

FIELD REPORT FOR
WILLIAMSPORT NE, SE

August 2 to 6, 1982, September 20 to 24, 1982

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INTRODUCTION

The Williamsport 1:100,000 work areas are located in the northeastern corner of Pennsylvania, longitude 76°W to 77°W and latitude 41°N to 42°N. The major watersheds within the work areas are those of the Susquehanna, Loyalsock, Lycoming and Tioga rivers. Two ecoregions (Bailey 1978)* are represented here: the Laurentian Mixed Forest, Northern Hardwoods (2113) and the Eastern Deciduous Forest, Appalachian Oak Forest (2214).

The objectives of the field trip were to:

- identify signatures on B&W and CIR photography,
- Compare signatures of the B&W and CIR photos where there was overlap,
- identify subclasses of PFO and PSS,
- identify as many areas of non-persistent emergents and aquatic beds as possible,
- determine accuracy of water regimes,
- determine plant species present.

The aerial photography used for interpretation is 1:80,000 B&W panchromatic and 1:58,000 Color Infra-red positives. The B&W photos were flown on 10/12/76, 4/15/77 and 5/26/77. The CIR photos were taken on 5/4/81.

All of the B&W photos were interpreted during the summer of 1981 while the CIR was only reviewed prior to the field trip.

Note that the 12/18/81 conventions have been adopted for the Aquatic Bed subclasses.

IN-FIELD AND PHOTO OBSERVATIONS

Nanticoke

SITE 1---PEM2Fh---This emergent wetland forms a narrow border around Fairchild Pond. Sparganium americanum is the dominant species with a variety of species present. This emergent area is not visible on the B&W photo and has been represented by a dashed linear pond border.

* Bailey, Robert G. 1978. Description of the Ecoregions of the United States. Forest Service, U.S.D.A. Ogden, Utah. 77 pp.

SITE 2---PAB3/OWZh--Here there are scattered patches of Nymphaea odorata but it was felt to be enough to mix the classes. This had been typed as OW along with the following.

---PSS1/EM2Fh--Cephalanthus occidentalis and Sparganium americanum are co-dominant with Ludwigia palustris present.

---PSS1/EM2Eh--Again C. occidentalis and S. americanum are dominant but there is a great variety of species occurring in this zone.

SITE 3---PEM5B--This site was overlooked on the aerial photos. The dominant species is Scirpus cyperinus. The soil is an Aeric Fragiaguet and is probably a seepage area.

SITE 4---L2EM2/AB3Fh--This site grades from an "E" water regime to permanently flooded with a wide variety of species reflected by the conditions. Brasenia Schreberi dominates the wettest areas and Scirpus Olneyi dominates the shoreline.

---PSS1/EM6F--Decodon verticillatus, Spiraea tomentosa are the most common species present. Although the substrate was exposed at this time it is felt that the abundance of Decodon is indicative of semi-permanent flooding. The photo signature is one of channels among low shrubs and emergents.

SITE 5---PEM2/5E--The photo shows more OW but there was little left on Sept. 20. Sparganium and Scirpus cyperinus dominate. There is still a small pool at the road with Ceratophyllum sp. and Spirodela polyrhiza.

---PSS1/EM5E--A mix of species occur here with possibly sapling Acer rubrum the dominant shrub and Calamagrostis canadensis the most common emergent.

---PFO1E--Acer rubrum dominates with Salix nigra, dead trees, and Pinus strobus completing the overstory. The understory is dense with the composition about that of the SS/EM polygon.

Auburn Center

SITE 6---PEM5E--Leersia oryzoides, Scirpus cyperinus and several other species are common. This is probably an old beaver meadow. The site was pretty dry, the stream more than a foot below the banks, but with the dry year and the amount of Leersia, it is believed that the soil is saturated most years.

Lawton

SITE 7---PFO1/4E--The leaves-on photography (10/12/76) made it difficult to subclass this wetland. Acer rubrum and Tsuga canadensis are dominants. The soil is mucky with hummocky microtopography.

---SS1/EM5E--This had been included as upland. Spiraea latifolia and a variety of emergents without a clear dominant are found here. The same soil conditions prevail here as above.

