

Species Status Assessment

Common Name	prairie smoke	Date Updated:	2024-03-26
Scientific Name	<i>Geum triflorum</i> var. <i>triflorum</i>	Updated By:	Gregory J. Edinger
Family	Rosaceae		

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

Prairie smoke (*Geum triflorum* var. *triflorum*) is a perennial forb/herb in the Rose Family (Rosaceae). There are ten species of *Geum* in NY of which eight are native to the state (Werier et al. 2023).

Prairie smoke ranges from western New York to Minnesota and Iowa, and it extends west to British Columbia and California (Gleason and Cronquist 1991). New York is at the eastern edge of its range in North America. Within the state prairie smoke is only found in Jefferson County. There are four verified occurrences of prairie smoke in NY including one very large population with several thousand plants on private conservation land (NYNHP 2023).

Threats to the alvar habitats with prairie smoke populations include the invasion of exotic plants, such as pale swallowwort (*Vincetoxicum rossicum*), European buckthorn (*Rhamnus cathartica*), and shrub honeysuckles (*Lonicera* spp.), grazing, trampling (especially ORV damage), hydrologic alterations, and development pressure in Jefferson County (NYNHP 2023).

There are four verified occurrences of prairie smoke in NY including one very large population on private conservation land that has persisted for over 30 years (1984 to 2017). The other three smaller, extant occurrences have not been surveyed in the last 30 years: one location with 200-400 plants was last observed in 1989; one location with 6-10 plants was last observed in 1992; and one very small population with 2 plants was last observed in 1994 (NYNHP 2023). All four prairie smoke locations in NY need thorough population counts and an assessment of their condition.

I. Status

a. Current legal protected Status

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

b. Natural Heritage Program

i. Global:	<u>G5T5</u>
-------------------	-------------

ii. New York:

S2

Tracked by NYNHP?

On Active Tracking List

Other Ranks:

COSEWIC: Not listed in Canada

IUCN Red List: Not assessed by IUCN Red List

Status Discussion:

Geum triflorum var. *triflorum* is Threatened in New York (Ring 2023). There are four verified occurrences of prairie smoke in NY including one very large population on private conservation land. In addition, there is one historical occurrence with vague location information that needs to be surveyed (NYNHP 2023).

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	T	
Connecticut	No	-	-	-		
Massachusetts	No	-	-	-		
New Jersey	No	-	-	-		
Pennsylvania	No	-	-	-		
Vermont	No	-	-	-		
Ontario	Yes	Unknown	Unknown	Unknown	S4	
Quebec	No	-	-	-		

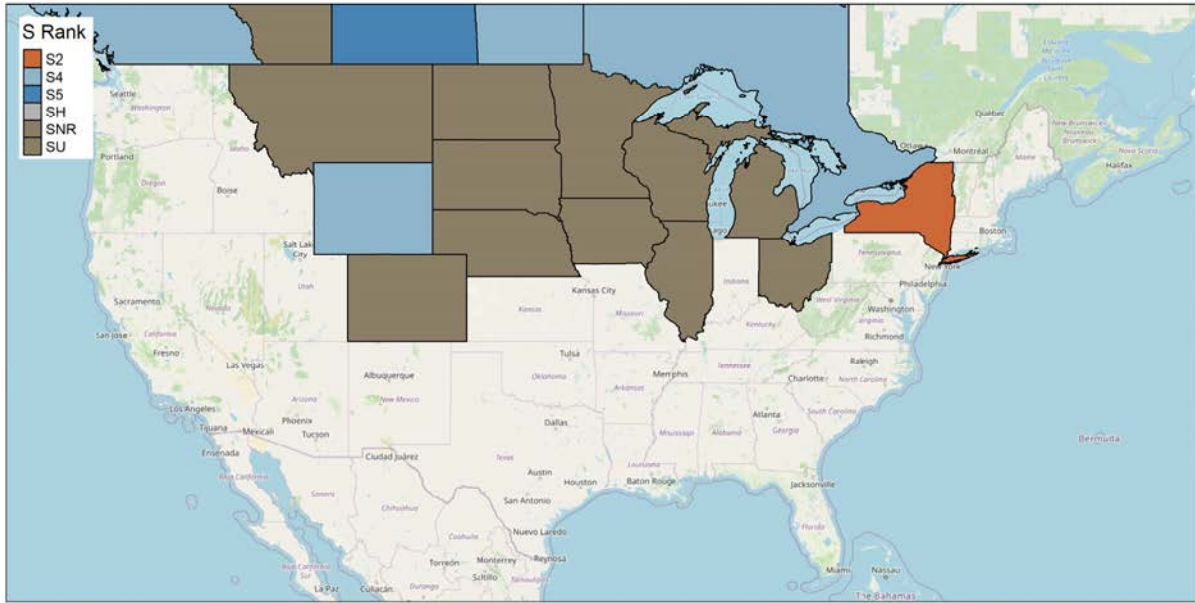


Figure 11: *Geum triflorum* var. *triflorum* North American distribution.

