Field Report for Scranton NW, Scranton SW

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INTRODUCTION

The two 1:1:100,000 work areas (Scranton NW, SW) are located in the northeast corner of Pennsylvania. The Pocono Mountains are located in the southeast quarter of the study area. Major drainages are the Susquehanna, Delaware, Lehigh, Lackawanna and Lackawaxen rivers. According to Bailey's (1978) ecoregion system, the work areas are found within the Laurentian Mixed Forest Province and Northern Hardwoods Forest. Precipitation is moderate (24 to 45 inches) with maximum precipitation coming in summer. The winters are of moderately long duration with snow cover usually all winter while the average annual temperatures range from 35° to 50°F (2°-10°C).

The photography for the four work areas included partial coverage Black-and White panchromatic, 1:80,000 scale photos dated October 12 and 29, 1976; November 2, 1976; and April 4, 1977. The photos had been interpreted during the summer of 1981. Color Infra Red photography for most of the remaining work areas was received recently allowing only brief review for checksites prior to the field trip. The CIR was flown April 21 and May 4 and 8, 1981, at a scale of 1:58,000.

There is some overlap in the two sets of photos permitting comparisons and checks. The CIR photography, besides being larger scale, offers better contrast, better resolution and evergreen vegetation is easily distinguished. Larch (*Larix laricina*) is easily distinguished on Black-and-White imagery but not on CIR.

The timing of photography is important. The Black-and-White photography taken in the fall shows the full development of non-persistent emergents and, usually, aquatic beds. The October 12, 1976, B&W photography (Scranton flight lines 7 and 8) was flown prior to leaf fall making it difficult to distinguish evergreen from deciduous species. The fall 1976 B&W imagery has better resolution than the spring 1977 B&W possibly due to moisture in the air. CIR resolution is generally very good because of its haze penetrating capabilities (Avery 1977). The advantage of spring photography is the presentation of high water conditions.

Classification follows the Mapping Conventions of December 1981 except for the persistent emergent subclass. By Region 5 convention the "1" subclass refers only to *Phragmites australis*, while the old "5" subclass for persistent, narrow-leaved emergents is still being used. The small "a" (acid modifier) was used to indicate bogs.

The immediate objectives of this field trip were: to distinguish narrow-leaved evergreen (PFO4, PSS4) from broad-leaved deciduous (PFO1, PSS1) forested wetland and broad-leaved evergreen (PSS3) from broad-leaved deciduous (PSS1) scrub/shrub; to separate upland evergreen from wetland evergreen; to determine water regimes, especially the saturated "B" from the seasonally-flooded, saturated "E"; and to determine the extent of non-persistent emergents and aquatic beds. The last and possibly most important reason was to document the changes attributable to man's activities. Peat mining and resort development concentrated in the Pocono Mountains has resulted in alteration and loss of wetlands. Bogs have been destroyed for peat and many wetlands flooded to create lakes for resort communities.

Bailey, Robert F. 1978. Description of the ecoregions of the United States. USDA Forest Service. Intermtn. Reg., Ogden, Utah. 77 pp.

Avery, Thomas E. 1977. Interpretation of aerial photographs. 3rd ed. Burgess Publ. Co., Minneapolis, MN. 392 pp.

In-field and Photo Observations

SCRANTON SW

Pleasant View Summit

SITE 1--PSS1E--This site is dominated by Vaccinium corymbosum and Acer rubrum less than 6 m. There is a diversity of plant species here, woody and non-woody. Sphagnum squarosum (and others?) are very abundant. The soil is a Chippewa silt loam; the subgroup is Typic Fragiaquept.

SITE 2--PFO4A--This had been called a PFO4E polygon but is a temporarily flooded linear following Bear Creek. The dominant species is hemlock (Tsuga canadensis). The USGS quad indicates that this area is wet. The dominant soil is Wellsboro very stony silt loam, 3 to 8% slopes; the subgroup is Typic Fragiochrepts.

SITE 5--L2EM2Fh--This site is a linear dominated by Sparganium americanum, Nymphaea odorata forma rubra, Eleocharis sp. and Juncus sp. The lake, Meadow Run, is a vacation community.

