

BRYOPHYTE SURVEYS OF SELECTED OLD GROWTH FOREST STANDS AND OTHER SITES IN NORTHEASTERN MINNESOTA (1994-1996)

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Eleven sites were visited to survey bryophytes in northeastern Minnesota. These sites were composed mostly of old growth forests of White Pine (*Pinus strobus*), White Cedar (*Thuja occidentalis*), Yellow Birch (*Betula alleghaniensis*), and other areas of mixed woods, and were located in Cook County (4 sites), Lake County (6 sites) and St. Louis County (1 site). Ownership included 8 state areas and 4 Superior National Forest areas (one site had both state and federal ownership included). The taxa found included 55 hepatics (liverworts) and 185 mosses. One new taxon for the state was found, *Tetraplodon angustatus* (one of the "dung" mosses), and several others were identified for which there have been only a few previous collection sites in the state. The most species-rich site was in the North Arm Area (Superior National Forest) north of Ely, where 105 taxa were found. The least number of species collected at a site was 55 taxa at Loon Lake near the Gunflint Trail (Superior National Forest). Opportunistic collecting was done at each site with a conscious thought to find as many "niche" areas as possible while covering as much of the stand as possible. Sites were visited in 1994 and 1995, and collections were worked up in 1994 through early 1996. Eleven days were spent in the field and over twenty-two in the lab working with the specimens.

FINAL REPORT OF BRYOPHYTE SURVEYS OF SELECTED OLD GROWTH STANDS AND OTHER SITES IN NORTHEASTERN MINNESOTA (1994 -1996).

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A total of 240 taxa were identified in the collections from the eleven sites in NE Minnesota as noted below. A few have been sent to various experts and have not been returned yet. A few I have not made my mind up on yet but will soon. Several are of interest to bryologists as being new for the state (two?), new for counties and also perhaps only the second or third report of the taxa for the state. Eleven days were spent in the field and approximately twice that or more in lab on identification and packeting the specimens. Labels are being typed now and the first set of herbarium packets will be sent to the herbarium at the University of Minnesota, St. Paul. I would like to combine some of the data with work done here in Wisconsin on a paper on Old Growth bryophytes.

SURVEY AND VISIT SITE INFORMATION:

KAWISHIWI PINES SNA/RNA

A number of habitats in this area ranging from dry pine areas to wet boggy Suhagnum spots. The number of taxa was 102 with only one being apparently a new report from the state (Tetraplodon angustatus). The Tetraglodon is a "dung" moss being usually restricted to carnivorous animal dung and in this case appeared to be on an owl pellet in an area that was not unique. No other unusual bryophytes were collected but enough diverse habitats to have the greatest number of taxa for any one site.
Site visited 30 Aug. 1994 and 1 Sept. 1994 with Mary Shedd.

LUTSEN SNA

Habitats included white cedar woods, wet seep areas and large birch. Generally disappointed with diversity found at least for bryophytes. Eighty taxa were found in the area with none being of significance.
Site visited 17 Sept. 1994.

NORTH ARM AREA

Varied habitats including dry and wet cliff faces, white pine woods, and wet swampy area near lake. Three taxa were not identified and have been sent to Mo. Botanical Garden for identification by Bruce Allen. One of these may be Cynodontium schisti which would be apparently a new report for the state. The best collecting for uncommon bryophytes was on a dry cliff facing the lake. Other areas did not apparently contain unusual taxa.
Site visited 31 Aug. 1994.

CROSBY- MANITOU STATE PARK- DNR

Old growth white cedar and yellow birch and old growth hardwoods. Best collecting areas were near small stream in area. Only 68 taxa were found in the two areas with most being in the white cedar/stream area. No unusual taxa were found.
Site visited 22 & 23 Sept. 1995

HEARTBREAK CREEK RNA

Old growth white cedar and fairly wet. Very disappointed with number of taxa being only 71 found. An abundance of bryophytes but not much variety and none apparently unusual.
Site visited 17 & 18 Sept. 1994.

WANLESS LAKE - DNR

A very nice white cedar area and fairly wet. Abundance of mosses but not much variety found. Sixty-five taxa were collected with none being noted as unusual.
Site visited 18 Sept. 1994.

LOON LAKE

White pine old growth with mixed conifers and hardwoods. A total of 55 taxa were noted for area with none of unusual significance. Generally fairly dry for bryophytes and with no major rock outcrops.
Site visited 8 Sept. 1995

TETTEGOUCHE STATE PARK- DNR

Old growth white pine, white cedar and yellow birch. Surprisingly low diversity for a fairly nice bryophyte area. Seventy taxa were found most of these in the white cedar area. A few were found on the rock outcrops near lake.
Site visited 2 Sept. 1994.

TEMPERANCE RIVER STATE PARK - DNR

Lake Superior shoreline at river entrance and lower Temperance River Gorge. Rock outcrops, wet gorge sides and some mixed woods. I expected a higher diversity than found. Some found are the "rare" rock mosses such as Anomobryum filiforme, Dichodontium pellucidum, Didymodon rigidulus, Didymodon tophaceus, Encalypta ciliata, and Eucladium verticillatum. However, I think you could stop at almost any of the river gorges or cliffs with some seeping water and find most of the same taxa. Still a nice area and should be re-visited in the spring when some mosses might have sporophytes and could be found easier. I made my way down only to some easier areas of the gorge and probably could have used a canoe or boat profitably and/or ropes with help.
Site visited 9 Sept. 1995

JUDGE MAGNEY STATE PARK - DNR

Old growth white cedar. Fairly dry area and very narrow band of white cedar above river. Sixty-nine taxa were noted. Only Dicranum fragilifolium was of great interest. I have collected it only once before at Artist Point, Grand Marais. As far as I know it has only been reported before in Minnesota by Jan Janssens in Anoka county. Probably more hepatics could be collected on the white cedar than I achieved. Site visited 21 Sept. 1995.

KEELY CREEK

Old growth white pine and rather rich mixed woods. A total of 83 taxa identified from this area. Diverse with large rock boulders/outcrops, wet peat areas and mixed woods. Nothing that could be considered rare but still a nice collection of bryophytes of different niches. Site visited 29 August 1994.

**Bryophyte Surveys of Selected Old Growth Stands and Other Sites in
Northeastern Minnesota
March, 1996. Frank D. Bowers**

Bryophyte List of Genera and Species from Eleven Sites Visited:

Moss:

Abietinella abietina (Hedw.) Fleisch.
Amblystegium serpens var. serpens (Hedw.) Schimp. in B.S.G.
Amblystegium varium (Hedw.) Lindb.
Anomobryum filiforme (Dicks.) Solins in Rabenh.
Anomodon attenuates (Hedw.) Hub.
Anomodon rostratus (Hedw.) Schimp.
Atrichum angustatum (Brid.) Bruch. & Schimp. in B.S.G.
Atrichum crispum (James) Sull.
Atrichum oerstedianum (C. Mull.) Mitt.
Aulacornnium palustre (Hedw.) Schwaegre.
Barbula unguiculata Hedw.
Bartramia pomiformis Hedw.
Brachythecium acuminatum (Hedw.) Aust.
Brachythecium capestre (C. Muell.) Schimp. in B.S.G.
Brachythecium digastrum C. Mull. & Kindb. in Mac. & Kindb.
Brachythecium oedipodium (Mitt.) Jaeg.
Brachythecium oxycladon (Brid.) Jaeg.
Brachythecium plumosum (Hedw.) Schimp. in B.S. G.
Brachythecium populeum (Hedw.) B.S.G.
Brachythecium reflexum (Starke in Web. & Mohr) Schimp. in B.S.G.
Brachythecium rivulare B.S.G.
Brachythecium rutabulum (Hedw.) Schimp. in B.S.G.
Brachythecium salebrosum (Web. & Mohr) Schimp. in B.S.G.
Brachythecium velutinum (Hedw.) B.S.G.
Brotherella recurvans (Michx.) Fleisch.
Bryhnia graminicolor (Brid.) Grout
Bryhnia novae-angliae (Sull. & Lesq, in Sull.) Grout