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

III. NY Rarity and Trends

Trends Discussion

There are four verified occurrences of prairie smoke in NY including one very large population on private conservation land that has persisted for over 30 years (1984 to 2017). The other three smaller, extant occurrences have not been surveyed in the last 30 years: one location with 200-400 plants was last observed in 1989, one location with 6-10 plants was last observed in 1992, and one very small population with 2 plants was last observed in 1994 (NYNHP 2023). All four prairie smoke locations in NY need thorough population counts and an assessment of their condition.

Details of historic and current occurrence

Prairie smoke ranges from western New York to Minnesota and Iowa, and it extends west to British Columbia and California (Gleason and Cronquist 1991). Shore of Lake Huron, Ontario, Alberta, south to Illinois, Indiana, Nebraska, and Montana (Fernald 1950). New York is at the eastern edge of its range in North America. Within the state prairie smoke is only found in Jefferson County. There are four verified occurrences of prairie smoke in NY including one very large population with several thousand plants on private conservation land (NYNHP 2023).

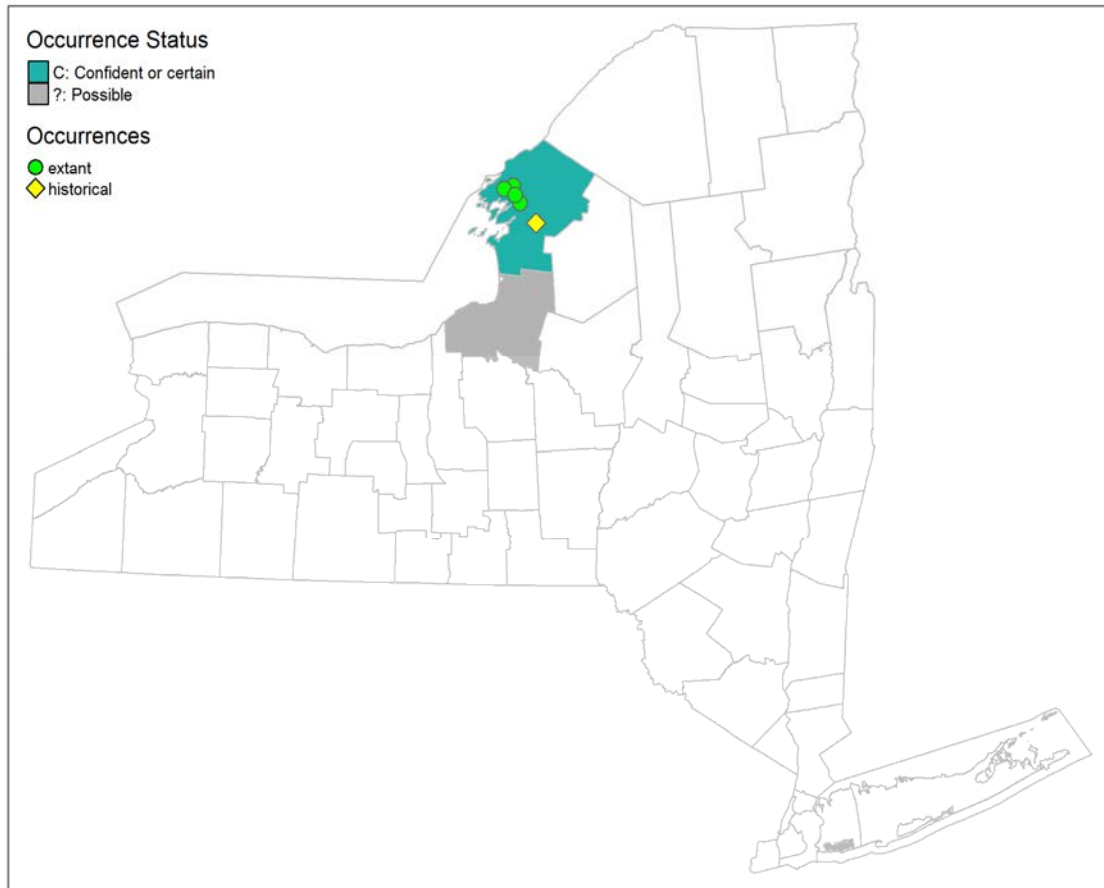


Figure 22: NYS distribution for *Geum triflorum* var. *triflorum*.

Table 1. Number of records (element occurrences) of *Geum triflorum* var. *triflorum* 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	5	4	0.4
1995-2004	1	1	0.1
2005-2014	1	1	0.1
2015-2023	1	1	0.1

Monitoring in New York

No prairie smoke populations occur on State Park or State Forest lands. No regular monitoring program is currently in place in New York (NYNHP 2023, 2024). However, the two occurrences on preserves owned by The Nature Conservancy would be worthy of monitoring.