SITE 6--PFO1C--The dominant overstory is Acer rubrum and the dominant understory is Rhododendron maximum. The soils are Norwich and Chippewa extremely stony silt loams, 0 to 8% slopes. Both are Typic Fragiaquepts.

Avoca

SITE 3--PSS1Eb--Viburnum dentatum, Acer rubrum and Calamagrostis canadensis appear to dominate a mixed shrub community that is very wet. Beaver have been active here and some areas might have an "F" or "Z" water regime especially near the stream course. Soils are Muck and Chippewa very stony silt loam, 0 to 8% slopes.

SITE 4--PAB4/3H--The vegetation in the water is obvious on the photo but the late date (10/29/76) makes it difficult to distinguish PEM from PAB.

(continued)

The pond appears to be dominated by Utricularia sp. with patches of Nymphaea odorata and a fringe of Typha latifolia and Pontedaria cordata.

Thornhurst

SITE 7--PFO1/SS1Aa--Very dark signature was interpreted as PFO4 but is probably due to the thick understory. The birches (Betula populifolia) are about 20 to 25 feet tall. The substrate is organic but is dry at the surface. There may possibly be some artificial drainage.

SITE 8--PEM5E--The site is dominated by Calamagrostis canadensis and Carex rostrata with a variety of other species. There is a small roadway across the wetland that probably ponds water behind it. The soil is a Holly silt loam, ponded, Typic Fluvaquent.

SITE 9--PEM5E--This area has been partially filled. The dominant is Calamagrostis canadensis with Spirea tomentosa and Scirpus cyperinus as subdominants. There are scattered Black Spruce (Picea mariana) along the edge. The soil is Mucky Peat, shallow.

SITE 10--PF14Bax--is being actively mined for peat with ditches to lower water levels to allow the peat to dry out. Where vegetation is still growing, Picea mariana and Larix laricina are dominant.

Blakeslee

SITE 11--PFO4/2Ba--The site is dominated by open Picea mariana and Larix laricina with a well-developed shrub understory. Sphagnum spp. cover the substrate. The soil is Mucky Peat, deep.

SITE 13--PFO5/SS3F--Dead trees and Chamaedaphne calyculata dominate. Interstate 80 apparently caused the ponding of water here killing the trees. The soils are Chippewa and Norwich extremely stony soils, 0 to 8% slopes, Typic Fragiaquepts.

SITE 14--R2EM2/AB3H--This river drains a very large PSS1/3E. It is shallow and contains an abundance of Potamogeton sp. and Sparganium americanum.

Pocono Pines

SITE 12--PEM5A--A gravel pit that is dominated by 2 sedges and Vaccinium Oxycoccos.

--PFO4B--Pitch Pine (Pinus rigida) and White Pine (P. strobus) dominate with a very thick shrub understory.

--PFO4B--Picea mariana dominates with sparse shrubs and a carpet of Sphagnum spp., Carex trisperma and Cornus canadensis.

The soils are Chippewa and Norwich extremely stony soils, 0 to 8% slopes, Typic Fragiaquepts.

Moscow

SITE 15--PFO1E--The site is dominated by Acer rubrum with an understory of Rhododendron maximum. The R. maximum causes a dark signature requiring care not to classify the site PFO1/4. The soils are Norwich and Chippewa extremely stony silt loam, 0 to 8% slopes, Typic Fragiaquepts.

Tobyhanna

SITE 16--PSS1/EM5E--The site is dominated by the 2 Spireas and by sedges. It has a very light signature suggesting a PEM. The soil is Mucky peat, shallow.

SITE 17--PSS1/EM5F--There are dead Larch here but not of sufficient area cover to classify as PFO5. Drainage appears to be blocked by the road. Typha latifolia and Spirea tomentosa are the dominat species. The soil is Mucky Peat, deep.

Buck Hill Falls

SITE 18--U/PFO1C--The upland area is dominated by oaks and Rhododendron maximum and Kalmia latifolia. Acer rubrum dominates the PFO1C with some Nyssa sylvatica, Rhododendron maximum and Tsuga canadensis as subdominants. The soils are Chippewa and Norwich extremely stony soils, 0 to 8% slopes, Typic Fragiaquepts.

