Field Report for Boston S.E. and Providence N.E.

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Conclusions and comments resulting from the field reconnaisance check of Boston S.E. and Providence N.E. 1:100,000 quadrants.

1. In some cases PEM areas were classified PSS. This seemed to occur when high emergents, Phragmites, were present. These areas should be checked carefully and compared to correctly classified areas. Tall emergents may give a darker signature.

2. Transitional estuarine-palustrine wetlands are difficult to classify. Photos and maps should be checked for the existence of barriers (roads, dikes, etc.) that might inhibit salt water intrusion and create paulstrine conditions. A transitional wetland should be classified as Palustrine when enough shrubs (60% or more) are present to indicate that fresh water conditions exist. If 60% of the wetland is covered by emergents, with the same signature as estuarine emergents, it should be classified estuarine.

3. The total number of incorrectly classified wetlands appears high but may be explained, in part, by the lack of adequate collateral data and the difficulty involved in determining Estuarine/Palustrine breaks (8 incorrect interpretations involved Estuarine/Palustrine systems). We relied on Timson's charts to establish these breaks in Maine.

4. We should pull out EM from SS wetlands in PSS/EM polygons whenever discrete units of 5 acre areas can be delineated.

5. Check R20W's and make sure they aren't R30W's. The possibility of using the classification R50W, when the subsystem is unknown, was discussed.

6. Check to see that all wetlands on the USGS maps are delineated on the photos. Ignore the color of USGS wetland symbols.

7. Check soil survey maps for areas field checked as farmed wetlands.

8. Do not rely solely on Mass Map Down Maps for salt/fresh water breaks.

9. The f modifier should only be used to classify cranberry bogs that are presently being farmed.

10. We should not rely on the CZM Atlas to determine estuarine-marine breaks.

11. Floating vegetation (e.g. Nymphea) does not appear on the spring (April 1) photos.

12. Some of the photography appears hazy. This bad resolution added to the difficulty of interpreting signatures correctly.

13. Some Cranberry bogs are still flooded on the early spring photography. Therefore, we had to depend on outdated USGS maps to determine if they should be called PSSa of PSSaf. This flooded spring condition explains the incorrect typing of Site 45 (called PSSaf-actually PMLIEa)

Cranberry Bog Succession

Seven field check reports were made of cranberry bogs at different stages of succession showing the transition in vegetation from farmed to abandoned states (Sites: 19, 33, 25, 26, 27, 35, 45). The data is summarized below.

Site 19 (EM/SS-farmed). In this bog Vaccinium macrocarpon was the dominant understory; Juncus balticus was the dominant upper canopy. Carex sp., Toxicodendron radicans, Solidago sp., Rosa palustris, and Myrica pennsylvanicum were among the species found on the outer edges of the bog.

Site 33 (SS-abandoned) and site 25 (SS-abandoned) seemed to be in early stages of succession. Vaccinium macrocarpon was the dominant understory. The emergent vegetation included: Sphagnum, Juncus effusus, Sciurpus cyperinus, and Onoclea sensibilis. Spirea latifolia was the dominant overstory; other shrubs included Toxicodendron radicans, Spirea tomentosa in Site 33, and Vaccinium corymbosum in Site 25.

Site 26 (SS-abandoned) seemed to be in a mid stage of succession. In addition to Vaccinium macrocarpon, the understory included many of the species found in "early" abandoned sites: Juncus effusus, Toxicodendron radicans, Scirpus cyperinus, and Sphagnum. The upper story included Spirea tomentosa and Vaccinium corymbosum. Unlike the early bogs, Acer rubrum was an abundant invading shrub species; Kalmia angustifolia and Virburnum were also present.

Sites 27 (FO-abandoned) and 35 (FO/SS-abandoned) had been abandoned longer than Sites 25 and 26 and appeared to be reaching a climax stage of

forested vegetation. Acer rubrum and Pinus rigida were CoDom in Site 35. Vaccinium corymbosum, wild strawberry, and Dryopteris thelyteris were present at both sites.

Compared to the bogs discussed previously, Site 45 (PML) was somewhat unusual. It appeared to be an abandoned cranberry bog that had been flooded on a regular basis thus prohibiting growth of shrubs and trees, Sphagnum, Salix sp., and Vaccinium macrocarpon were present.

Estuarine/Palustrine Succession

Our field checks confirmed the fact that wetlands in transitional stages, between estuarine and palustrine, are difficult to classify. At Site 18A and B and 34A and B roads had disturbed former tidal marsh areas. The vegetation in these wetlands was well-mixed.