Friendsville

SITE 8---PFO1/4A--Tsuga canadensis is the dominant. This is a linear wetland where the USGS 7½°quad indicates a fairly broad wetland polygon.
---PFO5/EM5Eb--Beaver impounded this wetland killing most of the trees. Scirpus cyperinus, Agrostis sp. and Juncus effusus are the dominant emergents. The trees appear to have been alive at the time of the photography (10/12/76).

SITE 9--PSS3Eha--Chamaedaphne calyculata is the dominant species. This may be a flooded bog--thus the "E" water regime instead of a "B". It had originally been classified as a PEM5F.

---PAB3/OWHh--Nuphar variegatum is dominant though scattered over the pond surface. It is not visible on the fall 1976 photography. The water body is large enough that it probably will never dry entirely. It is probably a natural pond that has had the water level raised by artificial impoundment.

SITE 10--PSS3Bb--Chamaedaphne dominates with scattered dead trees. It had been classified as PSS/EM5B.

---PEM2Fb--Sparganium americanum is dominant along the shallow edges with other species growing at the upland edge.

Troy

SITE 11--PFO1A--Acer rubrum and some Populus tremuloides dominate with some shrubs and emergents in the understory.

Gleason

SITE 12--PEM5Ba--There is no clear dominant at this site. This wetland polygon had been classified as a PSS1/EM5E. There are not enough shrubs to mix the classes.

SITE 13--PSS1/EM5Ba--The only correction made at this site was the water regime. Vaccinium corymbosum and 2 species of Carex are dominant with a variety of other species present.

Grover

SITE 14--PSS1Fb--Spiraea latifolia is the dominant with Calamagrostis canadensis as a common species.

---PFO4C--Tsuga canadensis dominates this site. There are scattered hummocks of Sphagnum and Carex trisperma with dry, unvegetated basins that appear to hold water for some time in the spring.

Canton

SITE 15--PSS5/EM5Eb--More water is visible on the CIR photo than at the time of the field check. Dead alder, Echinocloa crusgalli and Leersia oryzoides dominate with a variety of species present. It is possible that the beaver dam holding back water has deteriorated since the photo was taken.

Towanda

SITE 16--PEM5B--This is a seep with Typha latifolia, Acorus calamus and Scirpus cyperinus as co-dominants. This had been classified as upland. The signature is difficult to distinguish from upland since it is grazed.
--PSS1/EM5B--This could also be mistaken for upland. Spiraea latifolia, Cornus ammomum and Ulmus americanus are common shrubs while Carex lurida and Scirpus cyperinus are common emergents. The area is probably rarely flooded given the size of the stream coursing through the wetland.

SITE 17--R2EM2E--There are three co-dominants in distinct zones between the island and the river bank. The zones are probably indicative of length of flooding time. The three species are Carex stricta, Justicia americana and Leersia oryzoides.

Wyalusing

SITE 18--PSS1/EM5A--The area appears dry on the photo and was dry upon field inspection. The vegetation would suggest that the site is wet early in the growing season. Spiraea latifolia, Cornus, Eupatorium maculatum and Phalaris arundinacea are the most common species.

Picture Rocks

SITE 19--PEM5Eh--Juncus effusus, Carex lurida and several other species are common. The area had been dammed in the past but may not be maintained on the drainage basin is not sufficiently large to supply water throughout the summer. Alnus sp. is growing around the edges.

SITE 20--PSS3/1F--Chamaedaphne and Vaccinium corymbosum are the dominant species. Chamaedaphne has a maroon signature on the CIR photos. The deep blue signature with it suggests very wet conditions.

--PFO4/5Eb--Pinus strobus and dead trees dominate. A beaver dam is responsible for raising water levels and killing the trees.

Sonestown

SITE 21--PSS1E--Spiraea latifolia and Rosa palustris are co-dominants. A blue signature (CIR) indicates wetland deciduous trees or shrubs and usually a saturated water regime.

SITE 22--PFO1E--Acer rubrum is the dominant overstory species. There is a thick understory of Spiraea latifolia, other shrubs and several emergent species. Sphagnum sp. is also present.