SITE 19--PFO1E--The site is dominated by Acer rubrum (80-100% cover) with a well developed shrub understory. The soil is Mucky Peat, deep.

SITE 20--PFO1E--Acer rubrum dominates the overstory with Rhodendron maximum dominant in the understory. Sphagnum spp. cover the substrate. The soil is Mucky Peat, deep.

SITE 21--PFO1/4Ba--Acer rubrum, Picea mariana and Rhododendron maximum dominate this site. It was felt that this site had better developed Sphagnum mounds and had more plant species generally associated with bogs than the last. The soil is Mucky Peat, deep.

SITE 22--POWHh--This is a man-made lake for the vacation homes surrounding it. At the time of the 1976 B&W imagery, it was PSS and ditched.
--PSS3/EM5E--This is an island in the pond dominated by Chamaedaphne calyculata, other shrubs and sedges. The soil is/was Mucky peat. It is possible that the dredging and damming were done illegally.

SITE 23--PFO1E--Acer rubrum dominates the overstory and Rhododendron maximum the understory. This site could be mistaken for PFO4 on the B&W and CIR imagery. The soils are Chippewa and Norwich extremely stony soils, 0 to 8% slopes, Typic Fragiaquepts.

SITE 24--PSS1/EM5E--This site has a great variety of species with no one clear dominant. Dulichium arundinaceum, Calamagrostis canadensis and the 2 Spireas appear to be the most common. The NW end of the wetland appears to be a PFO5Fb. Soils are shallow Peat and Norwich very stony silt loam, 0 to 8% slopes, Typic Fragiaquepts.

SITE 25--PFO1C--Water table was well below the surface, but the surface layers showed gleying. Dominant species are Acer rubrum and Rhododendron maximum. The soils are classified as Norwich very stony silt loam, Typic Fragiaquepts.

SITE 26--PEM5F--Decodon verticillatus, Carex sp. and Spirea latifolia are the dominants. The soils are not classified.

SITE 27--PFO2/SS1Ba--Excellent example of a bog. Dominant tree is Larix laricina with many shrub species. Complete Sphagnum mat, quaking in places. The soil is classified as Shallow Peat but is probably deep around the pond.

SITE 28--PSS1Ba--Rhododendron canadense and Sphagnum spp. dominate with Symplocarpus foetidus and Vaccinium (vacillans?) subdominant. Though it is classified as a bog, it probably is shallow. The soil is classified as Norwich and Chippewa extremely stony silt loams, 0 to 8% slopes.

Scranton NW

Dalton

SITE 29--PSS1/EM5A--This site is the flood plain of a small stream. The stream was about 3 feet below bankfull at the time of the field check. There was no clear dominant shrub or emergent, but Salix sp., Ulmus americanus were common as shrubs while grasses and sedges dominated the open ground. The soil is Holly silt loam, Typic Fluvaquents.

SITE 30--PSS1E--Acer rubrum less than 20 ft. tall dominates. There are well-developed Carex stricta tussocks with Vaccinium corymbosum as well as Acer growing on them. The soil is Medisaprist or Medihemist.

--POWZh--This is ringed by emergents in a zone too narrow to identify on the photo. Phalaris arundinacea and Juncus effusus dominate. There is Spirodela polyrhiza growing on the water.

SITE 31--PFO1A--Acer rubrum dominates at the upper end of the POWZh. A small band of PEM5E is included in this type. The soils are Norwich and Chippewa channery silt loam, 0 to 3% slopes, Typic Fragiaquepts.

SITE 32--PSS1Ba--Acer rubrum (<20 ft.) dominates with Chamaedaphne calyculata and numerous other woody and herbaceous species present. Floating bog mat encircles pond.

--PEM5B--Seep on hillside dominated by Juncus effusus, grazed meadow.

The soils are Norwich and Chippewa channery silt loams, 0 to 3% slopes, Typic Fragiaquepts.

