

Species Status Assessment

Common Name	short-leaved pine	Date Updated:	2024-02-07
Scientific Name	<i>Pinus echinata</i>	Updated By:	Rachael A. Renzi
Family	Pinaceae		

Species Synopsis (a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):

Short-leaved pine (*Pinus echinata*) is a perennial tree in the pine family. It is one of nine species of its genus in NY, and one of six that are native to the state (Werier et al. 2023). The range of this pine is from NY south to northern FL, and west to eastern TX (NatureServe 2023; Kartesz 2015). In NY, *Pinus echinata* has always been rare, and is historically known from Suffolk, Albany, Westchester, and Richmond County (NYNHP 2023). There were once 5 populations, but now only one population is known to exist on Staten Island (NYNHP 2023, 2024). This decline in range and population abundance may be contributed to loss of habitat, either by development or by canopy closure (NYNHP 2023, 2024; Murphy 1991). Being a shade-intolerant, successional species, *Pinus echinata* prefers forest openings or moist, well-drained fields for germination and sapling growth throughout its range (Lawson 1990; Grano 1970). In NY, it grows along sandy trails at the base of a sandy berm in wet deciduous woods (NYNHP 2023, 2024). The extant population has about 50 plants, but there is not enough data to determine a trend here, as NYNHP records first documented this population in 2003 (NYNHP 2023). While the three visits to the occurrence over the last 20 years show a relatively stable population, additional surveys are needed to track this population over the long term. One historical population on Long Island was last visited in 1915, and surveys to relocate the occurrence are needed (NYNHP 2023).

I. Status

a. Current legal protected Status

i. Federal:		Candidate:
ii. New York:	<u>Endangered</u>	

b. Natural Heritage Program

i. Global:	<u>G5</u>		
ii. New York:	<u>S1</u>	Tracked by NYNHP?	On Active Tracking List

Other Ranks:

COSEWIC: Not listed in Canada
 IUCN Red List: Least Concern

Status Discussion:

Pinus echinata is Endangered in New York (Ring 2023). There is one existing population of *Pinus echinata* on Staten Island with an estimated total of 50 trees (NYNHP 2023). There were four populations from the late 1800s that no longer exist because their habitat has been eliminated (NYNHP 2023, 2024). There is one historical record from 1915 on Long Island that needs to be checked.

II. Abundance and Distribution

Region	Present?	Abundance	Distribution	Time Frame	Listing status or S-Rank	SGCN?
North America	Yes	Unknown	Unknown	Unknown		
Northeastern US	Yes	Unknown	Unknown	Unknown		
New York	Yes	Unknown	Unknown	Unknown	E	
Connecticut	No	-	-	-		
Massachusetts	No	-	-	-		
New Jersey	Yes	Unknown	Unknown	Unknown	S4	
Pennsylvania	Yes	Unknown	Unknown	Unknown	S1	
Vermont	No	-	-	-		
Ontario	No	-	-	-		
Quebec	No	-	-	-		