The water at 34A was brackish to the taste and salt marsh plants (Spartina patens, Spartina alterniflora, Distichlis spicata) were still predominant. In addition Phragmites australis, Typha augustifolia, and Toxicodendron radicans were present. Pinus rigida and Chamaecyparis thyoides were growing along the edges. At Site B shrubs were more prevalent (e.g. Toxicodendron radicans, Myrica cerifera, Pinus rigida, Chamaecyparis thyoides) which indicated that conditions were fresh.

At Site 18B Spartina patens, a classic salt marsh plant, was dominant. But panicum at Site A and the presence of Spirea tomentosa and Taxicodendron radicans indicated that the area was rarely flooded by tidal water.

Cape Cod Field Trip - List of Communities

Site 1) PFO (4E)
Cedar overstory + Clethra alnifolia understory co-dominant

Site 2) PFO (1C)
Red Maple (Acer rubrum) dominant overstory
Clethra alnifolia dominant understory

Site 3) PSS/EM (1/5E)
Well mixed - Acer rubrum, Clethra alnifolia, Typha latifolia

Site 4) E2EM (5P)
Phragmites australis, Juncus girardi co-dominant

Site 5) E2EM (5P)
Spartina alterniflora dominant in regularly flooded zone and Codom w/Spartina patens in irregularly flooded zone
Spartina patens co-dominant with Phragmites australis in high marsh

Site 6) E2EM (5Pd)
Spartina patens dominant. Phragmites australis abundant.

Site 7) PFO/SS (1/1E)
Acer rubrum dominant overstory

Site 8) PEM
No vegetation at moment - will be filled

Site 9) PSS/EM (E)
Acer rubrum dominant shrub
Decodon verticillatus, 1 unidentified grass co-dominant

Site 10) PFO (1E)
Acer rubrum, Fraxinus sp., Pinus strobus, Quercus sp.

Site 11) E2EM (5P)
Spartina patens dominant
Distichlis spicata, spartina alterniflora, Sweet grass

Site 12) L2AB (4H)
Nymphaea odorata dominant

Site 13) E2EM (5P)
Juncus balticus, potentilla anserina
PSS1R
Rosa palustris, cowvetch

Site 14) E2EM (5P)
Spartina patens dominant
Eleocharis sp., Juncus girarci, Carex sp.

Site 15) PAB (4H)

Typha angustifolia & Phragmites australis dominant on edges
Nuphar dominant, Spiro dela (Duckweed)

Site 16) PEM (5B)
Phragmites australis, solidago, ~~Rhus~~ Toxicodendron radicans

Site 17) E2EM (5P)
Typha angustifolia & Carex sp. co-dominant
Phragmites australis

Site 18A) E2EM (5P)
Spartina patens dominant, Juncus girardi, Suaeda sp.,
Salicornia sp. (Panicum virgatum dominant in Palustrine)

18B) E2EM (5N/P)
Spartina patens, spartina alterniflora co-dominant

Site 19) PSS3af
Vaccinium macrocarpon dominant understory
Myrica pennsylvanicum
Juncus balticus dominant overstory
Carex sp., Toxicodendron radicans, Solidago sp.

Site 20A) E2EM (5P)
Spartina patens dominant
Scirpus robustus, Spartina alterniflora (creek side)

20B) E2EM (5P)
Spartina patens dominant
Phragmites australis, Juncus girardi, Spartina alterniflora

Site 21) E2EM (5P)
Typha angustifolia dominant
Acorus calamus, Iris virginica, Impatiens sp., Eleocharis.

Site 22A) E2EM (5P)
Spartina patens dominant
Scirpus robustus, Spartina alterniflora (creekside), Juncus girardi

22B) E2EM (5P)
Phragmites australis dominant
Typha angustifolia, Scirpus robustus, Toxicodendron radicans

22C) P FO/SS (1B or E)
Acer rubrum & Virburnum sp., co-dominant

Site 23) E2EM (5)
Distichlis spicata & Spartina patens co-dominant
Phragmites australis abundant on upland border

Site 24) E2EM (5P)
Spartina patens dominant, Spartina alterniflorida (creekside)
Distichlis spicata, Juncus girardi, Scirpus robustus

Site 25) PSS (1/3Ba)
Vaccinium macrocarpon & Spirea sp. co-dominant
Toxicodendron radicans, Juncus effusus, Scirpus cyperinus,
Vaccinium sp. (high bush blueberry)