Bryoerythrophyllum recurirostre (Hedw.) Chen
Bryohaplocladium microphyllum (Hedw.) Gaertn. et al.
Bryum sp.
Bryum amblyodon C. Muell. (B. stenotrichum)
Bryum argenteum Hedw.
Bryum caespiticiurn Hedw.
Bryum capillare Hedw.
Bryum lisae var. cuspidatum (Brach. ex B.S.G.) Marg.
Bryum pseudotriquetrum (Hedw.) Gaertn. et al.
Bryum uliginosum (Brid.) Brach & Schimp. in B.S.G.
Callicladium haldanianum (Grev.) Cram
Calliergon cordifolium (Hedw.) Kindb.
Calliergon richardsonii (Mitt.) Kindb. in Warnst.
Calliergon stramineum (Brid.) Kindb.
Campylium chrysophyllum (Brid.) J. Lange
Campylium hispidulum (Brid.) Mitt.
Campylium polygamum (Schimp. in B.S.G.) C. Jens
Campylium radicale (P. Beauv.) Grout
Campylium stellatum (Hedw.) C. Jenns.
Ceratodon purpureus (Hedw.) Brid.
Climacium dendroides (Hedw.) Web. & Mohr
?Cynodontium schistii (Web. & Mohr) Lindb.
Cyrto-hypnum minutulum (Hedw.) Buck & Cram
Dichelyrna capillaceum (With.) Myr.
Dichodontium pellucidum (Hedw.) Schimp.
Dicranella heteromalla (Hedw.) Schimp.
Dicranum sp.
Dicranum condensatum Hedw.
Dicranum flagellare Hedw.
Dicranum fragilifolium Lindb.
Dicranum fuscescens Turn.
Dicranum montanum Hedw.
Dicranurn muehlenbeckii Bruch. & Schimp. in B.S. G.
Dicranurn ontariense Peters.

Dicranum polysetum Sw.
Dicranum scoparium Hedw.
Dicranum viride (Sull. & Lesq. in Sull.) Lindb.
Didymodon rigidulus Hedw.
Didymodon tophaceus (Brid.) Lisa
Distichium capillaceum (Hedw.) Bruch & Schimp. in B.S. G.
Drepanocladus aduncus var. aduncus (Hedw.) Warnst. Encalypta ciliata Hedw.
Eucladium verticillatum (Brid.) Bruch. & Schimp. in B.S.G.
Eurhynchium hians (Hedw.) Sande Lac
Eurhynchium pulchellurn (Hedw.) Jenn.
Fissidens cristatus Wils. ex Mitt.
Fissidens osmundioides Hedw.
Fontinalis novae-angliae Sull.
Grimmia sp.
Grimmia affinis Hoppe & Hornsch. ex Hornsch.
Gymnostomum aeruginosum Sm.
Haplohymenium triste (Ces. in De Not.) Kindb.
Hedwigia ciliata (Hedw.) P. Beauv.
Hematocaulis vernicosus (Mitt.) Hedenas
Herzogiella turfacea (Lindb.) Iwats.
Herzogiella striatella (Brid.) Iwats.
Homalia trichomanoides (Hedw.) Schimp. in B.S.G.
Hygroamblystegium tenax (Hedw.) Jenn.
Hygroamblystegium tenax var. spinifolium (Schimp.) Jenn.
Hylocomiastrum pyrenaicum (Spruce) Fleisch. in Broth.
Hylocomium splendens (Hedw.) Schimp. in B.S.G.
Hypnum curvifolium Hedw.
Hypnum fertile Sendtn.
Hypnum imponens Hedw.
Hypnum lindbergii Mitt.
Hypnum pallescens (Hedw.) P. Beauv.
Isopterygiopsis pulchella (Hedw.) Iwats.
Leptobryum pyriforme (Hedw.) Wils.
Leptodictyum riparium (Hedw.) Warnst.

Leskea polycarpa Hedw.
Leskeella nervosa (Brid.) Loeske
Leucobryum glaucum (Hedw.) Angstr. in Fries
Leucodon brachypus var. *andrewsianus* Cram & Anderson
Limprichtia revolvens (Sw.) Loeske
Lindbergia brachyptera (Mitt.) Kindb.
Mniurn ambiguum H. Muell.
Mnium hornum Hedw.
Mnium marginatum (With.) Brid. ex P. Beauv.
Mnium spinulosum Bruch & Schimp. in B.S.G.
Mniurn thornsonii Schimp.
Myurella julacea (Schwaegr.) Schimp. in B.S. G.
Neckera pennata Hedw.
Oncophorus wahlenbergii Brid.
Orthotrichum sp.
Orthotrichum obtusifolium Brid.
Orthotrichum pumillum Sw.
Orthotrichum sordidum Sul & Lesq. in Aust.
Orthotrichum speciosum var. *elegans* (Schwaegr. ex Hook. & Grev.) Warnst.
Orthotrichum stellatum Brid.
Paraleucobryum longifolium (Hedw.) Loeske
Philonotis fontana (Hedw.) Brid.
Plagiomnium ciliare (C. Mull.) T. Kop.
Plagiornnium cuspidatum (Hedw.) T. Kop.
Plagiomnium ellipticum (Brid.) T. Kop.
Plagiomnium medium (Bruch & Schimp. in B.S.G.) T. Kop.
Plagiomnium rostratum (Schrad.) T. Kop.
Plagiothecium cavifolium (Brid.) Iwats.
Plagiothecium denticulatum (Hedw.) Schimp. in B.S.G.
Plagiothecium laetum Schimp. in B.S.G.
Platygyrium repens (Brid.) Schimp. in B.S.G.
Pleurozium schreberi (Brid.) Mitt.
Pogonatum alpinum (Hedw.) Rohl.
Pohlia cruda (Hedw.) Lindb.

Pohlia nutans (Hedw.) Lindb.
Polytrichum commune Hedw.
Polytrichum longisetum Brid.
Polytrichum juniperinum Hedw.
Polytrichum pallidisetum Funck
Polytrichum piliferum Hedw.
Polytrichum strictum Brid.
Ptilium cristacastrensis (Hedw.) De Not.
Pylaisiella polyantha (Hedw.) Grout
Pylaisiella selwynii (Kindb.) Crum et al.
Racomitrium heterostichum (Hedw.) Brid.
Rhabdoweisia crispata (With.) Lindb.
Rhizomnium appalachianum T. Kop.
Rhizomnium magnifolium (Horik.) T. Kop.
Rhizomnium punctatum (Hedw.) T. Kop.
Rhytidiadelphus triquetrus (Hedw.) Warnst.
Saelania glaucescens (Hedw.) Broth. in Bomanss. & Broth.
Sanionia uncinata (Hedw.) Loeske
Schistidium agassizii Sull. & Lesq. in Sull.
Schistidium apocarpum (Hedw.) Bruch & Schimp. in B.S.G.
Sphagnum sp.
Sphagnum capillifolium (Ehrh.) Hedw.
Sphagnum centrale C. Jens. in Arnell & C. Jens.
Sphagnum compactum DC in Lam. & DC
Sphagnum fimbriatum Wils. in Wils. & Hook.
Sphagnum fuscum (Schimp.) Klinggr.
Sphagnum girgensohnii Russ.
Sphagnum magellanicum Brid.
Sphagnum papillosum Lindb.
Sphagnum recurvum P. Beauv.
Sphagnum recurvum var. *brevifolium* (Lindb. ex Braithw.) Warnst.
Sphagnum recurvum var. *tenue* Klinggr.
Sphagnum russowii Warnst.
Sphagnum squarrosum Crome

Sphagnum teres (Schimp.) Angstr. in Hartm.
Sphagnum warnstorffii Russ.
Sphagnum wulfianum Girg.
Splachnuxn ampullaceum Hedw.
Stereocleus serrulatus (Hedw.) Robins.
Taxiphyllum deplanatum (Brach & Schimp. ex Sall.) Fleisch.
Taxiphyllum taxirameum (Mitt.) Fleisch.
Tetraphis pellucida Hedw.
Tetraplodon angustatus (Hedw.) Brach & Schimp. in B.S.G.
Thuidium delicatulum (Hedw.) Schimp. in B.S.G.
Thuidium philibertii Limpr.
Thuidium recognitum (Hedw.) Lindb.
Tortella fragilis (Hook. & Wils. in Drumm.) Limpr.
Tortella humilis (Hedw.) Jenn.
Tortella tortuosa (Hedw.) Limpr.
Tortula ruralis (Hedw.) Gaertn. et al.
Trematodon ambigua (Hedw.) Hornsch.
Ulota crispa (Hedw.) Brid.
Warnstorfia exannulata (Schimp. in B.S.G.) Loeske
Warnstorfia fluitans var. *fluitans* (Hedw.) Lindb.
Zygodon viridissimus var. *rupestris* Lindb. ex. Hartm.