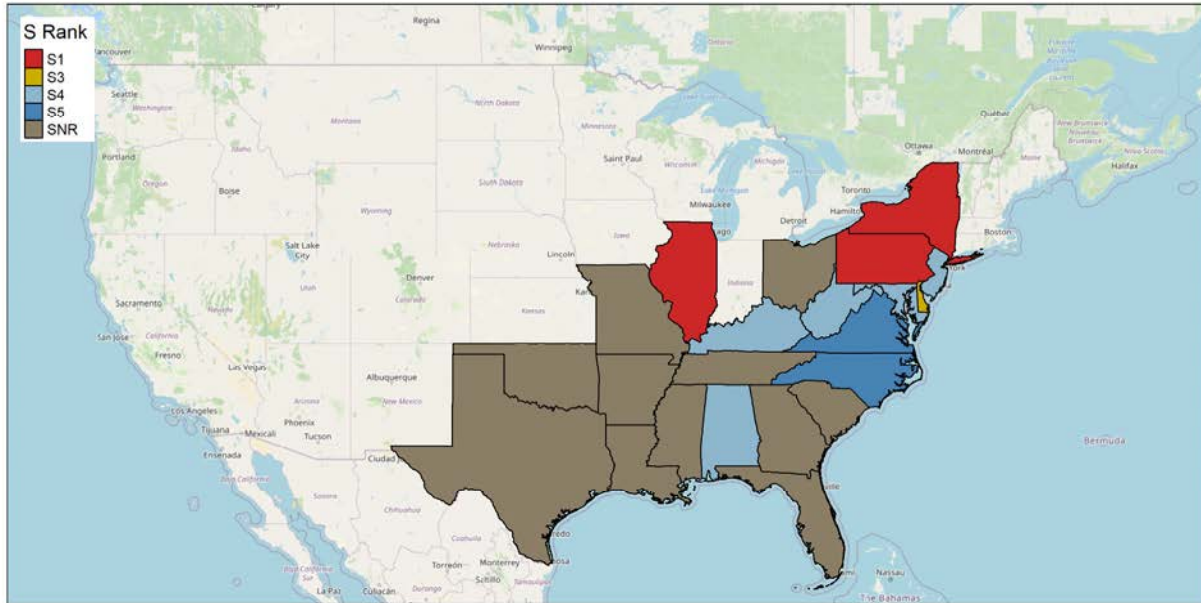


Figure 1. *Pinus echinata* North American distribution.

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	≥400 km

III. NY Rarity and Trends

Trends Discussion

This plant has always been very rare in NY, as it is at the northern extent of its range (NYNHP 2023, 2024). It is thought that after the Civil War, *Pinus echinata* took advantage of the open habitats of abandoned fields (Waggoner 1975). Development or closure of habitat likely contributed to the subsequent downward trend. Populations have been reduced from 5 locations in the 1800s to one (NYNHP 2023, 2024). The one extant population appears to be stable over the short-term, but consistent surveys of the entire population are needed (NYNHP 2023).

Details of historic and current occurrence

In NY, *Pinus echinata* is currently only known from Staten Island (NYNHP 2023, 2024). One historical population in Suffolk County is considered extirpated (NYNHP 2023, 2024). There are also a few records of planted trees in Essex and Nassau counties and unconfirmed reports from Albany and Westchester counties (NYNHP 2023, 2024). The populations in NY are at the northern limits of its range, as it extends south to north FL, and west to TX (NatureServe 2023).

