Conifer Trail. This is a significant representation of the 20 genera and the 108 species that can be found growing at the Cope Environmental Center.

**References:**

[www.arboretumonbluehill.org](http://www.arboretumonbluehill.org)  
[www.christree.org](http://www.christree.org)  
[www.seedman.com](http://www.seedman.com)  
[www.treetrail.net](http://www.treetrail.net)  
[www.wikipedia.org](http://www.wikipedia.org)

Cope, Edward A. Native and Cultivated Conifers of Northeastern North America. Cornell University Press, New York. 1986.

Elias, Thomas S. Trees of North America. Gramercy Publishing, New York. 1987.

Leopold, Donald J. et. al. Trees of the Central Hardwood Forests of North America. Timber Press Inc., Oregon. 1998.

1. **Concolor Fir** (*Abies concolor*) – This Fir, also commonly called White fir, is native to the western United States and may grow to be 130-150 ft. tall. The oldest of these trees may occasionally reach 350 years of age. Concolor fir is tolerant of a considerable amount of shade. Its best growth is on moist loamy soils but it may often be found on dry thin soils. This species is commonly found with Douglas fir, sugar pine, ponderosa pine, and red fir. It has good foliage color and pleasing natural shape and aroma and good needle retention making it a popular Christmas tree.

2. **Nordmann Fir** (*Abies nordmanniana*) – The Nordmann Fir is native to the mountains east of the Black Sea in Turkey, Georgia and Russia. Some of the tallest trees in Europe are Nordmann Firs reaching up to 256 ft. tall. It occurs at altitudes of 2900–7200 ft. on mountains with a rainfall of over 40 inches. The cones are 4-8 inches long and 1-2 inches broad. They disintegrate when mature to release the seeds.

3. **Eastern White Pine** (*Pinus strobes*) - This is a large pine native to eastern North America occurring from Newfoundland to the north of Georgia. Eastern White Pine is the tallest tree in eastern North America. In old growth pre-colonial stands it grew to about 230 ft. tall but current trees typically only reach 100-160 ft. in height. White pine forests originally covered much of northeastern North America. Few of the original trees remain untouched by extensive logging operations in the 1700s and 1800s which harvested the valuable wood. White Pine needles contain five times the amount of Vitamin C (by weight) of lemons, and make an excellent tea. The inner bark (cambium) is edible.

4. **Chinese Arborvitae** (*Platycladus orientalis*) - This species is native to northwestern China and widely naturalized elsewhere in Asia. It is a small slow growing tree around 50–65 ft. tall. The common name “arborvitae” is from Latin, tree of life, and is based on its

association with long life and vitality. Some of the larger specimens planted around Buddhist temples in China are said to be in excess of 1,000 years old.

5. **Bosnian Pine** (*Pinus leucodermis*) - This species of Pine occurs in the mountains of southeastern Europe growing at an altitude of 2,900–8,200 ft. It is a member of the hard pine group with leaves in bundles of two. Its long seeds are wind dispersed. This is a popular ornamental tree, giving reliable, steady yet slow growth on a wide range of sites. It is very tolerant of severe winter cold, hardy down to at least -50°F, and of severe wind exposure.

6. **Balsam Fir** (*Abies balsamea*) - The Balsam Fir is a North American fir native to most of eastern and central Canada. The bark on young trees is smooth and grey becoming rough and fissured on old trees. The long dark purple cones ripen brown and disintegrate to release the winged seeds in September. This tree provides food in the form of oil rich seeds for moose, American red squirrels, crossbills and chickadees, as well as shelter to snowshoe hare, whitetail deer and ruffed grouse along with other small mammals and songbirds.

7. **Eastern Redcedar** (*Juniperus virginiana*) - This is a widespread species of juniper found from southeastern Canada to the Gulf of Mexico. It is the only conifer native to Indiana. It is a dense slow growing tree that may never become more than a bush on poor soil. The berry like cones matures in 6-8 months and furnishes winter food for many birds which disperse the wingless seeds. The heartwood is fragrant, very light and durable, even in contact with soil. It was once a premier wood for pencils.