Eagles Mere

SITE 23--PEM5E--Carex rostrata, C. stricta and other emergent species dominate this site. The signature is a bluish white.

--PF01/SS1E--Acer rubrum, Alnus sp. and Vaccinium corymbosum are co-dominants. There is also a fair abundance of emergents at least on the edge.

SITE 24--PF04/1E--Tsuga canadensis and Acer rubrum are co-dominants. Pinus strobus, Carex trisperma and Sphagnum spp. are common.

SITE 25--PF01/4E--Acer rubrum, Tsuga canadensis and Betula lutea are co-dominants. Species composition is similar to SITE 24. This wetland is large with several cover types.

SITE 26--PF04/1E--Pinus strobus, Tsuga and Acer comprise the overstory. Nemopanthus mucronata and other shrubs are common in the understory. Conifers stand out as deep red on CIR photography.

Muncy

SITE 27--PF04/1A--Tsuga canadensis, Betula lutea and Rhododendron maximum are common. There are a great many species occurring here on this stream flood plain. Many of the emergents are found in small depressions with a "C" or "E" water regime.

Montoursville South

SITE 28--PF05/EM2Eh--This impoundment may be manipulated for wildlife. On the B&W (4/15/77) photos the trees appear to be alive, so the impounding may be fairly recent. The dead trees appear to be Acer rubrum and the emergent vegetation is mostly Polygonum sagittatum. There is still a stand of PFO1E.

SITE 29--PSS1/OWZh--The shrubs are Cephalanthus occidentalis. This also appears to be a managed impoundment.

--PF05Zh--Dead trees and shrubs are dominant here with scattered live shrubs and emergents.

--PSS5/EM5E--Dead shrubs and a variety of emergents dominate the upper end of the impoundment.

Bloomsburg

SITE 30--PF01C--Acer saccharinum is the dominant tree species. The understory ranges from sparse to thick and includes Lindera benzoin, Impatiens capensis and Boehmeria cylindrica. This may be an old meander of the river and probably holds water until late spring. The soil is Holly silt loam.

Sybertsville

SITE 31--PF01/SS1E--Acer rubrum is dominant in the overstory while Lindera and Rhododendron maximum are common understory shrubs. This site was difficult to subclass on the B&W photography due, probably, to the R. maximum and scattered Pinus strobus.

Sweet Valley/Schickshinny

SITE 32--PF01C--This wetland sits on a small bench on the hillside above the floodplain. A. rubrum dominates with a variety of herbaceous species scattered over the substrate.

Sweet Valley

SITE 33--PSS3/EM6F--Chamaedaphne and Decodon verticillatus are co-dominants surrounding a pocket of POW. This is a difficult type to identify on B&W photography but the small channels between islands of vegetation appear to be the best indication.

Harvey's Lake

SITE 34--PEM5E--This wetland is dominated by Carex rostrata with several species of emergent common. There are also scattered shrubs and a few trees.

Meshoppen

SITE 48 (8/6/82)--PF01A--This site is dominated by A. saccharinum with a thick growth of herbaceous vegetation beneath. This area is probably flooded for a short time during peak flood stage of the Susquehanna River. At the time of the field check, the river was several feet below bank-full.

--PSS1/EM2E--Salix sericea and Justicia americana are co-dominants in distinct bands but are not possible to separate. The Salix occurs on the drier sites. At the time the photography was taken (10/12/76) the Susquehanna was in flood.

SITE 49--PF01A--This is a delta formed at the mouth of the Mehoopany Creek and is probably flooded during the spring. A. saccharinum is the dominant overstory species with a lush growth of herbaceous vegetation on the Holly silt loam.

Jenningsville

SITE 50--L2EM2/AB3Zh--Nuphar variegatum and Sparganium americanum are co-dominant. It is possible to see something in the water on the 10/12/76 B&W photo but without checking, it would be difficult to determine what it is. The vegetation appears as a light, cloudy signature in the water.

--PSS1/EM2Eh--Cephalanthus occidentalis, and Leersia oryzoides are the dominants with other species of emergents in association. This type occurs as a border to the upper end of the lake.