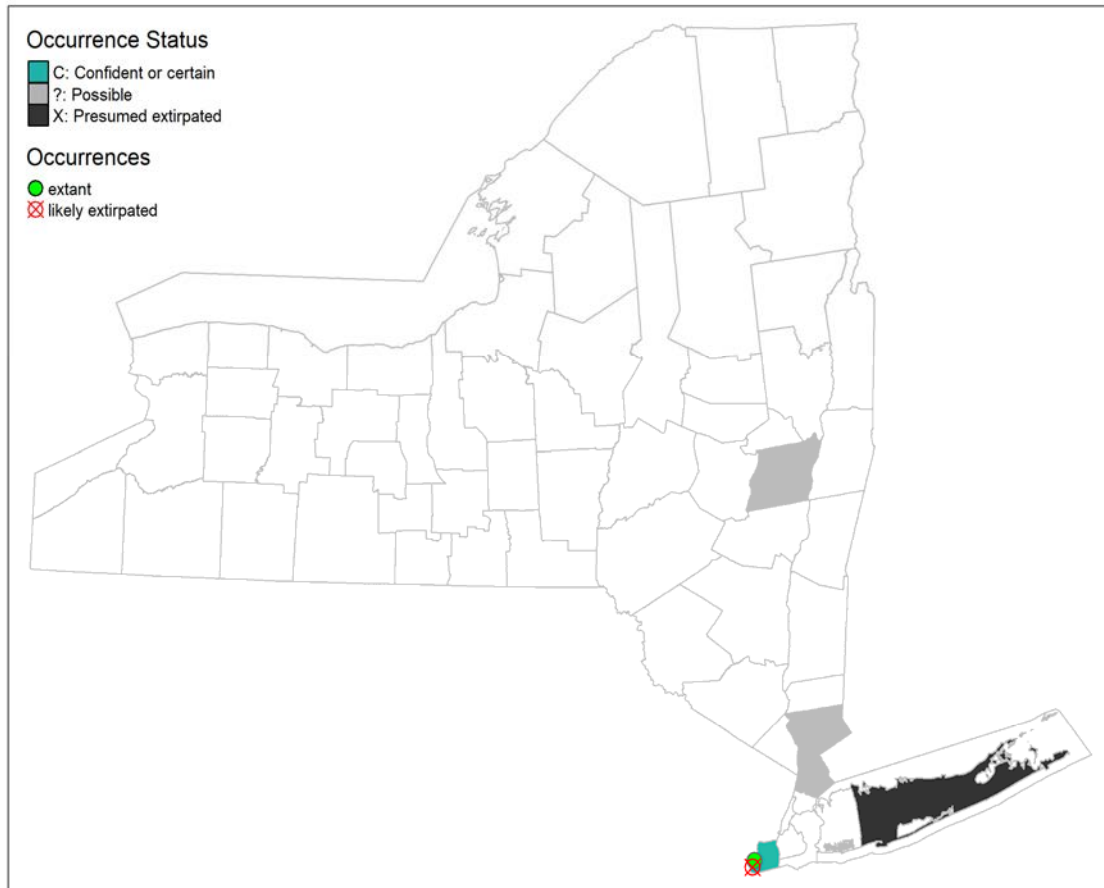


Figure 2. NYS distribution for *Pinus echinata*.

Table 1. Number of records (element occurrences) of *Pinus echinata* grouped by the dates known to be extant (the years spanning first observation to last observation) and the number and percent of total of USGS 7.5 minute map quadrangles these observations fall within for New York State.

Years	# of Records	# of distinct quads	% of quads in State
Pre-1995	1	1	0.1
1995-2004	1	1	0.1
2005-2014	0	0	0.0
2015-2023	0	0	0.0

Monitoring in New York

The population occurs on state park land, which is surveyed within a 10-year cycle (NYNHP 2023). In 2003, the southern and northern groups within the extant population were surveyed (NYNHP 2023). In 2008, the northern group was visited (NYNHP 2023). Then, in 2017, the southern group was visited and a third location within the population was discovered (NYNHP 2023).

VI. Threats

Trees may be suppressed by shading from taller surrounding vegetation if open-canopied conditions are lost (NYNHP 2024; Shelton & Murhpy 1991). Southern pine beetle, which has been found throughout Lond Island and a few counties north, is a potential threat to pine forests if crosses the bay to Staten Island (BISEH). These small beetles can kill *Pinus echinata* within a year (Lawson 1990).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes:

No:



Unknown:

If yes, describe mechanism and whether adequate to protect species/habitat:

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Thin canopy and understory around the trees to allow space for reproduction and growth (NYNHP 2023, 2024).

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - <https://www.iucnredlist.org/resources/conservation-actions-classification-scheme>

Table 3. Recommended conservation actions for *Pinus echinata*.

Conservation Actions	
Action Category	Action
Land/water protection	1.1. Site/area protection
Land/water protection	1.2. Resource & habitat protection
Land/water management	2.1. Site/area management
Land/water management	2.2. Invasive/problematic species control
Land/water management	2.3. Habitat & natural process restoration

VII. References

This SSA drew heavily from these resources:

New York Natural Heritage Program, State University of New York College of Environmental Science and Forestry. 2023. Element Occurrence and Element Dataset. Albany, New York. [Exported 12/14/2023].

NatureServe. 2023. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>. [Accessed 12/14/2023].

Werier, David, Kyle Webster, Troy Weldy, Andrew Nelson, Richard Mitchell, and Robert Ingalls. 2023 New York Flora Atlas. [S. M. Landry and K. N. Campbell (original application development), USF Water Institute. University of South Florida]. New York Flora Association, Albany, New York. [Accessed 11/21/2023].

Additional references:

Brown, Arthur A. and Kenneth P. Davis. 1973. Forest fire control and use. 2nd ed. New York: McGraw-Hill. 686 p.

