

***Sphagnum cyclophyllum* New to Delaware and Maryland**

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Abstract. *Sphagnum cyclophyllum* Sullivant in A. Gray is considered a rare peat moss known from the southeastern United States and disjunct in Nova Scotia. This report fills a gap in the known distribution of the species documenting it from six locations on the Coastal Plain of Delaware and Maryland.

Keywords. *Sphagnum cyclophyllum*, new, Delaware, Maryland, rare

INTRODUCTION

Sphagnum cyclophyllum Sullivant in A. Gray (Sphagnaceae) is considered to be a rare peat moss (NatureServe 2012), found on wet substrates, in depressions, grassy savannas, flat-woods, swamps, pocosins, pine barrens, ditches and roadsides (McQueen & Andrus 2007; Anderson et al. 2009). In the U.S., *S. cyclophyllum* is primarily distributed on the Atlantic Coastal Plain, from New Jersey south to Florida, and west to east Texas (McQueen & Andrus 2007; Anderson et al. 2009). The species is disjunct in Nova Scotia and is also found in South America (McQueen & Andrus 2007). This report discusses the discovery of *S. cyclophyllum* in Delaware and Maryland (Fig. 1), announces new additions to the bryofloras of Delaware (McAvoy, unpublished data 2012) and Maryland (Dirago 2009), and fills a gap in the distribution of this species along the Atlantic Coastal Plain. An earlier report of *S. cyclophyllum* from Delaware and Maryland was inaccurate (Anderson et al. 2009; J. Shaw pers. comm.).

DISCUSSION

On 31 March 2010 the first author collected an odd peatmoss of uncertain identity growing in seasonally saturated grassy openings under a powerline right-of-way in Wicomico County, Maryland (Fig. 1). This peatmoss was distinct from other species of peatmoss known from Maryland in that it lacked a capitulum and was mostly unbranched. The first author subsequently identified this collection as *Sphagnum cyclophyllum*, a new addition to the bryoflora of Maryland (Dirago 2009). On 15 April 2010, the authors revisited the Wicomico Co. site in order to further assess the population. Later that same day we discovered another population in Sussex County, Delaware (Fig. 1), which was also new to the state's bryoflora (McAvoy, unpublished data 2012). *Sphagnum cyclophyllum* has since been documented at a total of six stations in Delaware and Maryland (Fig. 1): Delaware – Sussex Co. (two populations); Maryland – Dorchester Co. (two populations), and Wicomico Co. (two populations).

At all of these sites, *S. cyclophyllum* was lax and procumbent on the soil surface or floating in seasonally flooded pools of water. When floating in flooded pools, the species is much easier to observe, making late winter and early spring months ideal for surveys when pools are water-filled. As the growing season progresses and these pools dry, the species suffers severe dehydration making it very difficult to find.

All populations of *S. cyclophyllum* documented in Delaware and Maryland (Fig. 1) occur on sites that are anthropogenic in origin (powerline right-of-ways, tire ruts, and mowed grassy swales), but common to all these populations/sites are very poorly drained, very acidic, organic sandy-loam soils (USDA Web Soils Survey), that when disturbed, allow water to stand creating habitat attractive to species like *S. cyclophyllum*. Other species of *Sphagnum* observed at these sites include: *Sphagnum capillifolium* (Ehrh.) Hedw., *S. cuspidatum* Hoff., *S. papillosum* Lindb., *S. perichaetiale* Hampe, and *S. recurvum* P. Beauv. Currently, *S. cyclophyllum* is not known to inhabit “natural” habitats in Delaware and Maryland. However, at one of the Sussex Co. sites (a mowed, poorly drained grassy swale), a seasonally flooded, natural wetland depression occurs no more than 50 meters away. The area surrounding the swale and wetland depression has been converted to a pine plantation and the depression has succeeded to a closed canopy. As a result, herbaceous vegetation (both vascular and non-vascular) does not exist. Based on habitat descriptions in the literature (Karlin & Andrus 1988; McQueen & Andrus 2007; Anderson et al. 2009) and consultations with knowledgeable individuals (Kathleen Walz, pers. comm. 2010), it is possible that *S. cyclophyllum* occurred within this depression prior to disturbance. The soils and site descriptions previously mentioned do occur in neighboring Worcester Co Maryland., and other areas of Sussex Co., Delaware, as well as in the southern Delmarva Peninsula counties of Accomack and Northampton Co.’s, Virginia (Fig. 1), so additional populations of *S. cyclophyllum* are likely to be found in the future. However, surveys in 2010 by the second author in suitable habitat in Accomack and Northampton Counties (Fig. 1), proved unsuccessful.

SPECIMEN CITATIONS

Delaware. Sussex Co.: shallow flooded swales (2-3 inches of water when collected) on sandy-peaty-acid soil; forming dense mats in sun; on power-line ROW, W of Rt. 113, NW of Dagsboro, S of Millsboro, S side of Molly Field Rd., just SE of where road first crosses ROW from the east; 15 Apr 2010, *McAvoy 1081 & Knapp* (DOV & DUKE); abundant in a low swale on edge of wood on sandy-peaty-acid soil; swale is mowed by local hunters and is about 50 meters from a natural seasonal pond in adjacent wood; 0.2 miles W of Savanna Rd., 0.5 miles N of chicken processing plant, Georgetown, Glatfelter Pulp Co. property, 30 Mar 2011, *McAvoy 1090* (DOV).