Hepatics:

Anastrophyllum hellerianum (Nees) Schust.
Aneura pinguis (L.) Dam.
Barbilophozia attenuata (Mart.) Loeske
Barbilophozia barbata (Schmid. ex Schreb.) Loeske
Barbilophozia kunzeana (Hub.) Gams
Bazzania trilobata (L.) S. Gray
Blepharostoma trichophyllum (L.) Dum.
Calypogeia integristipula Steph.
Calypogeia rnuelleriana (Schiffn.) K. Mull.
Calypogeia neesiana (Mass. et Carest.) K. Mull.

Cephalozia bicuspidata (L.) Dum.
Cephalozia catenulata (Hub.) Lindb.
Cephalozia connivens (Dicks) Lindb.
Cephalozia lunulifolia (Dum.) Dum.
Cephaloziella rubella var. rubella (Nees) Warnst.
Chiloscyphus minor (Nees) Eng. & Schust.
Chiloscyphus polyanthus (L.) Corda
Chiloscyphus profundus (Nees) Eng. & Schust.
Conocephalum conicum (L.) Lindb.
Frullania sp.
Frullania bolanderi Aust.
Frullania brittoniae Evans
Frullania eboracensis subsp. eboracensis Gott.
Frullania inflata Gott.
Frullania tamarisci var. asagrayana (Mont.) Hatt.
Geocalyx graveolens (Schrad.) Nees
Harpanthus scutatus (Web. & Mohr) Spruce
Jamesoniella autumnalis (D.C.) Steph.
Jungermannia lanceolata L.
Lejeunea cavifolia (Ehrh.) Lindb.
Lepidozia reptans (L.) Dum.
Lophocolea heterophylla (Schrad.) Dum.
Lophozia attenuata (Mart.) Dum.
Lophozia barbata (Schmid.) Dum.
Lophozia cf excisa (Dicks.) Dum.
Lophozia longidens (Lindb.) Mac.
Lophozia ventricosa (Dicks.) Dum.
Marchantia polymorpha L.
Nowellia curvifolia (Dicks.) Mitt.
Odontoschisma denudatum (Nees) Dum.
Phaeoceros laevis (L.) Prosk.
Plagiochila asplenoides subsp. porelloides (Torrey ex Nees) Schust.
Porella platyphylla (L.) Pfeiff.
Porella platyphylloidea (Schwein.) Lindb.

Preissa quadrata (Scop.) Nees

Ptilidium ciliare (L.) Harnpe.

Ptilidium pulcherrimum (G. Web.) Harnpe.

Radula cornplanata (L.) Dum.

Radula obconica Sull.

Riccia fluitans L.

Scapania irrigua (Nees) Gott. et al.

Solenostoma pumilum subsp. *polaris* (Berggr.) Schust.

Telaranea nematodes (Gott. ex Aust.) M. A. Howe

Tritomaria exsectiformis (Bridl.) Schiffn.

?*Tritomaria quinquentata* (Thuds.) Buch

Heartbreak Creek cRNA (State of Minnesota), Lake County, Minnesota
Old Growth White Pine

Bryophyte Lists: March, 1996, Frank D. Bowers

Moss:

Atrichum oerstedianum (C. Mull.) Mitt.
Brachythecium oxycladon (Brid.) Jaeg.
Brachythecium velutinum (Hedw.) B.S. G.
Brotherella recurvans (Michx.) Fleisch.
Bryhnia novae-angliae (Sull. & Lesq. in Sull.) Grout
Bryum pseudotriquetrum (Hedw.) Gaertn. et al.
Callicladium haldanianum (Grev.) Crum
Calliergon cordifolium (Hedw.) Kindb.
Campylium chrysophyllum (Brid.) J. Lange
Campylium stellatum (Hedw.) C. Jenns.
Climacium dendroides (Hedw.) Web. & Mohr
Dicranum flagellare Hedw.
Dicranum muehlenbeckii Bruch. & Schimp. in B.S. G.
Dicranum scoparium Hedw.
Dicranum viride (Sull. & Lesq. in Sull.) Lindb.
Eurhynchium pulchellum (Hedw.) Jenn.
Fissidens osmundioides Hedw.
Hylocomiastrum pyrenaicum (Spruce) Fleisch. in Broth.
Hylocomium splendens (Hedw.) Schimp. in B.S. G.
Hypnum fertile Sendtn.
Hypnum imponens Hedw.
Hypnum lindbergii Mitt.
Leskeella nervosa (Brid.) Loeske
Mnium marginatum (With.) Brid. ex P. Beauv.
Mnium spinulosum Bruch & Schimp. in B.S. G.
Neckera pennata Hedw.

Oncophorus wahlenbergii Brid.
Paraleucobryum longifolium (Hedw.) Loeske
Plagiothecium denticulatum (Hedw.) Schimp. in B.S. G.
Platygyrium repens (Brid.) Schimp. in B.S. G.
Pleurozium schreberi (Grid.) Mitt.
Pohlia nutans (Hedw.) Lindb.
Ptilium cristacastrensis (Hedw.) De Not.
Pylaisiella polyantha (Hedw.) Grout
Pylaisiella selwynii (Kindb.) Crum et al.
Rhizomnium appalachianum T. Kop.
Rhizomnium magnifolium (Honk.) T. Kop.
Rhytidiadelphus triquetrus (Hedw.) Warnst.
Sanionia uncinata (Hedw.) Loeske
Sphagnum sp.
Sphagnum fimbriatum Wits. in Wits. & Hook.
Sphagnum girgensohnii Russ.
Sphagnum papillosum Lindb.
Sphagnum russowii Warnst.
Sphagnum teres (Schimp.) Angstr. in Hartm.
Sphagnum wulfianum Girg.
Stereocleus serrulatus (Hedw.) Robins.
Taxiphyllum deplanatum (Bruch & Schimp. ex Sull.) Fleisch.
Tetraphis pellucida Hedw.
Thuidium philibertii Limpr.
Thuidium recognitum (Hedw.) Lindb.
Ulota crispa (Hedw.) Brid.
Zygodon viridissimus var. *rupestris* Lindb. ex. Hartm.

Hepatics:

Barbilophozia attenuata (Mart.) Loeske
Bazzania trilobata (L.) S. Gray
Blepharostoma trichophyllum (L.) Dum.
Cephalozia connivens (Dicks) Lindb.

Cephalozia lunulifolia (Dum.) Dum.
Conocephalum conicum (L.) Lindb.
Frullania brittoniae Evans
Frullania eboracensis subsp. eboracensis Gott.
Frullania inflata Gott.
Frullania tamarisci var. asagrayana (Mont.) Hatt.
Harpanthus scutatus (Web. & Mohr) Spruce
Jamesoniella autumnalis (D.C.) Steph.
Lepidozia reptans (L.) Dum.
Lophozia barbata (Schmid.) Dum.
Ptilidium pulcherrimum (G. Web.) Hampe.
Radula complanata (L.) Dum.
Scapania irrigua (Nees) Gott. et al.
?Tritomaria quinquentata (Thuds.) Buch

**Lutsen SNA (State of Minnesota) Cook County, Minnesota.
Old Growth White Cedar and Birch.**

Bryophyte Lists: March, 1996. Frank D. Bowers

Moss:

Amblystegium serpens var. serpens (Hedw.) Schimp. in B.S. G.
Amblystegium varium (Hedw.) Lindb.
Atrichum oerstedianum (C. Mull.) Mitt.
Aulacomnium palustre (Hedw.) Schwaegre.
Brachythecium acuminatum (Hedw.) Aust.
Brachythecium digastrum C. Mull. & Kindb. in Mac. & Kindb.
Brachythecium reflexum (Starke in Web. & Mohr) Schimp. in B.S.G.
Brachythecium salebrosum (Web. & Mohr) Schimp. in B.S.G.
Brachythecium velutinum (Hedw.) B.S.G.
Brotherella recurvans (Michx.) Fleisch.
Bryhnia novae-angliae (Sull. & Lesq. in Sull.) Grout
Bryum pseudotriquetrum (Hedw.) Gaertn. et al.
Callicladium haldanianum (Grev.) Crum
Climacium dendroides (Hedw.) Web. & Mohr
Dicranum flagellare Hedw.
Dicranum fuscescens Turn.
Dicranum montanum Hedw.
Dicranum scoparium Hedw.
Dicranum viride (Sull. & Lesq. in Sull.) Lindb.
Eurhynchium pulchellum (Hedw.) Jenn.
Hylocomiastrum pyrenaicum (Spruce) Fleisch. in Broth.
Hylocomium splendens (Hedw.) Schimp. in B.S. G.
Hypnum curvifolium Hedw.
Hypnum fetile Sendtn.
Hypnum pallescens (Hedw.) P. Beauv.
Leskeella nervosa (Brid.) Loeske
Mnium ambiguum H, Muell.

