Guide to Pines of New York City

*Pinus* is a genus in the Pine family (Pinaceae) with approximately 120 species distributed throughout the Northern Hemisphere. Pines are evergreen, cone-bearing trees with needle-like leaves occurring in clusters (fascicles). Pine species are well adapted to cold temperatures and nutrient deficient soils, and are found in a wide range of environments, from sandy coastal plains to alpine forests. Pine trees are an integral part of temperate coniferous and boreal forests and provide food and shelter to a variety of animals, especially in the winter. There are 5 native and 3 introduced species of pine which are commonly found in New York City.

Pine needles occur in fascicles of 2, 3, or 5. This can be a quick diagnostic characteristic for *P. strobus* (white pine), which is our only species with 5 needles per fascicle. Additionally, *P. rigida* (pitch pine) is our only local species with 3 needles per fascicle (although *P. echinata* may also have some needles in 3s). The remaining 6 species of pine generally have 2 needles per fascicle, and must be distinguished based on needle and cone characteristics.

**KEY TO THE SPECIES OF PINUS**
adapted from: Gleason & Cronquist Manual of Vascular Plants and the Flora of North America

1a. Leaves in fascicles of 5 .......................................................... ............................. *P. strobus*
1b. Leaves in fascicles of 2 or 3 .......................................................... ............................. 2
   2a. Leaves generally in fascicles of 3 .................................................. ............................. *P. rigida*
   2b. Leaves generally in fascicles of 2 .................................................. ............................. 3
      3a. Leaves 1-3 inches long .......................................................... ............................. 4
           4a. Leaves bluish green, usually twisted; tips of cone scales not pointed ........................... *P. sylvestris*
           4b. Leaves dark green; tips of cone scales pointed .................................................. *P. virginiana*
      3b. Leaves 3-6 inches long .......................................................... ............................. 5
       5a. Leaves brittle, snapping when bent .................................................. ............................. *P. resinosa*
       5b. Leaves pliable .......................................................... ............................. 6
           6a. Tips of cone scales pointed; buds resinous .................................................. ............................. 7
                7a. Cone scales minutely armed; buds whitish .................................................. *P. nigra*
                7b. Bark reddish and cracking in square plates, with evident resin pockets;
           buds red-brown .......................................................... ............................. *P. echinata*
           6b. Tips of cone scales not pointed; large whitish terminal buds not resinous...
       .......................................................................................................................... *P. thunbergii*
**Pinus strobus** – white pine

- Native – common – grows in a variety of soils
- 5 needles per fascicle – soft, 3-5 inches long
- Cone 5-10 inches long, drooping, often curved; cone scales without spines

**Pinus rigida** – pitch pine

- Native – grows in acidic, sandy, and low nutrient soils – moderately salt tolerant
- 3 needles per fascicle – thick and rigid, yellow-green, 2-5 inches long
- Cone 2-3 inches long, egg shaped, sessile; cone scales with sharp prickle
**Pinus resinosa** – red pine

- Native – grows in sandy, dry soils
- 2 needles per fascicle – brittle (snap when bent), with blunt ends, 3-6 inches long
- Cone 1-2 inches long, egg shaped, sessile; cone scales without spines

![Image of Pinus resinosa](image1)

![Image of Pinus resinosa](image2)

iNaturalist Observations in NYC
Herbarium Specimens from NYC

**Pinus echinata** – shortleaf pine

- Native – NYC is at northern limit of range
- 2 or 3 needles per fascicle – gray-green, slightly twisted, 3-4.5 inches long
- Cones 1-3 inches long, egg shaped, nearly sessile; cone scales with sharp prickle

![Image of Pinus echinata](image3)

![Image of Pinus echinata](image4)

iNaturalist Observations in NYC
Herbarium Specimens from NYC

https://www.inaturalist.org/observations/278817
**Pinus virginiana** – scrub pine

- Native – grows in well drained, but nutrient poor soils – NYC at northern limit of range
- 2 needles per fascicle – stiff, gray-green, 1-3 inches long
- Cones 1.5-2.5 inches long, narrowly egg shaped, on short stalks; cone scales with sharp prickle

**Pinus nigra** – black pine

- Introduced – native to central and southern Europe and western Asia
- 2 needles per fascicle – dark green, 3-6 inches long
- Cones 2-4 inches long, egg shaped, on short stalks; cone scales with small, deciduous prickle
**Pinus sylvestris – Scots pine**

- Introduced – native to north and western Europe
- 2 needles per fascicle – blue-green, twisted needles, 1.5-2.5 inches long
- Cones 1-2.5 inches long, on a short stalk; cone scales without a spine

**Pinus thunbergii – Japanese black pine**

- Introduced - native to Japan, South Korea, and China
- 2 needles per fascicle – dark green, 2.5-4 inches long; conspicuous whitish terminal buds
- Cones 1.5-3 inches long, egg shaped, on a short stalk; cone scales with short mucronate spine
More Information:
Flora of North America - *Pinus*
The Gymnosperm Database - *Pinus*
New York Flora Atlas

maps from USDA Plants [plants.usda.gov] – green denotes native occurrences, blue denotes introduced occurrences.