Maryland. Dorchester Co.: frequent in tire ruts and swales on saturated sandy-peaty-acid soil; power-line ROW on N side of Jones Thicket Rd., SW of Brookview, 28 Apr 2010, *McAvoy 1086* (DOV); Powerline right-of-way N of Kelly Road, N the town of Vienna ca. 5.0 mi, E of Rt. 331, 25 May 2010, *Knapp 3329* (DOV).

Wicomico Co.: Chesapeake Forest Lands, 1 mi SW the intersection of Rt. 50 and 60-foot Road, Powerline right-of-way in shallow swale currently inundated, 31 March 2010, *Knapp 3000* (DOV & MO); In shallow flooded swale (2-4 inches) on sandy-peaty-acid soil; abundant on power-line ROW; E of Salisbury, S of Rt. 50, W of Sixty Foot Rd., N of Rohm Rd., E of Forest Grove Rd. 15 Apr 2010, *McAvoy 1086 & Knapp* (DOV); [same location] *Knapp & McAvoy 3008* (DOV & DUKE); Large powerline ESE the town of Salisbury and E of Rt. 12, S the intersection of Spearin Road, seasonal wet swales, 19 May 2010 *Knapp & Wilson 3311* (DOV).

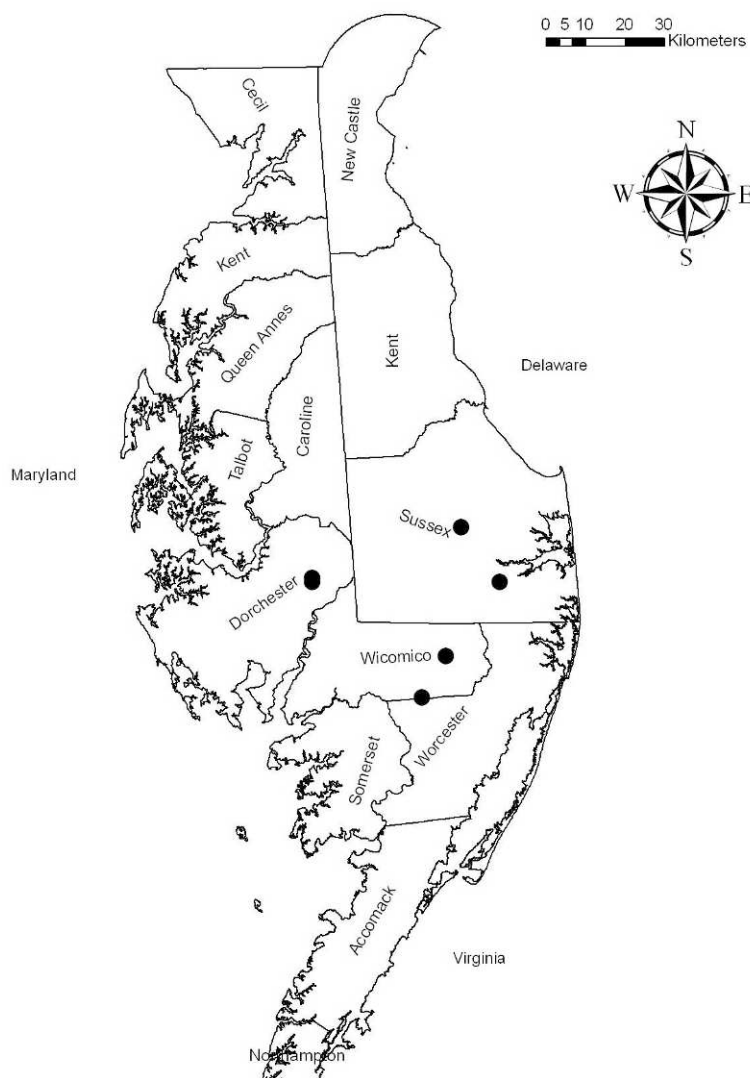


Figure 1. Location map for newly reported *Sphagnum cyclophyllum* collections. Dots = specimen locations.

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LITERATURE CITED

- Anderson, L.E., A.J. Shaw, and B. Shaw. 2009. Bronx, NY. Memoirs of the New York Botanical Garden. New York Botanical Garden Press. New York, NY. 110 pp.
- Darigo, C. 2009. A county checklist of the mosses of Maryland. *Evansia* 26:193-218.
- Karlin, E.F., and R.E. Andrus. 1988. The *Sphagnum* species of New Jersey. *Bulletin of the Torrey Botanical Club* 115(3): 168-195.
- McQueen, C. B. and R. E. Andrus. 2007. Sphagnaceae. Pp.30 in *Flora of North America*, vol. 27, ed. Flora of North America Editorial Committee. New York: Oxford University Press.
- NatureServe. 2012. NatureServe Explorer: an online encyclopedia of life. <<http://www.natureserve.org/explorer/>>. Accessed 12 February 2012.
- United States Department of Agriculture, Web Soils Survey. 2012. <<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>> Accessed 21 February 2012.