Mnium marginatum (With.) Brid. ex P. Beauv.
Mnium spinulosum Bruch & Schimp. in B.S. G.
Mnium thomsonii Schimp.
Neckera pennata Hedw.
Oncophorus wahlenbergii Brid.
Orthotrichum sp.
Orthotrichum obtusifolium Brid.
Orthotrichum pumillum Sw.
Orthotrichum speciosum var. elegans (Schwaegr. ex Hook. & Grev.) Warnst.
Plagiomnium ciliare (C. Mull.) T. Kop.
Plagiomnium cuspidatum (Hedw.) T. Kop.
Plagiomnium ellipticum (Brid.) T. Kop.
Plagiothecium cavifolium (Brid.) Iwats.
Plagiothecium denticulatum (Hedw.) Schimp. in B.S. G.
Plagiothecium laetum Schimp. in B.S. G.
Platygyrium repens (Brid.) Schimp. in B.S. G.
Pleurozium schreberi (Brid.) Mitt.
Pohlia nutans (Hedw.) Lindb.
Polytrichum longisetum Brid.
Polytrichum juniperinum Hedw.
Polytrichum pallidisetum Funck
Ptilium crista-castrensis (Hedw.) De Not.
Pylaisiella polyantha (Hedw.) Grout
Pylaisiella selwynii (Kindb.) Crum et al.
Rhyzomnium appalachianum T. Kop.
Rhyzomnium magnifolium (Horik.) T. Kop.
Sanionia uncinata (Hedw.) Loeske
Sphagnum girgensohnii Russ.
Sphagnum recurvum var. tenue Klinggr.
Sphagnum russowii Warnst.
Sphagnum squarrosum Crome
Sphagnum teres (Schimp.) Angstr. in Hartm.
Sphagnum warnstorffii Russ.
Tetraxis pellucida Hedw.

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

Thuidium recognitum (Hedw.) Lindb.

Tortella humilis (Hedw.) Jenn.

Hepatics:

Bazzania trilobata (L.) S. Gray

Blepharostoma trichophyllum (L.) Dum.

Calypogeia integristipula Steph.

Cephalozia lunulifolia (Dum.) Dum.

Cephaloziella rubella var. *rubella* (Nees) Warnst.

Conocephalum conicum (L.) Lindb.

Frullania brittoniae Evans

Frullania eboracensis subsp. *eboracensis* Gott.

Jamesoniella autumnalis (D.C.) Steph.

Lepidozia reptans (L.) Dum.

Lophozia attenuata (Mart.) Dum.

Lophozia barbata (Schmid.) Dum.

Lophozia ventricosa (Dicks.) Dum.

Marchantia polymorpha L.

Nowellia curvifolia (Dicks.) Mitt.

Porella platyphylla (L.) Pfeiff. *Ptilidium pulcherrimum* (G. Web.) Hampe.

Radula obconica Sull.

**North Arm Area (Superior National Forest) St. Louis County, Minnesota.
Old Growth White Pine and Other Areas.**

Bryophyte Lists: March, 1996. Frank D. Bowers

Moss:

Anomodon rostratus (Hedw.) Schimp.
Atrichum angustatum (Brid.) Bruch. & Schimp. in B.S. G.
Aulacomnium palustre (Hedw.) Schwaegre.
Bartramia pomiformis Hedw.
Brachythecium acuminatum (Hedw.) Aust.
Brachythecium oedipodium (Mitt.) Jaeg.
Brachythecium reflexum (Starke in Web. & Mohr) Schimp. in B.S. G.
Brachythecium velutinum (Hedw.) B.S. G.
Brotherella recur-vans (Michx.) Fleisch.
Bryhnia graminicolor (Grid.) Grout
Bryoerythrophyllum recurirostre (Hedw.) Chen
Bryum argenteum Hedw.
Bryum capillare Hedw.
Bryum lisae var. cuspidatum (Bruch. ex B.S. G.) Marg.
Bryum pseudotriquetrum (Hedw.) Gaertn. et al.
Callicladium haldanianum (Grev.) Crum
Calliergon cordifolium (Hedw.) Kindb.
Calliergon stramineum (Brid.) Kindb.
Ceratodon purpureus (Hedw.) Brid.
Climacium dendroides (Hedw.) Web. & Mohr
Dichelyma capillaceum (With.) Myr.
Dicranum flagellare Hedw.
Dicranum fuscescens Turn.
Dicranum montanum Hedw.
Dicranum ontariense Peters.
Dicranum polysetum Sw.
Dicranum scoparium Hedw.

Dicranum viride (Sull. & Lesq. in Sull.) Lindb.
Encalypta ciliata Hedw.
Eurhynchium Mans (Hedw.) Sande Lac
Eurhynchium pulchellum (Hedw.) Jenn.
Grimmia sp.
Gymnostomum aeruginosum Sm.
Haplohymenium triste (Ces. in De Not.) Kindb.
Hedwigia ciliata (Hedw.) P. Beauv.
Hematocaulis vernicosus (Mitt.) Hedenas
Herzogiella turfacea (Lindb.) Iwats.
Herzogiella striatella (Brid.) Iwats.
Homalia trichamanoides (Hedw.) Schimp. in B.S.G.
Hylocomium splendens (Hedw.) Schimp. in B.S. G.
Hypnum curvifolium Hedw.
Hypnum pallescens (Hedw.) P. Beauv.
Leptodictyum riparium (Hedw.) Warnst.
Leucobryum glaucum (Hedw.) Angstr. in Fries
Mnium marginatum (With.) Brid. ex P. Beauv.
Mnium spinulosum Bruch & Schimp. in B.S. G.
Mnium thomsonii Schimp.
Neckera pennata Hedw.
Oncophorus wahlenbergii Brid.
Orthotrichum obtusifolium Brid.
Paraleucobryum longifolium (Hedw.) Loeske
Plagiomnium ciliare (C. Mull.) T. Kop.
Plagiomnium rostratum (Schrad.) T. Kop.
Plagiothecium denticulatum (Hedw.) Schimp. in B.S. G.
Plagiothecium laetum Schimp. in B.S. G.
Platygyrium repens (Brid.) Schimp. in B.S. G.
Pleurozium schreberi (Brid.) Mitt.
Pogonatum alpinum (Hedw.) Rohl.
Pohlia nutans (Hedw.) Lindb.
Polytrichum longisetum Brid.
Polytrichum juniperinum Hedw.

Polytrichum strictum Brid.
Ptilium crista-castrensis (Hedw.) De Not.
Pylaisiella polyantha (Hedw.) Grout
Rhizomnium appalachianum T. Kop.
Rhizomnium magnifolium (Horik.) T. Kop.
Rhytidiadelphus triquetrus (Hedw.) Warnst.
Saelania glaucescens (Fiedw.) Broth. in Bomanss. & Broth.
Sanionia uncinata (Hedw.) Loeske
Schistidium agassizii Sull. & Lesq. in Sull.
Schistidium apocarpum (Hedw.) Bruch & Schimp. in B.S.G.
Sphagnum capillifolium (Ehrh.) Hedw.
Sphagnum fimbriatum Wils. in Wils. & Hook.
Sphagnum fuscum (Schimp.) Klinggr.
Sphagnum girgensohnii Russ.
Sphagnum magellanicum Brid.
Sphagnum papillosum Lindb.
Sphagnum recurvum P. Beauv.
Sphagnum russowii Warnst.
Sphagnum squarrosum Crome
Sphagnum teres (Schimp.) Angstr. in Hartm.
Sphagnum warnstorffii Russ.
Stereocleus serrulatus (Hedw.) Robins.
Tetraphis pellucida Hedw.
Thuidium recognitum (Hedw.) Lindb.
Warnstorfia exannulata (Schimp. in B.S. G.) Loeske

Hepatics:

Bazzania trilobata (L.) S. Gray
Blepharostoma trichophyllum (L.) Dum.
Cephaloziella rubella var. rubella (Nees) Warnst.
Chiloscyphus profundus (Nees) Eng. & Schust.
Frullania sp.
Frullania bolanderi Aust.

Frullania brittoniae Evans

Frullania eboracensis subsp. *eboracensis* Gott.

Geocalyx graveolens (Schrad.) Nees

Jamesoniella autumnalis (D.C.) Steph.