8. **Colorado Blue Spruce** (*Picea pungens*) - Planted in 1992. This medium sized evergreen grows to heights of 80–100 ft. tall and can normally be found in altitudes ranging from 5900-9800 ft. Native of western North America, it usually grows along streamlines of

mountain valleys. The cones of these trees are a beautiful reddish violet and become brown once pollinated. Due to its beautiful foliage the blue spruce is a highly popular garden tree and is also the national Christmas tree of America.

9. **Scotch Pine** (*Pinus sylvestris*) - Also known as Scots Pine, this tree is native to Europe and northern Asia. It can be found in Great Britain, Spain, Siberia and the Caucasus mountains growing alongside various other trees such as the Norway spruce, Silver Birch, Common Rowan and other hardwood species. It can be cultivated as a Christmas tree, and many varieties are planted as ornamentals. It grows rapidly in almost any location. They can grow up to heights of 115 ft. and are marked as mature by their bare and straight trunk topped by a rounded mass of foliage.

10. **Austrian Pine** (*Pinus nigra*) - Planted in 1990. Also called the European Black Pine, The Austrian Pine is an eastern and southern European pine. It is a shade intolerant species yet it can resist snow and ice damage. It is planted often as an ornamental and commercially for Christmas trees. It typically reaches heights of 65–180 ft. at maturity and is known for being fairly long lived.

11. **Ponderosa Pine** (*Pinus ponderosa*) - Planted in 1990. This species is native to western North America and has four different subspecies: Northern Plateau Ponderosa Pine, Rocky Mountains Ponderosa Pine, Southwestern Ponderosa Pine, and Pacific Ponderosa Pine. They are rare in cultivation in the Northeast but are widely planted in other parts of the world. Their leaves are in bundles of 2 and their cones are purple when immature.

12. **Sawara-Cypress** (*Chamaecyparis pisifera*) - Planted in 1994. This tree is native to central Japan and displays distinctive, strongly flattened sprays spaced at even intervals. It is a slow growing tree that can reach heights of 115 ft. It is grown a fair amount for timber in Japan. As the wood carries a lemon scent and is very resistant to rotting, it is also used to build temples, shrines, palaces, and baths.

13. **Chinese Juniper** (*Juniperus chinensis*) - Planted in 1974. These trees can grow to be 3-65 ft. in height as a tree or shrub. It is native to Southeast Asia and is commonly planted in many forms, most often as an ornamental. Younger trees have leaves that are needlelike while most leaves on the mature branches are scale-like.

14. (New conifer coming soon) **Formerly: Himalayan Juniper** (*Juniperus squamata*) - Planted in 1995. This native of the Himalayas rarely reaches the height of a tree. Typically a shrub it can be found growing in altitudes from 5250-16100 ft. With its flaky brown bark, this tree is also referred to as the “Flaky” Juniper. Its leaves are broad, needlelike and in threes while the cones are berry like.

15. **Dawn-Redwood** (*Metasequoia glyptostroboides*) - Planted in 1989. This genus includes only one species and was known only through the fossil record until living plants were found in the Sichuan-Hubei region China in the 1940s. These trees typically grow to heights of 130-150 ft. but can grow to heights of 200 ft. Due to their quick growth rate they are being considered for the use of forestry.

16. (New conifer coming soon)

17. (New conifer coming soon)

18. (New conifer coming soon) **Incense-Cedar** (*Calocedrus decurrens*) - A native tree of the northwestern United States.

Incense Cedar is but one genus out of three that belongs to the cypress family. It is a pleasing specimen in cultivation although a protected location is usually necessary. It grows in healthy abundance in western North America and reaches heights of 130-200 ft. The leaves are aromatic, bright green, and scale-like with glands on their backs. The Incense Cedars wood is typically used for pencils due to its softness and ability to be sharpened without splintering.