SITE 33--PF01E--Acer rubrum is the dominant overstory tree (80-100% cover) with an open scrub/shrub understory.

--PSS1E--A. rubrum and Salix sp. are codominant with a variety of herbaceous vegetation present.

The soils are Norwich and Chippewa extremely stony silt loam, 0 to 8% slopes, Typic Fragiaquepts.

SITE 34--PF05/SS5Zb--Dead shrubs and trees dominate with some living Salix nigra. Wolffia sp. and Spirodela polyrhiza are common on the water surface.

--POWZb--Beaver have changed the water regime from "E" to "Z". The 1976 photo indicates a PEM5.

The soils are Norwich and Chippewa channery silt loams, 0 to 3% slopes, Typic Fragiaquepts; Medisaprists and Medihemists.

Harford

SITE 35--PF01/5Fb--The dominant tree is Acer rubrum with an understory of Vaccinium corymbosum and Typha latifolia in a narrow band around the POW.

--PEM5Fb--Juncus effusus and Typha latifolia dominate with other herbaceous vegetation and some woody species. Beaver are active here. The soils are Norwich and Chippewa, 0 to 3% slopes, Typic Fragiaquepts; Peat.

Thompson

SITE 36--PEM5Eb--The dominant is Calamagrostis canadensis with other common emergents Juncus effusus, J. brevicaudatus and Eleocharis Smallii. Beaver are active here. The soils are Morris channery silt loam, 0 to 3% slopes, Aeric Fragiaquepts and Norwich and Chippewa soils, 0 to 3% slopes, Typic Fragiaquepts.

SITE 37--PF01Eb--Open canopy with Acer rubrum dominant. Shrubs and Calamagrostis canadensis comprise the understory.

--PEM5Eb--Calamagrostis canadensis dominates with Leersia oryzoides in wetter spots.

--PEM2Eb--Leersia oryzoides is the dominant with Sagittaria latifolia, Juncus effusus and other herbaceous vegetation.

The whole wetland complex is an old beaver meadow with only a small area of open water at the southern end.

The soils are classed as Morris flaggy silt loam, 3 to 8% slopes, moderately eroded, Aeric Fragiaquepts.

SITE 38--PEM2/5Fb--Sparganium americanum is the dominant with Calamagrostis canadensis and several Carices as co-dominants. There was standing water at the time of the field check but the substrate is probably exposed late in the growing season.

--PSS1/3Fb--Myrica gale, Acer rubrum and Chamaedaphne calyculata are the dominants. This is an island in the middle of the lake.

--PAB4/OWZb--Utricularia vulgaris and Brasenia Schreberi are the dominants. Beaver have impounded the area creating the lake. The soil is not classified but is mucky (Medisaprist?).

Carbondale

SITE 39--PEM5Eh--Scirpus cyperinus and sedges comprise most of the open stand. Mine waste surrounds the PEM and leachate enters the wetland. What has been called open water on the quad and soil survey is apparently slag.

Waymart

SITE 40--PFO5/EM5Eb--Dead trees and Leersia oryzoides dominate a site with more than 25 plant species found. The site is an old Beaver meadow. The soil survey is not available but is Muck.

SITE 41--PSS1Eb--Salix sp. and Viburnum recognitum dominate. Beaver have blocked the culvert under the road. Part of site is PSS1Fb and should cause some die-off if the dam remains.

--PEM5E--This is a grazed meadow with a creek running through it. Juncus effusus and Eupatorium perfoliatum dominate.

--PEM5/2B--Acorus calamus is growing on the hillside indicating a seep.

No soils information is available.

SITE 42--PFO1E--Acer rubrum dominates in the overstory. Vaccinium corymbosum, Calamagrostis canadensis and Carex lacustris dominate the understory. The northern end of the swamp grades into PFO1/4E with A. rubrum and Tsuga canadensis codominant. Mounding is well developed in this wetland and the substrate is very wet.

Soils information is unavailable but C. lacustris is indicative of calcareous or circumneutral swamps (Fernald 1950).*

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*Fernald, M. L. 1950. Gray's Manual of Botany. 8th ed. D. Van Nostrand Co., N.Y. 1632 pp.

