

Champlain Beachgrass



Scientific Name	<i>Ammophila breviligulata</i> ssp. <i>champlainensis</i> (Seymour) P.J. Walker, C.A. Paris & Barrington ex Barkworth
Family Name	Poaceae Grass Family

Did you know?

Champlain beachgrass originated from coastal populations that migrated westward along the shores of the Champlain Sea, an arm of the Atlantic Ocean that filled the basins of the St. Lawrence River and Lake Champlain after the retreat of the Laurentide ice sheet about 10,000-11,500 years ago. Our plants were isolated from coastal populations as the land rebounded and cut off the Champlain Sea from the Atlantic Ocean.

Summary

Protection Endangered in New York State, not listed federally.

This level of state protection means: listed species are those with: 1) 5 or fewer extant sites, or 2) fewer than 1,000 individuals, or 3) restricted to fewer than 4 U.S.G.S. 7 ½ minute topographical maps, or 4) species listed as endangered by U.S. Department of Interior.

Rarity G2G3Q, S1

A global rarity rank of G2G3Q means: Imperiled or Vulnerable globally - At high or moderate risk of extinction due to rarity or other factors; typically 80 or fewer populations or locations in the world, few individuals, restricted range, few remaining acres (or miles of stream), and/or recent and widespread declines. More information is needed to assign a single conservation status. The Q indicates this species' status as a distinctive full species is uncertain.

A state rarity rank of S1 means: This plant is endangered/critically imperiled in New York because of extreme rarity (typically 5 or fewer populations or very few remaining individuals) or is extremely vulnerable to extirpation from New York due to biological factors.

Conservation Status in New York

Based on the current circumscription, there is an estimate of six known populations. Most of these are threatened at some level by the introduction of the Cape strain (*Ammophila breviligulata*). This introduced strain is more aggressive and may genetically swamp the true native population. There are also numerous development and recreational activities that may threaten these populations.

Short-term Trends

The number of populations is stable and no more populations are expected. Within the Great Lakes, populations of the more vigorous Cape strain (*Ammophila breviligulata*) are probably outcompeting and reducing numbers of the true native Champlain strain but the speed of this reduction is not known.

Long-term Trends

Development at the Plattsburgh population and along the Lake Erie and Lake Ontario shorelines has substantially reduced numbers of plants from historical levels by cutting off natural dune formation and by introducing Cape strain (*Ammophila breviligulata*) that has outcompeted the native dune grass.

Conservation and Management

Threats

Beach erosion and the development of a park at the Plattsburgh population threaten regeneration. The plants along the Great Lakes shorelines are threatened by the introduction of the Cape strain (*Ammophila breviligulata*) that outcompetes the native dune grass.

Conservation Strategies and Management Practices

Along the Great Lakes shores, the non-native Cape strain (*Ammophila breviligulata*) needs to be eliminated and replaced with the native species. The dunes in Plattsburgh need to be monitored every five years to evaluate how this grass is regenerating.

Research Needs

Research needs to be done on how this species competes with the more vigorous Cape strain (*Ammophila breviligulata*) and how this applies to management needs. Can this grass be grown, planted, and used as a viable restoration species for Great Lake and Lake Champlain dunes?

Habitat

A beachgrass found on the sand beaches and dunes along Lake Champlain and the eastern shore of Lake Ontario, particularly on the top and front sides of the low lake dunes (New York Natural Heritage Program 2002). Dunes and dry sandy shores (Gleason & Cronquist 1991, under *Ammophila breviligulata*).

Associated Ecological Communities

Great Lakes Dunes

A community dominated by grasses and shrubs that occurs on active and stabilized sand dunes along the shores of the Great Lakes. Unstable dunes are sparsely vegetated, whereas the vegetation of stable dunes is more dense, and can eventually become forested.

Sand Beach

A sparsely vegetated community that occurs on unstable sandy shores of large freshwater lakes, where the shore is formed and continually modified by wave action and wind erosion. Characteristic species that are usually present at very low percent cover include various grasses and other herbs.

Associated Species

American Beachgrass (*Ammophila breviligulata*)
Houghton's Umbrella-sedge (*Cyperus houghtonii*)
Sand-heather (*Hudsonia tomentosa*)
Beach Pea (*Lathyrus japonicus*)
Sand Cherry (*Prunus pumila* var. *pumila*)
Sand Dune Willow (*Salix cordata*)
Salix exigua