19. **American Arborvitae** (*Thuja occidentalis*) - Planted in 1990. This is one of the most frequently planted conifers in northeastern North America. These trees tend to be fairly small ranging in height from 32-65 ft. They grow well in swamps where there is no competition between larger and faster growing trees and they are excellent for planting in hedges. They have a long life span as some are found to be 1,000 years old. One dead specimen was found to be 1,500 years old. Its oils can be used as wart fighting medicine.

20. **Western Red Cedar** (*Thuja plicata*) - Planted in 1986. This is a native of northwestern North America that makes an excellent ornamental as well as fine telephone poles and cedar shakes. It grows to great heights, ranging from 160-200 ft. tall. The wood is resistant to decay and has a strong scent which can repel moth larvae. Native Americans used the wood and bark of this tree for such things as fishing pole lines, clothing, mats and other various items.

21. **Tamarack Larch** (*Larix laricina*) - Planted in 1990. This is one of few deciduous trees on this trail and is native to northern North America. They are often found in swamps or wet areas. These trees are small ranging from 32-65 ft. in height, with blue-green needlelike leaves that are only 1 inch long. They are sensitive to shade but can withstand winter temperatures as low as -65 C. The bark of this tree is rather tough but flexible in small strips.

22. **White Spruce** (*Picea glauca*) - Planted in 1959. The white spruce is a native of northeastern North America. It is a medium sized tree that grows rapidly reaching heights of 50-100 ft. It is often used as a Christmas tree although its leaves are dry and drop quickly like those of most spruces. In Canada these trees are of high economic importance providing wood and pulp for paper.

23. **Balsam-Fraser Fir** (*Abies balsamea X fraseri*) - This is a prized Christmas tree native to the southeastern United States. It is closely related to the balsam fir. It can make a nice ornamental but like the balsam fir it may lose its branches with age. The leaves are 1 inch long, and are usually whiter than those of the balsam fir.

24. **Turkey Fir** (*Abies X bornmuelleriana*) - This tree is native to the mountains of Northwestern Turkey. It is a natural cross between *A. cephalonica* and *A. nordmanniana*. Its leaves are 1-2 inches long and its cones are 5-6 inches long. Its needles are similar to the Fraser fir but are more drought tolerant. It is a popular Christmas tree in Europe and shows promise as a tree farm specimen in the US.

25. **Ernest Fir** (*Abies chensiensis var. ernesti*) - This tree is a native of China and was named for Ernest Wilson who traveled to this country on several occasions to catalog many plants and trees around 1912. As a tolerant species it is found over a wide geographic range from Szechuan to Yunnan. It is a vigorous tree with exceptional lime green growth in the spring carried on by dark green foliage.

26. **Greek Fir** (*Abies cephalonica*) - Planted in 1990. The Greek Fir is a native to the mountains of Greece. It can grow at altitudes 2950-5580 ft. with 40 inches of rainfall. Typically this species can be found integrated with its close relative, the Bulgarian Fir. It is a handsome dark green tree that grows to heights ranging from 80-

110 ft. In ages past these trees were used to provide an ample source of wood, but due to scarcity they are now used only for ornamental purposes.

27. **Moroccan Fir** (*Abies pinsapo* var. *marocana*) - This is a variety of the Spanish Fir native to the Straits of Gibraltar in the mountains of northern Morocco. It is confined to altitudes of 4600-6900 ft. It differs from the Spanish Fir in that the leaves are less glaucous and the cones are slightly longer, 4-8 inches.

28. **China-Fir** (*Cunninghamia lanceolata*) - Planted in 1993. This species is one of two in the *Cunninghamia* genus and is native to eastern Asia. Although called China-Fir it is not actually a fir. It reaches heights in the range of 160-180 ft. and bears blue-green, needlelike leaves. These trees are prized for their soft, durable, and well scented timber. Older specimens often look ragged, as the old needles may cling to stems for up to 5 years. The genus name *Cunninghamia* honors Dr. James Cunningham, a British doctor who introduced this species into cultivation in 1702.