SITE 43--PEM2/5E--Leersia oryzoides dominates with several species of sedge, smartweed and a variety of other species. The site is mapped as open water on the USGS 7½ minute map and on the soil survey. There may have been a dam at one time holding back water but probably flooding is for only a short time now. No soils information is available but the soil is mucky and stony.

SITE 44--PSS1/3B--Of primary interest was the vegetation growing on the islands. Chamaedaphne calyculata and Myrica gale appear to dominate. Many species occur along the southwest edge of the pond, and in the cove there is a PAB3Zh. A soil survey was not available for this site (Wayne Co.).

Aldenville

SITE 45--PFO1E--Acer rubrum dominates with well-developed mound-and-pool microtopography. There is a thick shrub understory dominated by Rhododendron maximum. No soils information is available but would probably be classified as Peat or Muck.

Honesdale

SITE 46--PSS3/4Ba--Chamaedaphne calyculata, Picea mariana and Pinus strobus are the dominants. There is also a very large population pf Sarracenia purpurea. This is an excellent bog with a floating mat and many species typical of bogs.

--PFO4Ba--Picea mariana and Pinus strobus dominate with Rhododendron maximum as the dominant understory species. No soils information is available but it would be classified as Peat.

SITE 47--PFO1/4E--Acer rubrum and Tsuga canadensis are codominant. Rhododendron maximum is dominant in the understory. Mound-and-pool microtopography is well developed.

--PFO4B--Picea mariana is dominant.

Soils are probably Muck and/or Peat.

SUMMARY

During this field trip we were able to check wetlands fairly representative of the types found in The Scranton work areas. Both common and unusual signatures found on the Black-and-White and Color Infra Red imageries were investigated. The northern and eastern edges of the work areas were not checked, however.

We found that Beaver are very active throughout the region. Man is also active, especially in The Pocono Mtns. where developers are creating lakes from wetlands for resort communities and peat-mining bogs. We also found many hillside seeps with Acorus calamus that might have been easily overlooked when typing.

As expected, USGS 7½ minute quads often did not indicate wetlands when they did exist. They did occasionally indicate wetlands where none existed, usually hemlock stands in drainages.

Most problems for Scranton were resolved. It had been difficult to separate evergreen from deciduous signatures. Part of the problem stemmed from the photography but Rhododendron maximum beneath a deciduous overstory reflected a signature similar to a needle-leaved evergreen signature.

There had been a problem deciding when to apply the "B" water regime. It should be much easier now. There had also been a question on some scrub/shrub islands. Most have Chamaedaphne calyculata as a dominant but the water regimes are variable (B,E, and F).

Typing nonpersistent emergents and aquatic beds will probably remain difficult.

Soils were classified primarily as Typic Fragiaquepts, Mucks or Peats.

APPENDIX I

Black-and-White Panchromatic imagery

Flight line	Date	Quality
3,4	11/2/76	poor resolution poor contrast
5,6	10/29/76	fair resolution fair contrast
7,8	10/12/76	fair resolution poor contrast leaves-on, adds difficulty

Color Infra-Red imagery

1,2,3	4/21/81 5/8/81	excellent excellent
4	5/8/81	excellent

APPENDIX II

Field check sites for Scranton NW, SW with partial plant community lists.

SITE 1---PSS1E--Vaccinium corymbosum, Acer rubrum, Pyrus floribunda, Chamaedaphne calyculata, Carex folliculata.

SITE 2---PFO4A--Tsuga canadensis, Spirea tomentosa, Carex folliculata, C. intumescens, Aster acuminatus.

SITE 3---PSS1Eb--Viburnum recognitum, Acer rubrum, Calamagrostis canadensis, Lysimachia terrestris.

SITE 4---PAB4/3H--Utricularia sp., Pontedaria cordata, Nymphaea odorata, Typha latifolia.

SITE 5---L2EM2Fh--Sparganium americanum, Nymphaea odorata forma rubra, Carex rostrata, C. Howei.

SITE 6---PFO1C--Acer rubrum, Rhododendron maximum, Osmunda cinnamomea, Betula lutea, Picea rubens.