Jungermannia lanceolata L.

Lepidozia reptans (L.) Dum.

Lophozia barbata (Schmid.) Dum.

Lophozia longidens (Lindb.) Mac.

Lophozia ventricosa (Dicks.) Dum.

Odontoschisma denudatum (Nees) Dum.

Plagiochila asplenoides subsp. *porelloides* (Torrey ex Nees) Schust.

Ptilidium pulcherrimum (G. Web.) Hampe.

**Crosby-Manitou State Park, DNR (State of Minnesota), Lake County, Minnesota
Old Growth White Cedar/Yellow Birch and Old Growth Northern Hardwoods.**

Bryophyte Lists: March, 1996. Frank D. Bowers

Moss:

Anomodon attenuatus (Hedw.) Hub.

Atrichum oerstedianum (C. Mull.) Mitt.

Brachythecium acuminatum (Hedw.) Aust.

Brachythecium oxycladon (Brid.) Jaeg.

Brachythecium reflexum (Starke in Web. & Mohr) Schimp. in B.S. G.

Brachythecium rivulare B.S. G.

Brachythecium velutinum (Hedw.) B.S. G.

Brotherella recurvans (Michx.) Fleisch.

Bryhnia graminicolor (Brid.) Grout

Callicladium haldanianum (Grey.) Crum

Campylium radicale (P. Beauv.) Grout

Ceratodon purpureus (Hedw.) Brid.

Climacium dendroides (Hedw.) Web. & Mohr

Dicranella heteromalla (Hedw.) Schimp.

Dicranum flagellare Hedw.

Dicranum montanum Hedw.

Dicranum polysetum Sw.

Dicranum scoparium Hedw.

Dicranum viride (Sull. & Lesq. in Sull.) Lindb.

Eurhynchium Mans (Hedw.) Sande Lac

Eurhynchium pulchellum (Hedw.) Jenn.

Fissidens cristatus Wils. ex Mitt.

Fissidens osmundioides Hedw.

Homalia trichomanoides (Hedw.) Schimp. in B.S.G.

Hylocomiastrum pyrenaicum (Spruce) Fleisch. in Broth.

Hylocomium splendens (Hedw.) Schimp. in B.S.G.

Hypnum lindbergii Mitt.

Hypnum pallescens (Hedw.) P. Beauv.
Leskeella nervosa (Brid.) Loeske
Leucodon brachypus var. *andrewsianus* Crum & Anderson
Mnium marginatum (With.) Brid. ex P. Beauv.
Mnium spinulosum Bruch & Schimp. in B.S.G.
Neckera pennata Hedw.
Oncophorus wahlenbergii Brid.
Orthotrichum obtusifolium Brid.
Orthotrichum stellatum Brid.
Paraleucobryum longifolium (Hedw.) Loeske
Plagiomnium cuspidatum (Hedw.) T. Kop.
Plagiothecium denticulatum (Hedw.) Schimp. in B.S.G.
Plagiothecium laetum Schimp. in B.S.G.
Platygyrium repens (Brid.) Schimp. in B.S.G.
Polytrichum longisetum Brid.
Ptilium crista-castrensis (Hedw.) De Not.
Pylaisiella polyantha (Hedw.) Grout
Pylaisiella selwynii (Kindb.) Crum et al.
Rhyzomnium appalachianum T. Kop.
Rhizomnium punctatum (Hedw.) T. Kop.
Rhytidiadelphus triquetrus (Hedw.) Warnst.
Sanionia uncinata (Hedw.) Loeske
Schistidium agassizii Sull. & Lesq. in Sull.
Schistidium apocarpum (Hedw.) Bruch & Schimp. in B.S.G.
Stereocleus serrulatus (Hedw.) Robins.
Tetraphis pellucida Hedw.
Thuidium recognitum (Hedw.) Lindb.

Hepatics:

Calypogeia muelleriana (Schiffn.) K. Mull.
Calypogeia neesiana (Mass. et Carest.) K. Mull.
Chiloscyphus profundus (Nees) Eng. & Schust.
Conocephalum conicum (L.) Lindb.

Frullania sp.

Frullania eboracensis subsp. *eboracensis* Gott.

Frullania tamarisci var. *asagrayana* (Mont.) Hatt.

Jamesoniella autumnalis (D.C.) Steph.

Lepidozia reptans (L.) Durn.

Lophozia barbata (Schmid.) Dum.

Porella platyphylloidea (Schwein.) Lindb.

Ptilidium pulcherrimum (G. Web.) Hampe.

Radula complanata (L.) Dum.

**Wanless Lake DNR area (State of Minnesota), Lake County, Minnesota.
White Cedar Swamp.**

Bryophyte Lists: March, 1966. Frank D. Bowers

Moss:

Brachythecium velutinum (Hedw.) B.S. G.
Bryum pseudotriquetrum (Hedw.) Gaertn. et al.
Callicladium haldanianum (Grev.) Crum
Calliergon cordifolium (Hedw.) Kindb.
Calliergon richardsonii (Mitt.) Kindb. in Warnst.
Campylium chrysophyllum (Brid.) J. Lange
Campylium stellatum (Hedw.) C. Jenns.
Climacium dendroides (Hedw.) Web. & Mohr
Dicranum flagellare Hedw.
Dicranum fuscescens Turn.
Dicranum montanum Hedw.
Dicranum ontariense Peters.
Dicranum polysetum Sw.
Dicranum scoparium Hedw.
Dicranum viride (Sull. & Lesq. in Sull.) Lindb.
Drepanocladus aduncus (Hedw.) Warnst.
Eurhynchium hians (Hedw.) Sande Lac.
Fissidens osmundioides Hedw.
Hematocaulis vernicosus (Mitt.) Hedenas
Hylocomiastrum pyrenaicum (Spruce) Fleisch. in Broth.
Hylocomium splendens (Hedw.) Schimp. in B.S.G.
Isopterygiopsis pulchella (Hedw.) Iwats.
Limprichtia revolvens (Sw.) Loeske
Mnium marginatum (With.) Brid. ex P. Beauv.
Mnium spinulosum Bruch & Schimp. in B.S.G.
Neckera pennata Hedw.
Oncophorus wahlenbergii Brid.

Plagiomnium rostratum (Schrad.) T. Kop.
Plagiothecium laetum Schimp. in B.S.G.
Platygyrium repens (Brid.) Schimp. in B.S.G.
Plerozium schreberi (Brid.) Mitt.
Pohlia nutans (Hedw.) Lindb.
Polytrichum juniperinum Hedw.
Ptilium cristacastrensis (Hedw.) De Not.
Rhizomnium appalachianum T. Kop.
Rhizomnium magnifolium (Horik.) T. Kop.
Rhytidiadelphus triquetrus (Hedw.) Warnst.
Sanionia uncinata (Hedw.) Loeske
Sphagnum fimbriatum Wils. in Wils. & Hook.
Sphagnum fuscum (Schimp.) Klinggr.
Sphagnum girgensohnii Russ.
Sphagnum papillosum Lindb.
Sphagnum russowii Warnst.
Sphagnum teres (Schimp.) Angstr. in Hartm.
Sphagnum warnstorffii Russ.
Sphagnum wulfianum Girg.
Tetraxis pellucida Hedw.
Thuidium recognitum (Hedw.) Lindb.
Warnstorfia fluitans var. fluitans (Hedw.) Lindb.

Hepatics:

Bazzania trilobata (L.) S. Gray
Blepharostoma trichophyllum (L.) Dum.
Calypogeia integristipula Steph.
Cephalozia connivens (Dicks) Lindb.
Frullania sp.
Frullania brittoniae Evans
Frullania eboracensis subsp. eboracensis Gott.
Frullania inflata Gott.
Frullania tamarisci var. asagrayana (Mont.) Hatt.

Jamesaniella autumnalis (D.C.) Steph.

Lepidozia reptans (L.) Dum.

Lophozia barbata (Schmid.) Dum.

Plagiochila asplenoides subsp. *porelloides* (Torrey ex Nees) Schust.

Ptilidium pulcherrimum (G. Web.) Hampe.

Radula obconica Sull.

Telaranea nematodes (Gott. ex Aust.) M. A. Howe

Kawishiwi Pines - SNA/cRNA State and Federal Land (Superior National Forest), Lake County, Minnesota.

Old Growth White Pine and other areas.

Bryophyte Lists: March, 1996. Frank D. Bowers

Moss:

Amblystegium serpens var. *serpens* (Hedw.) Schimp. in B.S.G.