SITE 51--PSS5/AB4Zb--Most of this wetland appears as open water on the fall 1976 photography. The site is dominated by stumps and Lemna minor and other floating plants.

--PAB4Zb--The Lemna and Spirodela polyrhiza are the dominants with emergent sedges and rushes on the edge. This site is probably enriched by surrounding agricultural practices.

SITE 52--PSS3/1Fh--The lake has been impounded for recreation. The Chamaedaphne, Alnus and the other species comprising the islands may be remnants of a former wetland that may have been a bog.

Lopez

SITE 53--PSS1/EM5E--Spiraea latifolia is the dominant shrub while Sparganium americanum and Calamagrostis canadensis are the dominant emergents. The emergents are white on the B&W while the shrubs are gray.

SITE 54--PEM5F--Carex stricta, Juncus effusus and a grass are the most common species. There was not much surface water in early August but there was enough unvegetated substrate to feel that an "F" water regime would be appropriate. Mine slag encroaching from the south may be changing the water regime and affecting species composition.

--PSS1E--Spiraea latifolia, Viburnum recognitum and Alnus sp. dominate.

SITE 55--PSS5/AB3Zb--Nymphaea odorata, Nuphar variegatum are dominant with several species of narrow-leaved emergents common. It was felt that there were enough dead shrubs to mix the classes.

Red Rock

SITE 56--PAB3Zb--Brasenia Schreberi was the only floating-leaved plant noted. The signature is light patches in open water.

--PSS1/EM5Fb--Cephalanthus is the dominant shrub while several emergents, Typha latifolia and Sparganium among them, are common. This type is found along the shallower edges.

SUMMARY

Both B&W and CIR photography were used to classify wetlands in the Williamsport work areas. None of the B&W photos taken on three different dates are satisfactory. Subclasses for forested and scrub/shrub wetlands were difficult to determine. Seepage areas were also difficult to identify. The Susquehanna River was in flood when the photography was taken on 10/12/76. Therefore, beach/bars and emergent and some scrub/shrub wetlands associated with the river were obscured.

The CIR photography, on the other hand, is excellent. Subclasses are usually easily identified and seeps can be located without much difficulty. It appears that some streamside PEM's with a white signature and no surface water have "A" water regimes while those with some surface water and a red signature are probably "C's".

Most of the rivers in the work areas are upper perennial with the Susquehanna the only major lower perennial.

The 12/18/81 mapping conventions for the Aquatic Bed subclasses were followed. They were followed for emergents also with the following exceptions: PEM1 is used to indicate Phragmites australis, PEM5 for narrow-leaved persistent emergents and PEM6 for Decodon verticillatus.

Soil surveys were used where available to verify borderline areas.

APPENDIX I

Black and White Photography

Williamsport NE, SE

Date of Imagery

Quality

10/12/76

poor, leaves on

4/15/77

poor contrast, dark

5/26/77

poor, leaves on

Color Infra-Red Photography

5/4/81

excellent contrast and
resolution

APPENDIX II

Partial community lists for Williamsport check sites.