SITE 7---PFO1/SS1Aa--Betula populifolia, Vaccinium corymbosum, Spirea latifolia, Chamaedaphne calyculata.

SITE 8---PEM5E--Calamagrostis canadensis, Carex rostrata, Spirea tomentosa, S. latifolia, Glyceria obtusa.

SITE 9---PEM5E--Calamagrostis canadensis, Spirea tomentosa, Scirpus cyperinus.

SITE 10--PF14Bax--Bare peat.

--PFO4/2Ba--Picea mariana, Larix laricina, Chamaedaphne calyculata, Carex lasiocarpa.

--PFO2Ba--Larix laricina, Chamaedaphne calyculata, Carex lasiocarpa.

SITE 11--PFO4/2Ba--Picea mariana, Larix laricina, Vaccinium corymbosum, Carex trisperma, Sphagnum (squarosum?).

SITE 12--PEM5Ax--Rhynchospora alba, Scirpus atrovirens, Vaccinium Oxycoccos.

--PFO4B--Pinus rigida, P. strobus, Rhododendron canadense, Vaccinium corymbosum, Viburnum sp., Carex trisperma.

--PFO4B--Picea mariana, Carex trisperma, Sphagnum spp., Cornus canadensis.

SITE 13--PFO5/SS3F--dead trees, Chamaedaphne calyculata, Calla palustris, Lemna sp., Scirpus cyperinus.

SITE 14--P2EM2/AB3H--Potamogeton sp., Sparganium americanum, Pontedaria cordata, Sagittaria latifolia, Calamagrostis canadensis.

SITE 15--PFO1E--Acer rubrum, Tsuga canadensis, Carex lurida, Carex sp., Sphagnum spp., Scutellaria sp., Sium suave.

SITE 16--PSS1/EM5E--Spirea tomentosa, S. latifolia, Carex rostrata, Juncus effusus, Glyceria borealis, Carex sp., Scirpus cyperinus.

SITE 17--PSS1/EM5F--Typha latifolia, Spirea tomentosa, Salix sp., Larix laricina (dead), Phragmites australis, Larix laricina, Acer rubrum.

SITE 18--PFO1C--Acer rubrum, Nyssa sylvatica, Rhododendron maximum, Tsuga canadensis, Osmunda cinnamomea, Sphagnum sp., Aster acuminatus.

--PFO1J--Acer rubrum, Dryopteris novaboracensis, Osmunda Claytoniana, O. cinnamomea, Quercus rubra, Q. alba, Sphagnum sp.

SITE 19-PFO1E--Acer rubrum, Ilex laevigata, Rhododendron viscosum, Osmunda cinnamomea, Carex stricta, Carex sp., Sphagnum sp.

SITE 20--PFO1E--Acer rubrum, Rhododendron maximum, Sphagnum spp., Osmunda cinnamomea, Lycopus sp., Carex folliculata, C. trisperma.