Atrichum crispum (James) Sull.

Aulacomnium palustre (Hedw.) Schwaegre.

Bartramia pomiformis Hedw.

Brachythecium acuminatum (Hedw.) Aust.

Brachythecium oxycladon (Brid.) Jaeg.

Brachythecium reflexum (Starke in Web. & Mohr) Schimp. in B.S. G.

Brachythecium velutinum (Hedw.) B.S.G.

Bryum caespiticium Hedw.

Bryum capillare Hedw.

Bryum pseudotriquetrum (Hedw.) Gaertn. et al.

Callicladium haldanianum (Grev.) Crum

Calliergon cordifolium (Hedw.) Kindb.

Calliergon stramineum (Brid.) Kindb.

Campylium hispidulum (Brid.) Mitt.

Campylium polygamum (Schimp. in B.S. G.) C. Jens

Ceratodon purpureus (Hedw.) Brid.

Climacium dendroides (Hedw.) Web. & Mohr

Dicranella heteromalla (Hedw.) Schimp.

Dicranum flagellare Hedw.

Dicranum fiiscescens Turn.

Dicranum montanum Hedw.

Dicranum ontariense Peters.

Dicranum polysetum Sw.

Dicranum scoparium Hedw.

Drepanocladus aduncus var. *aduncus* (Hedw.) Warnst.

Eurhynchium hians (Hedw.) Sande Lac
Eurhynchium pulchellum (Hedw.) Jenn.
Hedwigia ciliata (Hedw.) P. Beauv.
Herzogiella turfacea (Lindb.) Iwats.
Herzogiella striatella (Brid.) Iwats.
Homalia trichomanoides (Hedw.) Schimp. in B.S.G.
Hylocomium splendens (Hedw.) Schimp. in B.S.G.
Hypnum fertile Sendtn.
Hypnum pallescens (Hedw.) P. Beauv.
Isopterygiopsis pulchella (Hedw.) Iwats.
Leptobryum pyriforme (Hedw.) Wils.
Leptodictyum riparium (Hedw.) Warnst.
Leucobryum glaucum (Hedw.) Angstr. in Fries
Mnium marginatum (With.) Brid. ex P. Beauv.
Mnium thomsonii Schimp.
Neckera pennata Hedw.
Oncophorus wahlenbergii Brid.
Orthotrichum obtusifolium Brid.
Orthotrichum speciosum var. elegans (Schwaegr. ex Hook. & Grev.) Warnst.
Paraleucobryum longifolium (Hedw.) Loeske
Plagiomnium ciliare (C. Mull.) T. Kop.
Plagiomnium cuspidatum (Hedw.) T. Kop.
Plagiothecium denticulatum (Hedw.) Schimp. in B.S.G.
Plagiothecium laetum Schimp. in B.S.G.
Platygyrium repens (Brid.) Schimp. in B.S.G.
Pleurozium schreberi (Grid.) Mitt.
Pogonatum alpinum (Hedw.) Rohl.
Pohlia nutans (Hedw.) Lindb.
Polytrichum commune Hedw.
Polytrichum juniperinum Hedw.
Polytrichum pallidisetum Funck
Polytrichum piliferum Hedw.
Ptilium crista-castrensis (Hedw.) De Not.
Pylaisiella polyantha (Hedw.) Grout

Pylaisiella selwynii (Kindb.) Crum et al.
Racomitrium heterostichum (Hedw.) Brid.
Rhytidiadelphus triquetrus (Hedw.) Warnst.
Sanionia uncinata (Hedw.) Loeske
Sphagnum capillifolium (Ehrh.) Hedw.
Sphagnum centrale C. Jens. in Arnell & C. Jens.
Sphagnum compactum DC in Lam. & DC
Sphagnum fimbriatum Wils. in Wils. & Hook.
Sphagnum girgensohnii Russ.
Sphagnum magellanicum Brid.
Sphagnum papillosum Lindb.
Sphagnum recurvum P. Beauv.
Sphagnum russowii Warnst.
Sphagnum squarrosum Crome
Sphagnum wulfianum Crigr.
Tetraphis pellucida Hedw.
Tetraplodon angustatus (Hedw.) Bruch & Schimp. in B.S.G.
Warnstorfia fluitans var. *fluitans* (Hedw.) Lindb.

Hepatics:

Anastrophyllum hellerianum (Nees) Schust.
Aneura pinguis (L.) Dum.
Barbilophozia barbata (Schmid. ex Schreb.) Loeske
Barbilophozia kunzeana (Hub.) Gams
Blepharostoma trichophyllum (L.) Dum.
Cephalozia catenulata (Hub.) Lindb.
Cephaloziella rubella var. *rubella* (Nees) Warnst.
Chiloscyphus profundus (Nees) Eng. & Schust.
Frullania sp.
Frullania brittoniae Evans
Frullania eboracensis subsp. *eboracensis* Gott.
Jamesoniella autumnalis (D.C.) Steph.
Lepidozia reptans (L.) Dum.

Lophozia barbata (Schmid.) Dum.

Marchantia polymorpha L.

Nowellia curvifolia (Dicks.) Mitt.

Ptilidium ciliare (L.) Hampe.

Ptilidium pulcherrimum (G. Web.) Hampe.

Radula complanata (L.) Dum.

Tettegouche State Park DNR (State of Minnesota). Lake County, Minnesota
Old Growth White Pine - White Cedar - Yellow Birch.

Bryophyte Lists: March, 1996. Frank D. Bowers

Moss:

Aulacomnium palustre (Hedw.) Schwaegre.

Bartramia pomiformis Hedw.

Brachythecium acuminatum (Hedw.) Aust.

Brachythecium reflexum (Starke & Web. in Mohr) Schimp. in B.S.G.

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

Brachythecium velutinum (Hedw.) B.S.G.

Brotherella recurvans (Michx.) Fleisch.

Bryhnia graminicolor (Brid.) Grout

Bryum pseudotriquetrum (Hedw.) Gaertn. et al.

Callicladium haldanianum (Grev.) Crum

Climacium dendroides (Hedw.) Web. & Mohr

Dicranum flagellare Hedw.

Dicranum fuscescens Turn.

Dicranum montanum Hedw.

Dicranum antariense Peters.

Dicranum polysetum Sw.

Dicranum scoparium Hedw.

Dicranum viride (Sull. & Lesq. in Sull.) Lindb.

Eurhynchium hians (Hedw.) Sande Lac

Hedwigia ciliata (Hedw.) P. Beauv.

Hylocomium splendens (Hedw.) Schimp. in B.S.G.

Hypnum fertile Sendtn.

Hypnum pallescens (Hedw.) P. Beauv.

Leptodictyum riparium (Hedw.) Warnst.

Leucobryum glaucum (Hedw.) Angstr. in Fries

Mnium marginatum (With.) Brid. ex P. Beauv.

Mnium thomsonii Schimp.

Neckera pennata Hedw.

Orthotrichum sordidum Sull. & Lesq. in Aust.

Paraleucobryum longifolium (Hedw.) Loeske
Plagiomnium rostratum (Schrad.) T. Kop.
Plagiothecium denticulatum (Hedw.) Schimp. in B.S.G.
Plagiothecium laetum Schimp. in B.S.G.
Platygyrium repens (Brid.) Schimp. in B.S.G.
Plerozium schreberi (Brid.) Mitt.
Pogonatum alpinum (Hedw.) Rohl.
Pohlia nutans (Hedw.) Lindb.
Polytrichum pallidisetum Funck
Ptilium cristacastrensis (Hedw.) De Not.
Pylaisiella polyantha (Hedw.) Grout
Pylaisiella selwynii (Kindb.) Crum et al.
Rhyzomnium appalachianum T. Kop.
Rhyzomnium magnifolium (Horik.) T. Kop.
Sanionia uncinata (Hedw.) Loeske
Schistidium apocarpum (Hedw.) Bruch & Schimp. in B.S.G.
Sphagnum fimbriatum Wils. in Wils. & Hook.
Sphagnum fuscum (Schimp.) Klinggr.
Sphagnum magellanicum Brid.
Sphagnum papillosum Lindb.
Sphagnum russowii Warnst.
Sphagnum squarrosum Crome
Sphagnum teres (Schimp.) Angstr. in Hartm.
Sphagnum warnstorffii Russ.
Sphagnum wulfianum Crirg.
Stereocleus serrulatus (Hedw.) Robins.
Tetraxis pellucida Hedw.
Thuidium recognitum (Hedw.) Lindb.
Tortella humilis (Hedw.) Jenn. Ulota crispa (Hedw.) Brid.