- SITE 1--PEM2Fh--Sparganium americanum, Polygonum punctatum, Eleocharis obtusa, Lycopus uniflorus, Carex lurida, Leersia oryzoides.
- SITE 2--PAB3Zh--Nymphaea odorata.
--PSS1/EM2Fh--Cephalanthus occidentalis, Sparganium americanum, Ludwigia palustris.
--PSS1/EM2Eh--C. occidentalis, S. americanum, L. palustris, Cornus ammomum, Leersia oryzoides, Bidens connata, Penthorum sedoides, Juncus acuminatus, Eleocharis obtusa.
- SITE 3--PEM5B--Scirpus cyperinus, Verbena hastata, Carex spp., Juncus sp.
- SITE 4--L2EM2/AB3Fh--Brasenia Schreberi, Scirpus Olneyi, Leersia oryzoides, Juncus acuminatus, Juncus canadensis, Polygonum hydropiperoides, Utricularia intermedia, Sparganium americanum.
--PSS1/EM5F--Decodon verticillatus, Sphagnum sp., Spiraea tomentosa, Acer rubrum, Chamaedaphne calyculata.
- SITE 5--PEM2/5E--Sparganium americanum, Scirpus cyperinus, Decodon verticillatus, Leersia oryzoides, Agrostis scabra.
--PSS1/EM5E--Acer rubrum (<20 ft.), Alnus sp., Spiraea latifolia, Cephalanthus occidentalis, Vaccinium corymbosum, Carex comosa.
--PFO1E--Acer rubrum, Salix nigra, Pinus strobus, dead trees.
- SITE 6--PEM5E--Leersia oryzoides, Scirpus cyperinus, Impatiens capensis, Polygonum sagittatum, Juncus effusus.
- SITE 7--PFO1/4E--Acer rubrum, Tsuga canadensis, Betula lutea, Vaccinium corymbosum, Sphagnum sp., Osmunda cinnamomea.
--PSS1/EM5E--Spiraea latifolia, Leersia oryzoides, Scirpus cyperinus, Eupatorium perfoliatum, Phleum sp.
- SITE 8--PFO1/4A--Tsuga canadensis, Betula lutea.
--PFO5/EM5Eb--Scirpus cyperinus, Agrostis sp., Juncus effusus.
- SITE 9--PSS3Eah--Chamaedaphne calyculata, Nuphar variegatum.
--PAB3/OWHh--Nuphar variegatum, Brasenia Schreberi.
- SITE 10--PSS3Bb--Chamaedaphne calyculata, dead trees.
--PEM2Fb--Sparganium americanum, Carex lacustris, Dulichium arundinaceum, Hypericum virginicum.
- SITE 11--PFO1A--Acer rubrum, Salidago canadensis, Populus-tremuloides, Crataegus sp., Solidago rugosa.
- SITE 12--PEM5Ba--Typha latifolia, Carex trisperma, Dryopteris Thelypteris, Leersia oryzoides, Lycopus sp., Sphagnum sp..
--PFO4/1Ba--Pinus strobus (incomplete list).

- SITE 13--PSS1/EM5Ba--Vaccinium corymbosum, Carex rostrata, C. trisperma,
Sphagnum spp.
- SITE 14--PSS1Fb--Spiraea latifolia, Calamagrostis canadensis.
--PFO4C--Tsuga canadensis, Carex trisperma, Sphagnum sp.
- SITE 15--PSS5/EM5Eb--dead Alnus sp., Echinocloa crusgalli, Leersia oryzoides,
Polygonum sagittatum, Spiraea latifolia.
- SITE 16--PEM5B--Typha latifolia, Acorus calamus, Scirpus cyperinus.
--PSS1/EM5B--Spiraea latifolia, Cornus ammonum, Ulmus americanus, Carex
lurida, Scirpus cyperinus.
- SITE 17--R2EM2E--Carex stricta, Justicia americana, Leersia oryzoides,
Eleocharis sp., Xanthium sp., Equisetum sp.
- SITE 18--PSS1/EM5A--Spiraea latifolia, Cornus ammonum, Eupatorium maculatum,
Phalaris arundinacea, Salix sp., Typha latifolia.
- SITE 19--PEM5Eh--Juncus effusus, Carex lurida, Leersia oryzoides, Hypericum
sp., Polygonum sagittatum, Carex tribuloides.
- SITE 20--PSS3/1F--Chamaedaphne calyculata, Vaccinium corymbosum, Carex rostrata,
C. stricta.
--PFO4/5Eb--Pinus strobus, dead trees (incomplete list).
- SITE 21--PSS1E--Spiraea latifolia, Rosa palustris, Cephalanthus occidentalis,
Alnus sp., Osmunda cinnamomea.
- SITE 22--PFO1E--Acer rubrum, Spiraea latifolia, Impatiens capensis, Sphagnum
sp., Leersia oryzoides, Ci~~n~~na arundinacea.
- SITE 23--PEM5E--Carex rostrata, C. stricta, Scirpus cyperinus, Dulichium
arundinaceum, Juncus brevicaudatus.
--PFO1/SS1E--Acer rubrum, Vaccinium corymbosum, Alnus rugosa, Spiraea
latifolia, Carex stricta.
- SITE 24--PFO4/1E--Tsuga canadensis, Acer rubrum, Pinus strobus, Kalmia latifolia,
Carex trisperma, Sphagnum spp., Nemopanthus mucronata, Osmunda
cinnamomea.
- SITE 25--PFO1/4E--Acer rubrum, Tsuga canadensis, Betula lutea, Osmunda
cinnamomea, Carex trisperma, Sphagnum sp.
- SITE 26--PFO4/1E--Pinus strobus, Tsuga canadensis, Acer rubrum, Nemopanthus
mucronata, Vaccinium corymbosum.
- SITE 27--PFO4/1A--Tsuga canadensis, Betula lutea, Rhododendron maximum,
Sassafras albidum, Liriodendron tulipifera, Acer rubrum, Geum sp.,
Lobelia sp., Arisaema sp.
- SITE 28--PFO5/EM2Eh--dead trees (A. rubrum), Polygonum sagittatum, Leersia
oryzoides, Dryopteris Thelypteris.