Site 26) PSS(1/3Ba)
Vaccinium macrocarpon dominant understory
Acer rubrum abundant, Kalmia angustifolia, Pinus rigida

Site 27) PFO (1B)
Acer rubrum dominant
Vaccinium macrocarpon, abundant understory
Myrica pennsylvanica, Vaccinium sp. (high bush), Toxicodendron radicans

Site 28) E2EM (5Phd)
Spartina alterniflora, Spartina patens dominant
Limonium sp., Iva frutescens, Distichlis spicata,
Juncus girardi

Site 29) PSS (1B)
Myrica gale & Spirea sp., co-dominant
Vaccinium sp. (high bush), Salix sp., Rubus sp., Toxicodendron radicans

Site 30) PSS/EM (1/5C)
Well mixed - Prunus sp., Spirea tomentosa, Typha latifolia,
Juncus effusus, Polygonum spp., Rome~~x~~ sp., Virburnum sp.,
Rosa palustris.

Site 31A) PEM (5F)
Typha latifolia dominant
Spirea tomentosa, Juncus effusus

31B) same as above, with addition of Phragmites australis

Site 32) PEM5F
Typha angustifolia dominant
Toxicodendron radicans, Carex sp., Myrica pennsylvanica,
Scirpus americans abundant

Site 33) PSS (1/3Ea)
Vaccinium macrocarpon dominant understory
Spirea latifolia dominant overstory
Scirpus cyperinus, Carex sp., Spirea tomentosa

Site 34A) E2EM (5B)
Spartina patens, Phragmites australis, Typha latifolia tri-dominant

Site 34B) PSS/EM
Well mixed - Toxicodendron radicans, Spartina patens, Myrica pennsylvanica, Typha angustifolia, coastal cedar, Pinus rigida, Crataegus sp.

Site 35) PFO/SS (mixed/1B)
Pinus rigida & Acer rubrum co-dominant
Vaccinium (high bush) sp., Viburnum sp., Toxicodendron radicans, Myrica pennsylvanica, Vaccinium macrocarpon, Kalmia angustifolia

Site 36) E2EM (5P)
Well mixed - Spartina alterniflora, Solidago sp., Potentilla anserina, Spartina patens, Iva frutescens, Phragmites australis

Site 37A) E2EM (5P)
Typha angustifolia dominant
Iris virginica, Scirpus validus, Scirpus robustus, Solidago sp.

37B) PFO/SS (1/1E)
Acer rubrum dominant
Impatiens sp., Myrica gale, Rosa palustris, Virburnum sp.

Site 38) PFO (1E)
Acer rubrum dominant
Toxicodendron radicans, Osmonda cinnamomea, Thuja occidentalis

Site 39A) PSS/EM (1/5E)
Myrica gale dominand, Typha sp. codom
Toxicodendron radicans, Rosa palustris

39B) PSS/EM (1/5E)
Myrica gale & Dryopteris thelyperis & Scirpus americanus "tri-dom"

Site 40) PSS/OW (1 FH)
Myrica gale, Juncus effusus, Calamagrostis sp., Iris virginica

Site 41A) E2EM (5P)
Spartina alterniflora & Spartina patens co-dominant
Juncus girardi, Scirpus robustus

41B) E2EM (5P)
Spartina patens dominant
Juncus girardi, Phragmites australis, Spartina alterniflora

41C) PSS/EM (1/5 E or R)
Typha sp. dominant
Toxicodendrom radicans, Vaccinium sp. (high bush), Panicum virgatum

41D) PEM (5E)
Phragmites australis, Scirpus americanus, Impatiens, Toxicodendron radicans, Panicum virgatum, Myrica pennsylvanica

Site 42) E2EM (5Pd)
Panicum virgatum dominant
Typha angustifolia, Eleocharis sp., Myrica pennsylvanica

Site 43A) E2EM (5Pd)
Juncus girardi dominant
Spartina cynoceroides, Scirpus robustus, Distichlis spicata

43B) E2EM (5Pd)
Spartina patens dominant
Phragmites australis, Typha angustifolia, Juncus girardi

Site 44) PFO (1B)
Acer rubrum dominant
Betula populifolia, Pinus strobus, Clethra alnifolia

Site 45) PML (1Ea)
Sphagnum, vaccinium macrocarpon, Salix sp.