Hepatics:

Bazzania trilobata (L.) S. Gray
Cephalozia catenulata (Hub.) Lindb.

Cephalozia lunulifolia (Dum.) Dum.
Chiloscyphus polyanthus (L.) Corda
Frullania sp.
Frullania eboracensis subsp. eboracensis Gott.
Jamesoniella autumnalis (D.C.) Steph.
Lepidozia reptans (L.) Dum.
Porella platyphylloidea (Schwein.) Lindb.
Ptilidium pulcherrimum (G. Web.) Hampe.
Radula complanata (L.) Dum.
Riccia fluitans L.

Keely Creek RNA (Superior National Forest), Lake County, Minnesota.

Old Growth White Pine and Other Areas.

Bryophyte Lists: March, 1996. Frank D. Bowers

Moss:

Abietinella abietina (Hedw.) Fleisch.

Amblystegium serpens var. *serpens* (Hedw.) S chimp. in B.S.G.

Atrichum angustatum (Brid.) Bruch. & Schimp. in B.S. G.

Aulacomnium palustre (Hedw.) Schwaegre.

Bartramia pomiformis Hedw.

Brachythecium acuminatum (Hedw.) Aust.

Brachythecium reflexum (Starke in Web. & Mohr) Schimp. in B.S. G.

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

Brachythecium velutinum (Hedw.) B.S. G.

Brotherella recurvans (Michx.) Fleisch.

Bryum sp.

Bryum capillare Hedw.

Bryum lisae var. *cuspidatum* (Bruch. ex B.S. G.) Marg.

Bryum pseudotriquetrum (Hedw.) Gaertn. et al.

Callicladium haldanianum (Grev.) Crum

Campylium hispidulum (Brid.) Mitt.

Ceratodon purpureus (Hedw.) Brid.

Dicranella heteromalla (Hedw.) Schimp.

Dicranum flagellare Hedw.

Dicranum fuscescens Turn.

Dicranum ontariense Peters.

Dicranum polysetum Sw.

Dicranum scoparium Hedw.

Fissidens osmundioides Hedw.

Grimmia affinis Hoppe & Hornsch. ex Hornsch.

Hedwigia ciliata (Hedw.) P. Beauv.

Homalia trichomanoides (Hedw.) Schimp. in B.S.G.

Hylocomiastrum pyrenaicum (Spruce) Fleisch. in Broth.

Hypnum pallescens (Hedw.) P. Beauv.

Leskea polycarpa Hedw.
Leucobryum glaucum (Hedw.) Angstr. in Fries
Mnium spinulosum Bruch & Schimp. in B.S.G.
Orthotrichum sp.
Orthotrichum obtusifolium Brid.
Orthotrichum speciosum var. *elegans* (Schwaegr. ex Hook. & Grev.) Warnst.
Paraleucobryum longifolium (Hedw.) Loeske
Philonotis fontana (Hedw.) Brid.
Plagiomnium cuspidatum (Hedw.) T. Kop.
Plagiomnium ellipticum (Brid.) T. Kop.
Plagiothecium cavifolium (Brid.) Iwats.
Plagiothecium denticulatum (Hedw.) Schimp. in B.S.G.
Plagiothecium laetum Schimp. in B.S.G.
Platygyrium repens (Brid.) Schimp. in B.S.G.
Pleurozium schreberi (Brid.) Mitt.
Pohlia cruda (Hedw.) Lindb.
Pohlia nutans (Hedw.) Lindb.
Polytrichum commune Hedw.
Polytrichum longisetum Brid.
Polytrichum juniperinum Hedw.
Polytrichum pallidisetum Funck
Ptilium crista-castrensis (Hedw.) De Not.
Pylaisiella selwynii (Kindb.) Crum et al.
Racomitrium heterostichum (Hedw.) Brid.
Rhizomnium magnifolium (Horik.) T. Kop.
Rhytidiadelphus triquetrus (Hedw.) Warnst.
Sanionia uncinata (Hedw.) Loeske
Schistidium agassizii Sull. & Lesq. in Sull.
Schistidium apocarpum (Hedw.) Bruch & Schimp. in B.S.G.
Sphagnum sp. *Sphagnum capillifolium* (Ehrh.) Hedw.
Sphagnum centrale C. Jens. in Arnell & C. Jens.
Sphagnum compactum DC in Lam. & DC
Sphagnum fuscum (Schimp.) Klinggr.
Sphagnum magellanicum Brid.

Sphagnum papillosum Lindb.
Sphagnum recurvum var. *brevifolium* (Lindb. ex Braithw.) Warnst.
Sphagnum recurvum var. *tenue* Klinggr.
Sphagnum russowii Warnst.
Sphagnum wulfianum Girg.
Steerecleus serrulatus (Hedw.) Robins.
Thuidium recognitum (Hedw.) Lindb.
Tortella humilis (Hedw.) Jenn.
Warnstorfia fluitans var. *fluitans* (Hedw.) Lindb.

Hepatics:

Anastrophyllum hellerianum (Nees) Schust.
Blepharostoma trichophyllum (L.) Dum.
Cephalozia connivens (Dicks) Lindb.
Chiloscyphus minor (Nees) Eng. & Schust.
Chiloscyphus profundus (Nees) Eng. & Schust.
Jamesoniella autumnalis (D.C.) Steph.
Lophozia barbata (Schmid.) Dum.
Lophozia cf. *excisa* (Dicks.) Dum.
Phaeoceros laevis (L.) Prosk.
Ptilidium ciliare (L.) Hampe.
Ptilidium pulcherrimum (G. Web.) Hampe.
Radula complanata (L.) Dum.
Scaparua irrigua (Nees) Gott. et al.

Loon Lake (Superior National Forest) Cook County, Minnesota
Old Growth White Pine.

Bryophyte Lists: March, 1996. Frank D. Bowers

Moss:

Amblystegium serpens var. *serpens* (Hedw.) Schimp. in B.S. G.
Brachythecium reflexum (Starke in Web. & Mohr) Schimp. in B.S. G.
Brachythecium velutinum (Hedw.) B.S. G.
Brotherella recurvans (Michx.) Fleisch.
Callicladium haldanianum (Grev.) Crum
Dicranum condensatum Hedw.
Dicranum flagellare Hedw.
Dicranum fuscescens Turn.
Dicranum montanum Hedw.
Dicranum ontariense Peters.
Dicranum polysetum Sw.
Dicranum scoparium Hedw.
Dicranum viride (Sull. & Lesq. in Sull.) Lindb.
Eurhynchium hians (Hedw.) Sande Lac
Eurhynchium pulchellum (Hedw.) Jenn.
Fissidens osmundioides Hedw.
Hedwigia ciliata (Hedw.) P. Beauv.
Hypnum fertile Sendtn.
Hypnum pallescens (Hedw.) P. Beauv.
Mnium spinulosum Bruch & Schimp. in B.S.G.
Neckera pennata Hedw.
Oncophorus wahlenbergii Brid.
Orthotrichum obtusifolium Brid.
Orthotrichum speciosum var. *elegans* (Schwaegr. ex Hook. & Grev.) Warnst.
Paraleucobryum longifolium (Hedw.) Loeske
Plagiomnium cuspidatum (Hedw.) T. Kop.
Plagiomnium medium (Bruch & Schimp. in B.S.G.) T. Kop.
Plagiothecium denticulatum (Hedw.) Schimp. in B.S.G.

Platygyrium repens (Brid.) Schimp. in B.S.G.
Plerozium schreberi (Brid.) Mitt.
Pogonatum alpinum (Hedw.) Rohl.
Polytrichum commune Hedw.
Polytrichum juniperinum Hedw.
Polytrichum piliferum Hedw.
Ptilium crista-castrensis (Hedw.) De Not.
Pylaisiella polyantha (Hedw.) Grout
Rhizomnium magnifolium (Horik.) T. Kop.
Rhytidiadelphus triquetrus (Hedw.) Warnst.
Sanionia uncinata (Hedw.) Loeske
Schistidium agassizii Sull. & Lesq. in Sull.
Sphagnum fuscum (Schimp.) Klinggr.
Sphagnum russowii Warnst.
Sphagnum squarrosum Crome
Splachnum ampullaceum Hedw.
Tetraphis pellucida Hedw.
Thuidium recognitum (Hedw.) Lindb.
Tortella humilis (Hedw.) Jenn.
Trematodon ambigua (Hedw.) Hornsch.