- SITE 29--PSS1/OWZh--Cephalanthus occidentalis.
--PFO5/Zh--dead trees and shrubs, Cephalanthus occidentalis, Sparganium americanum, Typha latifolia.
--PSS5/EM5E--dead shrubs, Scirpus cyperinus, Typha latifolia, Acer rubrum, Cicuta sp.
- SITE 30--PFO1C--Acer saccharinum, Betula lutea, Impatiens capensis, Boehmeria cylindrica, Lindera benzoin.
- SITE 31--PFO1/SS1E--Acer rubrum, Lindera benzoin, Rhododendron maximum, Sphagnum sp., Betula lutea.
- SITE 32--PFO1C--Acer rubrum, Carex bromoides, Viola sp., Galium sp., Onoclea sensibilis, Impatiens capensis.
- SITE 33--PSS3/EM6F--Chamaedaphne calyculata, Decodon verticillatus, Alnus sp., Cephalanthus occidentalis.
- SITE 34--PEM5E--Carex rostrata, Typha latifolia, Scirpus cyperinus, Calamagrostis canadensis, Cephalanthus occidentalis.
- SITE 48--PFO1A--Acer saccharinum, Impatiens pallida, Urtica sp., Boehmeria cylindrica, Polygonum coccineum, Fraxinus nigra.
--PSS1/EM2E--Salix sericea, Justicia americana, Phalaris arundinaceum, Equisetum sp.
- SITE 49--PFO1A--Acer saccharinum, Impatiens pallida, Lindera benzoin, Toxicodendron radicans, Matteucia struthoides.
- SITE 50--L2EM2/AB3Zh--Nuphar variegatum, Sparganium americanum.
--PSS1/EM2Eh--Cephalanthus occidentalis, Leersia oryzoides, Scirpus validus, Carex comosa, C. lupulina, C. scoparia.
- SITE 51--PSS5/AB4Zb--stumps, Lemna minor, Spirodela polyrhiza, Ceratophyllum sp.
--PAB4Zb--Lemna minor, Spirodela polyrhiza, Ceratophyllum sp., Nuphar variegatum, Carex comosa.
- SITE 52--PSS3/1Fh--Chamaedaphne calyculata, Alnus sp., Vaccinium corymbosum, Sparganium americanum, Scirpus cyperinus.
- SITE 53--PSS1/EM5E--Spiraea latifolia, Sparganium americanum, Calamagrostis canadensis, Viburnum recognitum, Alnus sp., Eleocharis sp.
- SITE 54--PEM5F--Carex stricta, Carex sp., Juncus effusus, Poa sp., Epilobium sp., Spiraea latifolia.
--PSS1E--Spiraea latifolia, Viburnum recognitum, Alnus sp., Carex sp.
- SITE 55--PSS5/AB3Zb--Nymphaea odorata, Nuphar variegatum, Sparganium americanum, Dulichium arundinaceum, dead shrubs, Scirpus cyperinus.
- SITE 56--PAB3Zb--Brasenia Schreberi.
--PSS1/EM5Fb--Cephalanthus occidentalis, Carex sp., Typha latifolia, Sparganium americanum.