29. **Norway Spruce** (*Picea abies*) - The Norway Spruce has been the most commonly planted ornamental conifer in the United States as its graceful sweeping boughs and rapid growth make it popular for cultivation. It is a native of Northeastern Europe and can reach heights of 115-180 ft. It is used widely for timber, forestry and paper production.

30. **Baldcypress** (*Taxodium distichum*) - This genus has three species that are native to southern North America. It is typically found anywhere from the Delaware Bay south to Florida and West to Texas. Its slightly drooping or hanging branches make it a feathery handsome tree. In swampy areas these trees grow "Cypress knees" which are roots that come above ground to support the structure of the tree. One early assumption for the function of these "knees"

was they provided oxygen to the roots. However, there is little actual evidence to support this. Louisiana adopted the Bald Cypress as their state tree in 1963.

31. **Japanese Red Pine** (*Pinus densiflora*) - This species is native to Japan. It is a hardy tree that can reach 65-115 ft. in height but is more commonly found as a large shrub when cultivated in northeastern North America. This tree is related closely to the Scotch pine with the most noticeable difference being its slender mid-green leaves as compared to the Scotch pine's glaucous blue leaves. Typically this tree is used for timber in Japan as well as for ornamental purposes.

32. **Carolina Hemlock** (*Tsuga caroliniana*) - This conifer is native to the southeastern United States, specifically to the mountain slopes of Virginia, Georgia, and North Carolina. Because of its limited occurrence, the species has little commercial value. In the areas where it does grow however it is valuable to wildlife. Birds eat the small seeds and nest in the thick cover of its branches while deer browse the branches and use them for shelter in winter. It is particularly attractive in winter when its branches are covered with snow.

33. **Chinese White Pine** (*Pinus armandii*) - This species is native to eastern Asia and grows in altitudes ranging from 3280-10830 ft. Like most members of the white pine group their leaves grow in bundles of five with a deciduous sheath. The seeds of the Chinese White Pine are harvested and sold as pine nuts. This tree also grows as an ornamental in parks and large gardens in Europe and North America. The scientific name commemorates the French missionary and naturalist, Armand David, who first introduced it to Europe.

34. **Red Pine** (*Pinus resinosa*) - Native to northeastern North America characterized by tall straight growth in a variety of

habitats. Typically these trees range in height from 65-115 ft, but can reach 140 ft. in optimal conditions. The species is notable for its very constant morphology and low genetic variation throughout its range, suggesting it has been through a population bottleneck in its recent evolutionary history. The wood is valuable for forestry and the production of timber and paper pulp. It is the state tree of Minnesota.

35. (New conifer coming soon) **Formerly: Chinese Pine** (*Pinus tabulaeformis*) - Planted in 1994. This species is native to China. This is an irregularly growing shrub. Its leaves grow in bundles of 2 or 3, 2-6 inches long. Studies are currently being conducted on the origin of remnant forest stands of this species in southeastern Inner Mongolia.

36. **Douglas-Fir** (*Pseudotsuga menziesii*) - Planted in 1950. This species is native to western North America. It is one of the finest all purpose trees of its kind. It is among the most valuable conifers in the quality of its construction lumber and it makes a premium Christmas tree. It is normally fast growing and can reach heights of 65-330 ft. The Douglas-fir is named in honor of the Scottish botanist, David Douglas, who first introduced this species into cultivation. This is the state tree of Oregon.

37. **Canada Hemlock** (*Tsuga Canadensis*) - Native to eastern North America ranging from as far north as Nova Scotia, and as far south as northern Georgia. This tree ranges in height from 65-115 ft and can live up to 400 years of age. It is often used for ornamental purposes and is the State tree of Pennsylvania. The Canada Hemlock is threatened by the Hemlock Wolly Adelgid, a species of aphids that was brought to the U.S. from East Asia in 1942.

38. **Hondo Spruce** (*Picea jezoensis*) - Planted in 1986. This species is native to northeast Asia and Japan and can grow 100-160 ft. tall. It is

often found in the isolated southern mountains in central Honshu, Japan. The Hondo Spruce is particularly important in far eastern Russia and northern Japan for its timber and paper production.