SITE 21--PFO1/4Ba--Acer rubrum, Picea mariana, Nyssa sylvatica, Rhododendron maximum, Nemopanthus mucronata.
SITE 22--PSS3/EM5Eh--Chamaedaphne calyculata, Vaccinium corymbosum, Spirea latifolia, Carex scoparia.
SITE 23--PFO1E--Acer rubrum, Rhododendron maximum, Sphagnum spp., Carex sp., Sparganium americanum.
SITE 24--PSS1/EM5E--Dulichium arundinaceum, Spirea tomentosa, S. latifolia, Calamagrostis canadensis.
SITE 25--PFO1C--Acer rubrum, Rhododendron maximum, Tsuga canadensis, Sambucus canadensis, Alnus rugosa.
SITE 26--PEM5F--Decodon verticillatus, Carex sp., Spirea latifolia.
SITE 27--PFO2/SS1Ba--Larix laricina, Vaccinium corymbosum, Rhododendron viscosum, Chamaedaphne calyculata, Kalmia polifolia.
SITE 28--PSS1Ba--Rhododendron canadense, Sphagnum spp., Vaccinium (vaccillans?) Carex folliculata, Symplocarpus foetidus.
SITE 29--PSS1/EM5A--Salix sp., Ulmus americanus, Solidago sp., Rumex sp., Alnus rugosa, Carex lurida, Nasturtium officinale.
SITE 30--PSS1E--Acer rubrum, Juncus effusus, Phalaris arundinacea, Vaccinium corymbosum, Carex stricta.
SITE 31--PFO1A--Acer rubrum, Fraxinus sp., Impatiens capensis, Rubus sp., Juncus effusus, Typha latifolia.
SITE 32--PSS1Ba--Acer rubrum, Chamaedaphne calyculata, Dryopteris Thelypteris, Onoclea sensibilis.
SITE 33--PFO1E--Acer rubrum, Vaccinium corymbosum, Carex sp., Osmunda cinnamomea, Rhus radicans.
--PSS1E--Acer rubrum, Salix sp., Typha latifolia, Eleocharis sp., Verbena hastata, Impatiens capensis, Echinocloa crusgalli.
SITE 34--PFO5/SS5Zb--dead shrubs and trees, Salix nigra, Impatiens capensis, Wolffia sp., Spirodela polyrhiza, Polygonum sp.
SITE 35--PFO1/4Fb--Acer rubrum (alive and dead), Vaccinium corymbosum, Typha latifolia, Spirea latifolia.
--PEM5Fb--Juncus effusus, Typha latifolia, Salix sp., Spirea tomentosa, S. latifolia, Eleocharis sp., Carex vulpinoidea.
SITE 36--PEM5Eb--Calamagrostis canadensis, Juncus effusus, J. brevicaudatus, Eleocharis Smallii, Veronica scutellata.
SITE 37--PFO1Eb--Acer rubrum, Alnus rugosa, Viburnum recognitum, Spirea latifolia, Calamagrostis canadensis.
--PEM5Eb--Calamagrostis canadensis, Leersia oryzoides, Impatiens capensis, Lycopus sp., Carex stricta.
--PEM2Eb--Scirpus cyperinus, Agrostis scabra, Scirpus validus.
SITE 38--PEM2/5Fb--Sparganium americanum, Calamagrostis canadensis, Carex stricta, C. lurida, C. vulpinoidea, C. scoparia.
--PSS1/3Fb--Myrica gale, Acer rubrum, Chamaedaphne calyculata, Spirea latifolia.
--PAB4/OWZb--Utricularia vulgaris, Brasenia Schreberi.
SITE 39--PEM5Eh--Scirpus cyperinus, Carex lurida, Scirpus atrovirens, Juncus effusus, Carex crinita, Spirea latifolia.
SITE 40--PFO5/EM5Eb--Leersia oryzoides, dead trees, Calamagrostis canadensis, Impatiens capensis, Carex lurida, Dryopteris Thelypteris.

SITE 41--PSS1Eb--Salix sp., Viburnum recognitum, Clematis virginiana, Phalaris arundinacea, Eupatorium maculatum.
--PEM5E--Juncus effusus, Eupatorium perfoliatum, Spirea tomentosa, Carex lurida, Typha latifolia, Ranunculus sp.

SITE 42--PFO1E--Acer rubrum, Fraxinus sp., Tsuga canadensis, Vaccinium corymbosum, Lindera benzoin.

SITE 43--PEM2/5E--Leersia oryzoides, Juncus effusus, Carex scoparia, C. tribuloides, Scirpus cyperinus.

SITE 44--PSS1/3B--Chamaedaphne calyculata, Myrica gale, Picea mariana, Acer rubrum.

SITE 45--PFO1E--Acer rubrum, Betula lutea, Rhododendron maximum, Ilex laevigata, Lindera benzoin.

SITE 46--PSS3/4Ba--Chamaedaphne calyculata, Picea mariana, Pinus strobus, Rhynchospora alba, Sarracenia purpurea.
--PFO4Ba--Picea mariana, Pinus strobus, Acer rubrum, Rhododendron maximum.

SITE 47--PFO1/4E--Acer rubrum, Tsuga canadensis, Pinus strobus, Rhododendron maximum, Picea mariana.