Bureau of Invasive Species and Ecosystem Health. 2016. Southern Pine Beetle Fact Sheet. New York State Department of Environmental Conservation, Albany, New York. https://extapps.dec.ny.gov/docs/lands_forests_pdf/spbactsheet.pdf

Cain, Michael D. 1991. Hardwoods on pine sites: competition or antagonistic symbiosis. *Forest Ecology and Management*. 44: 147-160.

Edinger, G. J., D. J. Evans, S. Gebauer, T. G. Howard, D. M. Hunt, and A. M. Olivero (editors). 2014. *Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State.* New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY. <https://www.nynhp.org/documents/39/ecocomm2014.pdf>

Elias, Thomas S. 1980. *The Complete Trees of North America Field Guide and Natural History.* Van Nostrand Reinhold Co., New York, New York. 948 p.

Fernald, M.L. 1950. *Gray's manual of botany.* 8th edition. D. Van Nostrand, New York. 1632 pp.

Flora of North America Editorial Committee. 1993. *Flora of North America, North of Mexico. Volume 2. Pteridophytes and Gymnosperms.* Oxford University Press, New York. 475 pp.

Gleason, Henry A. and A. Cronquist. 1991. *Manual of Vascular Plants of Northeastern United States and Adjacent Canada.* The New York Botanical Garden, Bronx, New York. 910 pp.

Grano, Charles X. 1970. Small hardwoods reduce growth of pine overstory. Res. Pap. SO-55. [Place of publication unknown]: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 9 pp.

Holmgren, Noel. 1998. *The Illustrated Companion to Gleason and Cronquist's Manual. Illustrations of the Vascular Plants of Northeastern United States and Adjacent Canada.* The New York Botanical Garden, Bronx, New York.

Kartesz, J.T., The Biota of North America Program (BONAP). 2015. *North American Plant Atlas.* (<http://www.bonap.net/napa>). Chapel Hill, N.C. [maps generated from Kartesz, J.T. 2015. Floristic Synthesis of North America, Version 1.0. Biota of North America Program (BONAP). (in press)]

Lawson, Edwin R. 1990. *Pinus echinata* Mill. shortleaf pine. In: Burns, Russell M.; Honkala, Barbara H., technical coordinators. *Silvics of North America. Volume 1. Conifers.* Agric. Handb. 654. Washington, DC: U.S. Department of Agriculture, Forest Service: 316-326.

Little, E.L., Jr. 1979. Checklist of United States trees (native and naturalized). Agriculture Handbook No. 541. U.S. Forest Service, Washington, D.C. 375 pp.

Rhoads, Ann F. and Timothy A. Block. 2005. Trees of Pennsylvania. A Complete Reference Guide. University of Pennsylvania Press, Philadelphia, PA.

Ring, Richard M. 2023. New York Rare Plant Status Lists. New York Natural Heritage Program, State University of New York College of Environmental Science and Forestry, Albany, NY. December 2023. 108 pp.

Shelton, Michael G. and Paul A. Murphy. 1991. Age and size structure of a shortleaf pine-oak stand in the Ouachita Mountains--implications for uneven aged management. In: Coleman, Sandra S.; Neary, Daniel G. compilers. Proceedings, 6th biennial southern silvicultural research conference: Volume 2; 1990 October 30 - November 1; Memphis, TN. Gen. Tech. Rep. SE-70. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station: 616-629

Waggoner, Gary S. 1975. Eastern deciduous forest, Vol. 1: Southeastern evergreen and oak-pine region. Natural History Theme Studies No. 1, NPS 135. Washington, DC: U.S. Department of the Interior, National Park Service. 206 pp.

Walker, Laurence C. and Harry V. Wiant, Jr. 1966. Silviculture of shortleaf pine. Bull. No. 9. Nacogdoches, TX: Stephen F. Austin State College, School of Forestry. 59 pp.

Williamson, Malcolm J. 1964. Burning does not control young hardwoods on shortleaf pine sites in the Cumberland Plateau. Res. Note CS-19. Columbus, OH: U.S. Department of Agriculture, Forest Service, Central States Forest Experiment Station. 4 pp.