39. **Koyama Spruce** (*Picea koyamae*) - This extremely rare spruce grows at altitudes ranging from 4900-6500 ft. on the borders of Nangano and Yamanashi prefectures in Central Honshu, Japan. This medium sized evergreen grows up to 65 ft. with leaves 1/3-2/3 of an inch long. These trees are occasionally planted as ornamental trees and can be used for construction and paper making but due to its rarity it has low commercial value.

40. **Fraser Fir** (*Abies balsamea x fraseri*) – Fraser fir trees were planted by Jim Cope's father in the 1930's or 1940's on his land, called Spruce Top, in the Finger Lakes region of New York State, near Ithaca. This fir grew from seed of one of those Fraser firs which was pollinated by balsam fir on the property yielding this hybrid which has characteristics of both species. The seedling was transplanted by Jim Cope and his son Ed Cope in the 1980's. Fraser fir which is native to the Smoky Mountains is closely related to Balsam fir which grows at high elevations or in bogs in the northeastern US and Canada.

41. **Meyer Spruce** (*Picea meyeri*) - This species is native to Nei Mongol in the northeast to Gansu in the southwest in China and is closely related to the Dragon Spruce of western China. It is being planted with increasing popularity as an ornamental in the United States to replace Blue Spruce which is more disease prone in humid climates. The wood is in close resemblance to other spruces but the species is too rare to be of economic value.

42. **Limber Pine** (*Pinus flexilis*) - The Limber Pine is native to the mountains in the western United States, specifically in sub alpine areas of the Rocky Mountains. This is a flexible and hardy species

that can grow rapidly. With its long, somewhat twisted branches it has an open and loose character. The Limber Pine serves as a food source for several species such as Mountain Bluebirds, Northern Flickers, Clark's Nutcrackers, and Red Squirrels. Unfortunately the Limber Pine is highly susceptible to White Pine Blister Rust which was introduced accidentally from Europe.

43. **Pitch Pine** (*Pinus rigida*) - The Pitch Pine is native to northeastern North America and it can range in height from 20-100 ft. This small to medium sized species has thick bark, an adaptation that protects the tree from all but severe fires. It is a durable tree but is infrequently cultivated due to its scraggly appearance. The shoots on its trunk allow it to grow after a fire but cause the trunk to be twisted making it unsuitable for timber. The species can be found growing in swampy lowlands, dry areas, and even sandy acid uplands.

44. **Himalayan Pine** (*Pinus wallichiana*) - Planted in 1950. This pine is also known as Bhutan Pine. It is native to the mountains of Himalaya and is marginally hardy in northeastern North America. Typically growing at altitudes 5900-14100 ft. in mountain valleys, these trees can grow to be 100-165 ft in height. Its long, droopy needles grow in bundles of five. The wood is moderately hard and makes good fire wood except for it giving off a pungent resinous smoke. It is another commercial source of turpentine although it is not produced freely. The Himalayan Pine is often planted in parks and gardens due to its attractive foliage and high resistance to pollution.

45. (New conifer coming soon) **Formerly: Lacebark Pine** (*Pinus bungeana*) - A native to northwestern China, this slow growing tree typically reaches 50-80 ft. tall. The Lacebark Pine is a valuable ornamental tree and is considered to be the most beautiful of the

pinus due to its decorative bark. Many of these trees can be found planted near temples and some have lived over a 1000 years.

46. (New conifer coming soon) **Formerly: Jeffrey Pine** (*Pinus jeffreyi*) - This North America Pine grows southwest of Oregon through most of 3300-6600 ft and 5900-10000 ft. in its southern range, these trees are fairly large, reaching 80-130 ft. They bear needles that grow in bundles of three and are of a glaucous grey green color. It is a relative of the Ponderosa Pine and can be distinguished by its vanilla or lemon scent due to its high levels of heptanes, a highly volatile substance.

