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A preliminary survey of the Bryophytes of the Sapa Bog

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Introduction

The Sapa Bog in Ozaukee County covers 5 hectares and is the southernmost black spruce bog in Wisconsin. Sedge meadow and swamp hardwoods surround an acidic center dominated by sphagnum mosses, black spruce and tamarack. Parker (1989) surveyed the fungi and Kline (1991) surveyed the vascular plants and described the water chemistry of the area.

We report a total of 56 bryophyte taxa collected in the Sapa Bog from 1989 to 1990. An asterisk indicates an apparently new report for Ozaukee County (Bowers and Freckmann, 1979). Citation of moss names follows Anderson, et. al. (1990) and Crum (1984) for *Sphagnum*. The liverworts nomenclature follows Conard and Redfearn (1979). Voucher specimens were deposited at the UW-Stevens Point and UWM Field Station herbaria.

Sapa Bog Bryophyte Species List

HEPATICAE (liverworts)

CEPHALOZIACEAE

**Cephalozia bicuspidata* (L.) Dum.
**Cephalozia connivens* (Dicks.) Lindb.

CONOCEPHALACEAE

**Conocephalum conicum* (L.) Lindb.

LOPHOCOLEACEAE

Lophocolea heterophylla (Schrad.) Dum.

MUSCI (mosses)

SPHAGNACEAE

Sphagnum capillifolium (Ehrh.) Hedw.
Sphagnum centrale C. Jens.
Sphagnum fimbriatum Wils. ex. Wils. & J.D. Hook.
Sphagnum fuscum (Schimp.) Klinggr.
Sphagnum girgensohnii Russ.
Sphagnum magellanicum Brid.
Sphagnum palustre L.
**Sphagnum papillosum* Lindb.
Sphagnum recurvum P. Beauv.
**Sphagnum recurvum* var. *brevifolium* (Lindb. ex Braithw.) Warnst.
Sphagnum recurvum var. *tenue* Klinggr.
**Sphagnum riparium* Angstr.
Sphagnum squarrosum Crome
**Sphagnum teres* (Schimp.) Angstr.
Sphagnum warnstorfii Russ.
**Sphagnum wulfianum* Girg.

AMBLYSTEGIACEAE

Amblystegium serpens var. *juratzkanum* (Schimp.) Rau. & Herv.
Amblystegium varium (Hedw.) Lindb.
**Calliergon cordifolium* (Hedw.) Kindb.
Calliergon giganteum (Schimp.) Kindb.
**Calliergon stramineum* (Brid.) Kindb.
Calliergonella cuspidata (Hedw.) Loeske
**Cratoneuron filicinum* (Hedw.) Spruce
Hygroamblystegium tenax (Hedw.) Jenn.
**Warnstorfia exannulata* (Schimp. in B.S.G.) Loeske

AULACOMNIACEAE

Aulacomnium palustre (Hedw.) Schwaegr.

BRACHYTHECIACEAE

**Brachythecium acuminatum* (Hedw.) Aust.

**Brachythecium salebrosum* (Web. & Mohr) Schimp. in B.S.G.

BRYACEAE

Bryum capillare Hedw.

Bryum lisae var. *cuspidatum* (Bruch. & Schimp. in B.S.G.) Marg.

**Pohlia nutans* (Hedw.) Lindb.

CLIMACIACEAE

Climacium dendroides (Hedw.) Web. & Mohr

DICRANACEAE

Dicranum polysetum Sw.

ENTODONTACEAE

**Entodon seductrix* (Hedw.) C. Mull.

FISSIDENTACEAE

**Fissidens adianthoides* Hedw.

Fissidens dubius P. Beauv.

HYPNACEAE

**Callicladium haldanianum* (Grev.) Crum

**Hypnum lindbergii* Mitt.

Platygyrium repens (Brid.) Schimp. in B.S.G.

HYLOCOMIACEAE

Pleurozium schreberi (Brid.) Mitt.

LESKEACEAE

Thuidium delicatulum (Hedw.) Schimp. in B.S.G.

**Thuidium philibertii* Limpr.

LEUCOBRYACEAE

Leucobryum glaucum (Hedw.) Angstr. in Fries

MNIACEAE

**Plagiomnium cuspidatum* (Hedw.) T. Kop.

Rhizomnium magnifolium (Horik.) T. Kop.

PLAGIOTHECIACEAE

**Plagiothecium cavifolium* (Brid.) Iwats.

Plagiothecium denticulatum (Hedw.) Schimp. in B.S.G.

POLYTRICHACEAE

Polytrichum commune Hedw.

Polytrichum juniperinum Hedw.

**Polytrichum longisetum* Brid.

**Polytrichum strictum* Brid.

TETRAPHIDACEAE

Tetraphis pellucida Hedw.

Discussion

This preliminary survey has identified 56 taxa of bryophytes in the Sapa Bog. Sphagnum mosses dominate the center of the bog where the pH range is 4-4.5. *Sphagnum magellanicum* is the major hummock former in the open center. *S. papillosum*, *S. palustre*, and *S. recurvum* form lower hummocks and are more common in the transition toward the bog edge. Many of the *Sphagna* are habitat specific with regard to moisture, sunlight and pH or nutrient levels (Andrus, 1986). *S. fuscum*, for example, grows only on the dry, acid tops of tall hummocks in the open bog. In contrast, compact mats of *S. centrale* are common in wet depressions shaded by conifers or swamp hardwoods with higher pH and nutrient levels. Throughout the bog and moat we identified 16 taxa of *Sphagna* which represent two-thirds of all the *Sphagnum* species found throughout the Great Lakes Region.

Other species growing in the ombrotrophic (mineral poor) portion of the bog are *Pohlia nutans*, commonly on *Sphagnum*; *Pleurozium schreberi*, in

wet shaded areas; and all the Hair cap mosses (*Polytrichum* sp.). All the Amblystegiaceae are found in wet depressions in the shade, again where pH and nutrient levels are slightly higher. The remaining species grow in a variety of habitats in the forested moat.

Collections from the nearby Cedarburg Bog, a much larger peatland and a rich fen, have identified approximately the same number of bryophyte taxa (John Christy, personal communication and UWSP herbarium). Horton collected from several area peatlands in 1984 and 1989 but did not indicate which taxa were found in the Sapa Bog (Horton, 1990). Most of the species we report here are common to both the Sapa Bog and the Cedarburg Bog. While there are no obligate bog bryophytes, many taxa require high nutrient levels and their presence indicates a minerotrophic (mineral rich) environment (see Janssens and Glaser, 1986). *Tomenthypnum nitens* and members of the Amblystegiaceae, such as *Scorpidium scorpioides*, *Drepanocladus revolvens*, and *Campylium stellatum* are common in the minerotrophic flarks of the Cedarburg Bog, but are absent from the Sapa Bog.

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