IV. Primary Habitat or Community Type (from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):

Northeastern Terrestrial Habitat Classification Macrogroup: Alvar

NYNHP Ecological Communities: Alvar pavement grassland, Wet alvar grassland (Edinger et al. 2014, NYNHP 2023).

Habitat or Community Type Trend in New York

Declining: Stable: Increasing: Unknown: ✓
 Time Frame of Decline/Increase:
 Habitat Specialist Yes: ✓ No:

Habitat Discussion:

In NY, prairie smoke has been documented in alvar pavement grasslands including areas with peaty damp soils, small openings in dense brush or disturbance from use as pasture, and wet alvar grasslands (NYNHP 2023, 2024). Dry woods and prairies (Gleason and Cronquist). Calcareous rocks, gravels and prairies (Fernald 1950).

V. Species Demographics and Life History (include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):

Prairie smoke grows at a medium rate, and under ideal conditions can be expected to live for approximately 5 years. As an herbaceous perennial, this plant will usually die back to the crown each winter and regrow from the base each spring (Gertens Garden Center 2024). Seed longevity is estimated at 3 years at 1 to 3 degrees C in sealed containers (Luna et al 2008). Prairie smoke fruits are wind-dispersed (Munger 2006, Voss 1985). The flowers produce both nectar and pollen. They are frequently visited by bumblebees, which are able to force their way into the mostly closed flowers and reach the nectar (Wheeler 2018). Smaller bees such as sweat bees from the genus *Lasioglossum* feed on pollen grains from the opening of the flower (Holm 2014).

Table 2. Phenology of *Geum triflorum* var. *triflorum* in New York State (NYNHP 2023).

Phenology	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flowering												
Fruiting												

VI. Threats

Threats to the alvar habitats with prairie smoke populations include the invasion of exotic plants, such as pale swallowwort (*Vincetoxicum rossicum*), European buckthorn (*Rhamnus cathartica*), and shrub honeysuckles (*Lonicera* spp.), grazing, trampling (especially ORV damage),

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:

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>

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

Gertens Garden Center. 2024. Plant Finder Connection: Prairie Smoke - *Geum triflorum*. https://plants.gertens.com/12070009/Plant/2373/Prairie_Smoke/#:~:text=Planting%20%26%20Growing&text=It%20grows%20at%20a%20medium,from%20the%20base%20each%20spring. [Accessed 3/26/2024].

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.

Holm, Heather 2014. Pollinators on Native Plants. Minnetonka, MN: Pollinator Press. pp. 80–81.

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.

Luna, Tara; Evans, Jeff; Wick, Dale. 2008. Propagation protocol for production of Container (plug) *Geum triflorum* (Pursh) Fassett plants 160 ml containers; USDI NPS - Glacier National Park West Glacier, Montana. In: Native Plant Network. URL: <https://NativePlantNetwork.org> (accessed 2024/03/26). US Department of Agriculture, Forest Service, National Center for Reforestation, Nurseries, and Genetic Resources. *Geum* (*triflorum*) <https://nnp.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=rosaceae-geum-186&referer=wildflower> [Accessed 3/26/2024].

Mitchell, Richard S. and Gordon C. Tucker. 1997. Revised Checklist of New York State Plants. Contributions to a Flora of New York State. Checklist IV. Bulletin No. 490. New York State Museum. Albany, NY. 400 pp.

Munger, Gregory T. 2006. *Geum triflorum*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <https://www.fs.usda.gov/database/feis/plants/forb/geutri/all.html> <https://xerces.org/blog/prairie-smoke>

New York Natural Heritage Program. 2024. Online Conservation Guide for Wet alvar grassland. Available from: <https://guides.nynhp.org/wet-alvar-grassland/>. [Accessed 3/26/2024].

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.

Roat, Brian. 2015. Removal of Invasive Brush Species from Chaumont Barrens Preserve August - October 2015. https://www.sleloinvasives.org/wp-content/uploads/2017/06/Chaumont-Barrens-Project-Report-2015_ed-PDF.pdf [Accessed 3/26/2024].

Voss, Edward G. 1985. Michigan flora. Part II. Dicots (Saururaceae--Cornaceae). Bull. 59. Bloomfield Hills, MI: Cranbrook Institute of Science; Ann Arbor, MI: University of Michigan Herbarium. 724 p.

Wheeler, Justin. "Weird and Wonderful Plants for Pollinators: Prairie Smoke". Xerces Society. <https://xerces.org/blog/prairie-smoke> [Accessed 3/26/2024].

Zaremba, Robert E. 1991. Corrections to phenology list of April 9, 1991.