UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

SUBJECT: Preliminary comments re: Tri-cities field assessment of 10 July 2014

FROM: Charles A. Rhodes Jr., Ecologist, OMA

TO: Carol Petrow, OEP

Plot 1 Tree Stratum: Genus/species	**Common Name**	**Total Pct. Aerial Cover**	**Wetland Indicator Status**
Ulmus americana*	**American elm**	**23**	**FAC**
Quercus michauxii*	**Swamp chestnut oak**	**13**	**FACW**
Liquidambar styraciflua*	**Sweetgum**	**8**	**FAC**
Acer rubrum*	**Red maple**	**8**	**FAC**
Liriodendron tulipifera	Tulip poplar	7	FACU
Fagus grandifolia	American beech	7	FACU**
Pinus taeda	Loblolly pine	6	FAC
Carpinus caroliniana	Blue beech	4	FAC
Quercus pagoda	Cherrybark oak	4	FACW
Carya ovata	Shagbark hickory	4	FACU

Plot 1 "Shrub" Stratum: Genus/species	**Common Name**	**Total Pct. Aerial Cover**	**Wetland Indicator Status**
Carpinus caroliniana*	**Blue beech**	**15**	**FAC**
Liriodendron tulipifera*	**Tulip poplar**	**5**	**FACU**
Acer rubrum*	**Red maple**	**4**	**FAC**
Aralia spinosa*	**Devil's walking stick**	**4**	**FAC**
Fagus grandifolia*	**American beech**	**4**	**FACU****
Ulmus americana	American elm	3	FAC
Ostrya virginiana	American hop hornbeam	3	FACU
Quercus michauxii	Swamp chestnut oak	1	FACW
Liquidambar styraciflua	Sweetgum	1	FAC
Ilex opaca	American holly	1	FAC

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Plot 2 (Reference) Tree Stratum: Genus/species	**Common Name**	**Total Pct. Aerial Cover**	**Wetland Indicator Status**
Liquidambar styraciflua*	**Sweetgum**	**26**	**FAC**
Quercus michauxii*	**Swamp chestnut oak**	**21**	**FACW**
Acer rubrum*	**Red maple**	**15**	**FAC**
Quercus pagoda	Cherrybark oak	12	FACW
Carpinus caroliniana	Blue beech	7	FAC
Ulmus americana	American elm	5	FAC
Quercus falcata	Southern red oak	5	FACU
Quercus laurifolia	Laurel oak	5	FACW
Quercus nigra	Willow oak	4	FAC

Plot 2 (Reference) "Shrub" Stratum: Genus/species	**Common Name**	**Total Pct. Aerial Cover**	**Wetland Indicator Status**
Carpinus caroliniana*	**Blue beech**	**5**	**FAC**
Acer rubrum*	**Red maple**	**3**	**FAC**
Ulmus americana	American elm	2	FAC
Quercus michauxii	Swamp chestnut oak	2	FACW
Ilex opaca	American holly	1	FAC

Plot 3 Tree Stratum: Genus/species	**Common Name**	**Total Pct. Aerial Cover**	**Wetland Indicator Status**
Carya ovata*	**Shagbark hickory**	**17**	**FACU**
Quercus michauxii*	**Swamp chestnut oak**	**13**	**FACW**
Acer rubrum*	**Red maple**	**12**	**FAC**
Quercus pagoda*	**Cherrybark oak**	**12**	**FACW**
Ulmus rubra	Slippery elm	10	FAC
Quercus falcata	Southern red oak	8	FACU
Liquidambar styraciflua	Sweetgum	7	FAC
Ulmus americana	American elm	7	FAC
Liriodendron tulipifera	Tulip poplar	7	FACU
Carpinus caroliniana	Blue beech	2	FAC

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Plot 3 "Shrub" Stratum: Genus/species	**Common Name**	**Total Pct. Aerial Cover**	**Wetland Indicator Status**
Acer rubrum*	**Red maple**	**8**	**FAC**
Ulmus rubra*	**Slippery elm**	**5**	**FAC**
Carpinus caroliniana*	**Blue beech**	**5**	**FAC**
Fagus grandifolia	American beech	4	FACU**
Ulmus americana	American elm	4	FAC
Quercus michauxii	Swamp chestnut oak	2	FACW
Carya ovata	Shagbark hickory	2	FACU
Ostrya virginiana	American hop hornbeam	1	FACU
Vaccinium corymbosum	Highbush blueberry	1	FACW