Site 46) PSS/EM (1/5E)
Acer rubrum dominant overstory
Scirpus cyperinus dominant understory
Juncus effusus, Scirpus validus, Eleocharis sp., Saggitaria sp., Pontedaria sp., Spirea tomentosa

Site 47) PAB1OW (4Hh)
Well mixed - Nuphar sp., Nymphaea odorata, & unidentified floating leaf, Potomogeton sp., & Brassinia, Lysimachia sp., Juncus effusus, Sparganium sp., Saggitaria sp.

Site 48) Pss/EM (1/5 F or E)
Acer rubrum dominant. Decodon verticillatus dominant understory.
Clethra alnifolia

Site 49) PFO/EM (5/5H)
Dead trees very abundant
Decodon verticillatus dominand, Nymphaea odorata co-dominant.

Field Site #	USGS Quad/ Photo Name	Initial Delineation	In-field Classification
1	Weymouth	PFO	PFO 4 E
2	Weymouth	PFO	PFO 1 C
3	Weymouth	PSS/EM	PSS/EM1/5E
4	Weymouth	E2EM	E2EM5P
5	Weymouth	E2EM	E2EM5P
6	Weymouth	E2EMd	E2EM5Pd
7	Cohasset	PFO	PFO/SS 1 E
8	Cohasset	PEM	PEM
9	Cohasset	PSS	PSS/EME
10	Scituate	untyped	PFO 1 E
11	Duxbury	untyped	E2EM 5P
12	Duxbury	untyped	L2AB 4 H
13	Plymouth	E2EM	E2EM 5 P PSS 1 R
14	Plymouth	E2EM	E2EM 5 P
15	Sagamore	POW	PAB 4 H
16	Sagamore	PSS/EM	PEM 5 B
17	Sandwich	E2EM	E2EM 5 P
18A	Sandwich	PSS/EM POW	E2EM 5 E1OW
18B	Sandwich	E2EM	E2EM 5 N/P
19	Sandwich	PSSaf	PSS3af
20A	Sandwich	PEM	E2EM 5 P
20B	Sandwich	PEM	E2EM 5 P
21	Sandwich	E2EM	E2EM 5 P

Field Site #	USGS Quad/ Photo Name	Initial Delineation	In-field Classification
22A	Hyannis	E2EM	E2EM 5 P
22B	Hyannis	PSS	E2EM 5 P
22C	Hyannis	PFO	PFO/SS 1 B
23	Hyannis	omitted PSS	E2EM 5
24	Hyannis	E2EM	E2EM 5 P
25	Dennis	PSSaf	PSS1/3Ba
26	Dennis	PSSaf	PSS1/3Ba
27	Dennis	PFO	PFO 1 B
28	Orleans	E2EM	E2EM 5 Pdh
29	Wellfleet	PEM	PSS 1 B
30	Wellfleet	PSS/EM	PSS/EM1/5C
31A	No. Truro	untyped	PEM 5 F
31B	No. Truro	untyped	PEM 5 F
32	Orleans	PSS	PEM 5 F
33	Orleans	PSSa	PSS1/3Ea
34A	Harwich	PFO/SS	E2EM 5 B
34B	Harwich	PFO/SS	PSS/EM
35	Harwich	PFO/SS	PFO/SS 1 B/ mixed
36	Harwich	E2EM	E2EM 5 P
37A	Harwich	PSS/EM	E2EM 5 P
37B	Harwich	PFO/SS	PFO/SS1/1E
38	Dennis	PFO	PFO 1 E
39A	Dennis	E2EM	PSS/EM 1/5E
39B	Dennis	PSS/EM	PSS/EM/1/5E
40	Hyannis	PSS1OW	PSS/OW 1 FH

Field Site #	USGS Quad/ Photo Name	Initial Delineation	In-field Classification
41A	Woods Hole	E2EM	E2EM 5P
41B	Woods Hole	E2EM	E2EM 5 P
41C	Woods Hole	PFO/SS	PSS1/5 E (ORB)
41D	Woods Hole	PFO/SS	PEM 5 E
42	Onset	untyped	E2EM 5 Pd
43A	Wareham	untyped	E2EM 5 Pd
43B	Wareham	untyped	E2EM 5 Pd
44	Marion	PFO	PFO 1 B
45	Marion	PSSaf	PML1Ea
46	Marion	PSS/EM	PSS/EM/5E
47	New Bed. No.	L1OW	PAB/OW4Hh
48	Assawomp. Pond	PSS/EM	PSS/EM1/5 F or E
49	Hanover	L2OW	PFO/EM5/5H

Accuracy figures

30 correct
23 incorrect
53
8 previously untyped
61