Identification Comments

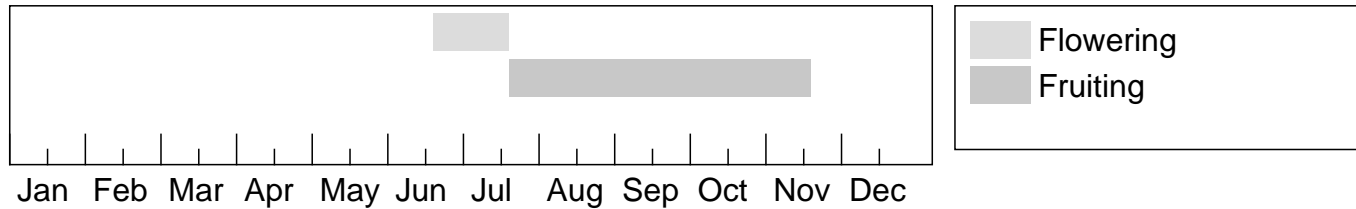
Champlain dune grass dominates the small dunes of Lake Champlain and portions of Lake Ontario. Long rhizomes produce many clumps that can be scattered in the sand or tightly arranged to cover the dune. Many long, flexible, very narrow leaves arise like a fountain from a central clump. They are flat at the base but the margins become inrolled toward the narrow sharp tip. One to many flowering stems grow from the base of the clump and reach 2-3 feet in height. They produce many flowers arranged in a compact spike-like inflorescence 13-21 cm long in the top half to one-third of the stem. A so-called flag leaf arises just below the inflorescence and measures 8-22 cm long. The yellow anthers give the inflorescence its color as they hang out of the flowers. When the flowers mature and senesce they turn tan to brown. Reproduction is primarily vegetative and seed production and seedling survival is very low. Flowering stems are seen more often in moving sand near the water and can be absent in plants that persist in sand that has been stabilized for many years.

Best Life Stage for Identifying This Species

Catching this grass in flower offers the best opportunity to properly identify it. A specimen should be collected and measurements made of the flag leaf and panicle to properly identify this species.

The Best Time to See

This grass flowers in late June to early July. The flowering stalks and leaves can be seen whenever they are not covered by snow, but they are often difficult to identify to the species level unless you are intimately familiar with *Ammophila*. Surveys should be conducted during the peak flowering period.



The time of year you would expect to find Champlain Beachgrass in New York.

Similar Species

Ammophila breviligulata occurs on the Atlantic coast and has been planted throughout the range of *Ammophila champlainensis*. This more common species has a larger panicle (23-30 cm long), larger flag leaf (30-24 cm long), and flowers in late August and September.

Conservation Comments

This was recently described as a subspecies instead of a full species. SIDA Vol. 22(1):496.

Taxonomy

Kingdom Plantae

└ Phylum Anthophyta

└ Class Monocots (Monocotyledoneae)

└ Order Cyperales

└ Family Poaceae (Grass Family)

Synonyms

Ammophila breviligulata (Fern.)

Ammophila champlainensis (Seymour)

Additional Resources

Links

New York Flora Atlas

<http://www.newyork.plantatlas.usf.edu/Plant.aspx?id=2131>

USDA Plants Database

<http://plants.usda.gov/java/nameSearch?mode=sciname&keywordquery=>

AMMOPHILA+CHAMPLAINENSIS

NatureServe Explorer

<http://natureserve.org/explorer/servlet/NatureServe?searchName=AMMOPHILA+CHAMPLAINENSIS>

Google Images

<http://images.google.com/images?q=AMMOPHILA+CHAMPLAINENSIS>

Best Identification Reference

Tucker, Gordon C. 1992. Our beachgrasses (Ammophila), Including the Rare Champlain Beachgrass. New York Flora Association Newsletter Vol. 3 (1):4. March 1992.

References

Barkworth, Mary E. 2006. A new hybrid genus and 12 new combinations in North American grasses. SIDA 22 (1): 495-501.

Cope, Edward A. 1994. Further Notes on Beachgrasses (Ammophila) in the Northeastern North America. New York Flora Association Newsletter Vol. 5 (2):3. May 1994.

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.

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.

Keys, Jr., J.; Carpenter, C.; Hooks, S.; Koenig, F.; McNab, W.H.; Russell, W.; Smith, M.L. 1995. Ecological units of the eastern United States - first approximation (cd-rom), Atlanta, GA: U.S. Department of Agriculture, Forest Service. GIS coverage in ARC/INFO format, selected imagery, and map unit tables.

NatureServe. 2005. NatureServe Central Databases. Arlington, Virginia. USA

New York Natural Heritage Program. 2010. Biotics database. New York Natural Heritage Program. New York State Department of Environmental Conservation. Albany, NY.

Reschke, Carol. 1990. Ecological communities of New York State. New York Natural Heritage Program, New York State Department of Environmental Conservation. Latham, NY. 96 pp. plus xi.

Seymour, F.C. 1966. *Ammophila Champlainensis* (Gramineae), a New Species in New York and Vermont. Sida 2:349-351.

Stern, Roger J. 1983. Morphometric and Phenologic Variability in *Ammophila breviligulata* Fernald. Masters Thesis, University of Vermont.

Walker, Peter J. 1998. Biogeography, speciation, and concerted evolution in *Ammophila* (Poaceae): infraspecific variation in the Internal Transcribed Spacer of Nuclear Ribosomal DNA. A thesis presented by Peter J. Walker to the faculty of the Graduate Coll

Weldy, T. and D. Werier. 2010. New York flora atlas. [S.M. Landry, K.N. Campbell, and L.D. Mabe (original application development), Florida Center for Community Design and Research <http://www.fccdr.usf.edu/>. University of South Florida <http://www.usf.edu/>

625 Broadway, 5th Floor,
Albany, NY 12233-4757
Phone: (518) 402-8935
acris@nynhp.org

This project is made possible with funding from:

- New York State Department of Environmental Conservation Hudson River Estuary Program
- Division of Lands & Forests, Department of Environmental Conservation
- New York State Office of Parks, Recreation and Historic Preservation

Information for this guide was last updated on Oct 27, 2015

This guide was authored by