Plot 4 Tree Stratum: Genus/species	**Common Name**	**Total Pct. Aerial Cover**	**Wetland Indicator Status**
Quercus pagoda*	**Cherrybark oak**	**22**	**FACW**
Ulmus americana*	**American elm**	**19**	**FAC**
Acer rubrum*	**Red maple**	**12**	**FAC**
Liriodendron tulipifera	Tulip poplar	11	FACU
Quercus michauxii	Swamp chestnut oak	10	FACW
Liquidambar styraciflua	Sweetgum	8	FAC
Pinus taeda	Loblolly pine	5	FAC

Plot 4 "Shrub" Stratum: Genus/species	**Common Name**	**Total Pct. Aerial Cover**	**Wetland Indicator Status**
Carpinus caroliniana*	**Blue beech**	**10**	**FAC**
Acer rubrum*	**Red maple**	**4**	**FAC**
Ulmus americana*	**American elm**	**4**	**FAC**
Fagus grandifolia	American beech	3	FACU**
Liquidambar styraciflua	Sweetgum	2	FAC
Vaccinium corymbosum	Highbush blueberry	1	FACW
Ostrya virginiana	American hop hornbeam	1	FACU
Quercus michauxii	Swamp chestnut oak	1	FACW

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Plot 5 Tree Stratum: Genus/species	**Common Name**	**Total Pct. Aerial Cover**	**Wetland Indicator Status**
Quercus michauxii*	**Swamp chestnut oak**	**22**	**FACW**
Acer rubrum*	**Red maple**	**12**	**FAC**
Liriodendron tulipifera*	**Tulip poplar**	**17**	**FACU**
Quercus pagoda	Cherrybark oak	13	FACW
Liquidambar styraciflua	Sweetgum	5	FAC
Ulmus americana	American elm	5	FAC
Carpinus caroliniana	Blue beech	3	FAC
Ulmus americana	American elm	5	FAC
Diospyros virginiana	American persimmon	2	FAC
Carya ovata	Shagbark hickory	2	FACU

Plot 5 "Shrub" Stratum: Genus/species	**Common Name**	**Total Pct. Aerial Cover**	**Wetland Indicator Status**
Carpinus caroliniana*	**Blue beech**	**14**	**FAC**
Acer rubrum*	**Red maple**	**7**	**FAC**
Ulmus americana	American elm	5	FAC
Quercus michauxii	Swamp chestnut oak	2	FACW
Fagus grandifolia	American beech	1	FACU**
Liquidambar styraciflua	Sweetgum	1	FAC

Notes regarding the data above: Bold lettering and an asterisk denote dominant plant species in the stratum (i.e., all species that meet or exceed 50% of the dominance measure cumulatively totaled). ** indicates the potential for the coastal plain subspecies of *Fagus grandiflora*. "Shrub" stratum assumes that the sapling and shrub strata were combined as one.

Please find above a reworking of the vegetation data derived from the five sample plots. As we discussed in the field (and afterwards) there are several observations listed below as to how the data were collected and portrayed:

- As the vegetation data were collected in December of 2013 and April of 2014 (i.e., leaf off conditions), the available field information was limited. For example it appears that the data collected missed locally widespread species such as New York fern [(*Thelypteris novaboracensis*) FAC]; Royal fern [(*Osmunda regalis*) OBL]; Netted chainfern [(*Woodwardia areolata*) FACW]; and American pawpaw (*Asimina triloba*) FAC].

- The depiction of the "shrub" stratum is assumed to represent both the sapling and shrub stratum which "muddies" the information content somewhat.

- Given the leaf off circumstance measuring the tree canopy stratum using diameter at breast height (dbh) would have given more reliable information than percent aerial cover.

- The close association of pawpaw with a wet fern community implies an atypical wetland

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hydrology (definitive wetland hydrology with one or several confining layers near the soil surface). Moreover there is landscape diversity at several levels—both the microtopographic variation on a fine scale (e.g., most trees—particularly the canopy oaks were established on the mounds of the pit-and-mound microtopography) and also on a larger scale (e.g., two wetland water regimes of slightly different frequency and duration of inundation/saturation interspersed with relatively small, more mesic, patches of habitat.

- The relatively large component of canopy oaks—either individual species or collectively (see below) —is remarkable and indicates a potentially highly functioning wetland community type.

    - Plot 1: 2 oak species; 17% total aerial cover (84% cover of all species).
    - Plot 2: 5 oak species; 47% total aerial cover (100% cover of all species).
    - Plot 3: 3 oak species; 33% total aerial cover (95% cover of all species).
    - Plot 4: 2 oak species; 32% total aerial cover (87% cover of all species).
    - Plot 5: 2 oak species; 35% total aerial cover (87% cover of all species).

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