47. (New conifer coming soon) **Formerly: Bristlecone Pine** (*Pinus aristata*) - When you speak of longevity you speak of the Bristlecone Pine. The oldest bristlecone pines are single plants that have been alive for about 5,000 years. One organism of this species is called Methuselah, named after the longest living person in the bible. The wood is very dense and resinous making it resistant to insects and other possible pests. Growing in isolated groves with typically dry soil and high winds, these trees grow fairly slowly. The oldest single living organisms known are bristlecone pines and thus are of great importance in dendrochronology, tree ring dating.

48. **Dragon Spruce** (*Picea asperata*) - Planted in 1979. The Dragon Spruce is a native of western China. It is a bushy and slow growing tree at first but grows rapidly later in life and can reach up to 130 ft. in height. The needles are relatively long and grayish-green to blue-green in color. This species can be found growing in Europe as an ornamental.

49. **Alcock Spruce** (*Picea alcoquiana*) - Formerly known as the Picea bicolor, this is a hardy species native to Japan. Its symmetrical growth habit and silvery foliage gives it a pleasing appearance and for that it is a popular ornamental tree in horticulture.

50. **Japanese Plumyew** (*Cephalotaxus harringtonia*) - This species, also known as Cowtail Pine, is native to eastern Asia although fossil evidence shows that it also may have had a Northern Hemisphere distribution. These are typically small trees that grow to 3-32 ft. tall. Dispersal is thought to be aided by squirrels which bury the seeds for a winter food source; any seeds left behind are then able to germinate.

51. **Dwarf Alberta Spruce** (*Picea glauca var. albertiana*) - This is a miniature, cone shaped tree that grows very slowly (2 to 4 inches per year) and rarely needs pruning. Its dense, bright green foliage gives it a formal appearance. It is primarily a novelty specimen plant and is often used as a container plant. It is a native of Alberta, Canada.

52. **Golden-Larch** (*Pseudolarix kaempferi*) - Planted in 1967. This species is native to eastern China, specifically in small mountainous areas. It is a very attractive ornamental and is commonly planted in parks and large gardens. As it is tolerant of summer heat and humidity it grows successfully in the southeastern United States and while it also thrives in the Mediterranean region of Europe its growth rate is slower due to the cooler summers there. It has notable medicinal purposes and is one of the 50 fundamental herbs used in Chinese herbology.

53. **European Larch** (*Larix deciduas*) - This species is native to the mountains of central Europe in the Alps and Carpathians. It is a medium sized deciduous conifer that can reach heights of 82-150 ft. It is very cold tolerant, capable of surviving in -60°F weather, and is among the tree line in the Alps, an altitude reaching 7900 ft. The seeds are an important food source for some birds including Siskin, Lesser Redpoll and Citril Finch. The wood is durable and is particularly valued for yacht building.

54. **Jack Pine** (*Pinus banksiana*) - This is a North American pine with its native range in Canada east of the Rocky Mountains. It is a fire adapted tree as its cones can remain closed for many years until a natural forest fire kills the mature trees and opens the cones, thus reseeding the burnt ground. The Jack Pine is a very important species for Kirtland's Warbler (*Dendroica kirtlandii*), an endangered bird that depends on the tree for breeding.

55. (New conifer coming soon) **Formerly: Serbian Spruce** (*Picea omorika*) - This medium sized evergreen can grow to be 65-120 ft. tall. It is a rare spruce native to the valleys of the Drina River in western Serbia. Outside of its native range it is a particularly valued species in horticulture due to its attractive crown and its ability to grow on a wide range of soils. It is a common ornamental in large gardens in Northern Europe and North America. To a small extent it is also grown in forestry for Christmas trees, timber and paper production though its slow growth makes it of less economic value than its relative, the Norway spruce.

Cope Environmental Center  
4910 Shoemaker Road  
Centerville, IN 47330  
765-855-3188  
[www.CopeEnvironmental.org](http://www.CopeEnvironmental.org)

*Promoting the sustainable use of the earth's resources through education, demonstration & research.*

***Special thanks to Ed Fry for his work updating this Conifer Trail brochure. More conifers coming soon- please visit again!***