

2016 The Year of the Conifer

WHAT IS A CONIFER? AN EVERGREEN? A GYMNOSPERM?



Let's clear up the matter of "evergreen" first. Not all conifers retain their leaves in winter. Some, such as the American larch, *Larix laricina*, and the bald cypress, *Taxodium distichum*, are deciduous; they lose their needles in the fall. All conifers are gymnosperms, but the reverse is not true. A gymnosperm is a seed-bearing plant with seeds that are "naked," meaning not enclosed in an ovary. Interestingly, the ginkgo is a gymnosperm, but it is not a conifer. As the name implies, conifers are the cone-bearing plants, and they are the largest group of gymnosperms. They comprise the Coniferophyta, one of the five divisions of the seed plants. The exact taxonomic and evolutionary relationship among these groups is still being debated, and many significant members are known only from the fossil record. The conifers and the other gymnosperms have an ancient evolutionary history; they existed many millions of years before the flowering plants.

All of the existing native North American conifers have either needle-like leaves (the Pine and Yew Families) or scale-like leaves (the Cypress Family). But there are Asian and South American species with flat leaves, a well-known example being the Monkey-puzzle tree, *Araucaria araucana*. Talking of exotic species: owing to the popularity of evergreens in planted landscapes, the landscape trade carries a huge variety of different exotic conifers as well as hundreds of varieties and cultivars of natives. This means that trying to identify a planted conifer beyond the genus level is often a bootless exercise.

I have trouble distinguishing even the native conifers. I attribute my problem to having missed the conifer class when I took Cris Fleming's Winter Tree class at USDA. If only I had been there that Wednesday, I could confidently impress my friends by knowing how many needles are in the packet of each of the pines. But I wasn't and I can't.

Cover photos: *Pinus rigida* Mill., pitch pine

In my mind, pitch pine is inextricably connected with Mary Pat Rowan, leader of the Fort Circle walks in Washington, DC. At Fort Totten, the high point of the day is to scamper down hill, searching for the tell-tale sign of a pitch pine—needles sprouting directly out from the bark. Mary Pat's infectious enthusiasm makes the find feel especially enchanting.

There aren't many pitch pines at Fort Totten, but since the retreat of the last glacier, this species has dominated the New Jersey pine barrens and until recently, large portions of Long Island and Cape

Cod. The secret to this persistent domination is pitch pine's adaptation to fire. Even when all of the needles on a pitch pine are burned, the crown can recover in just a few years. If the leader is killed, a new one may grow, and if most of the tree is killed, new sprouts will emerge from the trunk. Dormant buds deep in the thick bark of a pitch pine come to life after a fire. Pitch pines are always prepared for fire. They begin to produce cones when very young, and they hang on to them year after year. Some of a pitch pine's cones are serotinous, meaning they remain



Ancient Pinus rigida in sphagnum seepage bogs at BARC.



Pitch pine cone, showing characteristic downcurved prickles on the scales.

closed until the heat of a fire melts the resinous glue that holds the scales of the cone together. Only then are the seeds of those cones released.

Pitch pine is not confined to almost pure stands like the New Jersey pine barrens. Throughout its range—from southern New England south to northern Georgia—small patches can compete successfully on rocky, dry, wet, or shallow soils that other species find challenging.

Pitch pine can hybridize with loblolly pine, *Pinus taeda*. The cones and needles of this fertile hybrid are characteristic and provide accurate identification of parentage. The cones are distinctly longer than broad, as no pitch pine cone would be, but they are not as large or long as the loblolly cones. The needles (3 per bundle like both parents) are more like pitch pine, which is to say, much shorter than those of loblolly.

~ Kirsten Johnson

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Conifers Native to Maryland



	Scientific Name	Common Name	State Rank/Status
Cupressaceae (Cypress Family)	<i>Chamaecyparis thyoides</i>	Atlantic white-cedar,	S3
	<i>Juniperis communis</i> , <i>var. depressa</i>	Common juniper	SH Extirpated
	<i>Juniperis virginiana</i>	Eastern redcedar	
	<i>Taxodium distichum</i>	Bald cypress	
Pinaceae (Pine Family)	<i>Thuja occidentalis</i>	Northern white-cedar, Arborvitae	S1 Threatened
	<i>Abies balsamea</i>	Balsam fir	S1
	<i>Larix laricina</i>	American larch	S1 Endangered
	<i>Picea rubens</i>	Red spruce	S3
	<i>Pinus echinata</i>	Short-leaf pine	
	<i>Pinus rigida</i>	Pitch pine	
	<i>Pinus pungens</i>	Table mountain pine	
	<i>Pinus serotina</i>	Pond pine	
	<i>Pinus strobus</i>	White pine	
	<i>Pinus taeda</i>	Loblolly pine	
	<i>Pinus virginiana</i>	Virginia pine	
<i>Pinus x rigitaeda</i> (<i>P. rigida</i> / <i>P. taeda</i> hybrid)	Pitlolly pine		
<i>Tsuga canadensis</i>	Eastern hemlock		
Taxaceae (Yew Family)	<i>Taxus canadensis</i>	American yew	S2 Threatened



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