Hepatica:

Cephalozia bicuspidata (L.) Dum.
Frullania sp.
Frullania eboracensis subsp. eboracensis Gott.
Jamesoniella autumnalis (D.C.) Steph.
Lepidozia reptans (L.) Dum.
Nowellia curvifolia (Dicks.) Mitt.
Ptilidium ciliare (L.) Hampe.
Ptilidium pulcherrimum (G. Web.) Hampe.

Judge Magney State Park DNR (State of Minnesota), Cook County, Minnesota

Old Growth White Cedar

Bryophyte Lists: March, 1996. Frank D. Bowers

Moss:

Amblystegium serpens var. *serpens* (Hedw.) Schimp. in B.S. G.

Atrichum oerstedianum (C. Mull.) Mitt.

Brachythecium acuminatum (Hedw.) Aust.

Brachythecium oxycladon (Grid.) Jaeg.

Brachythecium plumosum (Hedw.) Schimp. in B.S. G.

Brachythecium populeum (Hedw.) B.S. G.

Brachythecium reflexum (Starke in Web. & Mohr) Schimp. in B.S. G.

Brachythecium rutabulum (Hedw.) Schimp. in B.S. G.

Brachythecium velutinum (Hedw.) B.S. G.

Bryhnia graminicolor (Brid.) Grout

Callicladium haldanianum (Grey.) Crum

Campylium chrysophyllum (Brid.) J. Lange

Campylium hispidulum (Brid.) Mitt.

Campylium radicale (P. Beauv.) Grout

Dicranum flagellare Hedw.

Dicranum fragilifolium Lindb.

Dicranum montanum Hedw.

Dicranum polysetum Sw.

Dicranum scoparium Hedw.

Dicranum viride (Sull. & Lesq. in Sull.) Lindb.

Eurhynchium Mans (Hedw.) Sande Lac

Eurhynchium pulchellum (Hedw.) Jenn.

Fissidens cristatus Wils. ex Mitt.

Hylocomiastrum pyrenaicum (Spruce) Fleisch. in Broth.

Hylocomium splendens (Hedw.) Schimp. in B.S.G.

Hypnum lindbergii Mitt.

Hypnum pallescens (Hedw.) P. Beauv.

Leskeella nervosa (Grid.) Loeske

Leucodon brachypus var. *andrewsianus* Crum & Anderson

Lindbergia brachyptera (Mitt.) Kindb.
Mnium marginatum (With.) Brid. ex P. Beauv.
Mnium spinulosum Bruch & Schimp. in B.S.G.
Neckera pennata Hedw.
Oncophorus wahlenbergii Brid.
Orthotrichum obtusifolium Brid.
Orthotrichum speciosum var. elegans (Schwaegr. ex Hook. & Grev.) Warnst.
Orthotrichum stellatum Brid.
Plagiomnium medium (Bruch & Schimp. in B.S.G.) T. Kop.
Plagiomnium rostratum (Schrad.) T. Kop.
Platygyrium repens (Brid.) Schimp. in B.S.G.
Pleurozium schreberi (Brid.) Mitt.
Pogonatum alpinum (Hedw.) Rohl.
Polytrichum juniperinum Hedw.
Ptilium crista-castrensis (Hedw.) De Not.
Pylaisiella polyantha (Hedw.) Grout
Pylaisiella selwynii (Kindb.) Crum et al.
Rhyzomnium appalachianum T. Kop.
Rhytidiadelphus triquetrus (Hedw.) Warnst.
Sanionia uncinata (Hedw.) Loeske
Schistidium agassizii Sull. & Lesq. in Sull.
Taxiphyllum taxirameum (Mitt.) Fleisch.
Tetraphis pellucida Hedw.
Thuidium philibertii Limpr.
Thuidium recagnitum (Hedw.) Lindb.
Tortella humilis (Hedw.) Jenn.
Ulota crispa (Hedw.) Brid.

Hepatica:

Barbilophozia attenuata (Mart.) Loeske
Blepharostoma trichophyllum (L.) Dum.
Chiloscyphus profundus (Nees) Eng. & Schust.
Frullania eboracensis subsp. eboracensis Gott.

Frullania tamarisci var. *asagrayana* (Mont.) Hatt.

Jamesoniella autumnalis (D.C.) Steph.

Jungermannia lanceolata L.

Lepidozia reptans (L.) Dum.

Plagiochila asplenoides subsp. *porelloides* (Torrey ex Nees) Schust.

Porella platyphylloidea (Schwein.) Lindb.

Ptilidium pulcherrimum (G. Web.) Hampe.

Radula obconica Sull.

Tritomaria exsectiformis (Breidl.) Schiffn.

**Temperance River State Park DNR (State of Minnesota) Cook County, Minnesota.
Lake Superior Shoreline and Lower Temperance River Gorge.**

Bryophyte Lists: March, 1996. Frank D. Bowers

Moss:

Abietinella abietina (Hedw.) Fleisch.
Anomobryum filiforme (Dicks.) Solms in Rabenh.
Anomodon attenuatus (Hedw.) Hub.
Atrichum angustatum (Brid.) Bruch. & Schimp. in B.S. G.
Aulacomnium palustre (Hedw.) Schwaegre.
Barbula unguiculata Hedw.
Bartramia pomiformis Hedw.
Brachythecium plumosum (Hedw.) Schimp. in B.S. G.
Brachythecium rutabulum (Hedw.) Schimp. in B.S. G.
Bryoerythrophyllum recurvirostre (Hedw.) Chen
Bryum sp.
Bryum caespiticium Hedw.
Bryum capillare Hedw.
Bryum lisae var. *cuspidatum* (Brach. ex B.S. G.) Marg.
Bryum uliginosum (Brid.) Bruch & Schimp. in B.S. G.
Callicladium haldanianum (Grev.) Crum
Campylium chrysophyllum (Brid.) J. Lange
Ceratodon purpureus (Hedw.) Brid.
Cyrto-hypnum minutulum (Hedw.) Buck & Crum
Dichodontium pellucidum (Hedw.) Schimp.
Dicranum polysetum Sw.
Didymodon rigidulus Hedw.
Didymodon tophaceus (Brid.) Lisa
Distichium capillaceum (Hedw.) Bruch & ScIfimp. in B.S.G.
Encalypta ciliata Hedw.
Eucladium verticillatum (Brid.) Bruch. & Schimp. in B.S.G.
Eurhynchium Mans (Hedw.) Sande Lac
Fissidens cristatus Wils. ex Mitt.
Gymnostomum aeruginosum Sm.

Hedwigia ciliata (Hedw.) P. Beauv.
Hygroamblystegium tenax (Hedw.) Jenn.
Hygroamblystegium tenax var. spinifolium (Schimp.) Jenn.
Homalia trichomanoides (Hedw.) Schimp. in B.S.G.
Hylocomium splendens (Hedw.) Schimp. in B.S.G.
Mnium hornum Hedw. Mnium spinulosum Bruch & Schimp. in B.S.G.
Mnium thomsonii Schimp.
Myurella julacea (Schwaegr.) Schimp. in B.S.G.
Paraleucobryum longifolium (Hedw.) Loeske
Philonotis fontana (Hedw.) Brid.
Plagiomnium cuspidatum (Hedw.) T. Kop.
Pleurozium schreberi (Brid.) Mitt.
Pogonatum alpinum (Hedw.) Rohl.
Pohlia cruda (Hedw.) Lindb.
Polytrichum commune Hedw.
Polytrichum piliferum Hedw.
Rhabdoweisia crispata (With.) Lindb.
Sanionia uncinata (Hedw.) Loeske
Schistidium agassizii Sull. & Lesq. in Sull.
Schistidium apocarpum (Hedw.) Bruch & Schimp. in B.S.G.
Thuidium delicatulum (Hedw.) Schimp. in B.S.G.
Tortella fragilis (Hook. & Wils. in Drumm.) Limpr.
Tortella humilis (Hedw.) Jenn.
Tortella tortuosa (Hedw.) Limpr.
Tortula ruralis (Hedw.) Gaertn. et al.

Hepatics:

Blepharostoma trichophyllum (L.) Dum.
Frullania eboracensis subsp. eboracensis Gott.
Jungermannia lanceolata L.
Lejeunea cavifolia (Ehrh.) Lindb.
Lophozia barbata (Schmid.) Dum.
Plagiochila asplenoides subsp. porelloides (Torrey ex Nees) Schust.

Preissa quadrata (Scop.) Nees

Radula complanata (L.) Dum.

Solenostoma pumilum subsp. *polaris* (Berggr.) Schust.